Chapter-IV
Mineral Receipts

Chapter-IV
Mineral Receipts

4.1 Tax administration

The responsibility for the management of mineral resources is shared between the Central and State Governments[74]. The Mines and Minerals (Development and Regulation) (MMDR) Act, 1957, enacted by the Central Government, lays down the legal framework for regulation of mines and development of minerals[75]. The Mineral Concession (MC) Rules, 1960, the Mineral Conservation and Development (MCD) Rules, 1988, and the Granite Conservation and Development Rules, 1999, have been framed for conservation and systematic development of minerals and for regulating grant of permits, licences and leases.

Legislations for exploitation of minor minerals have been delegated to the States. Accordingly, Karnataka Minor Mineral Concession (KMMC) Rules, 1994, were framed by the State Government.

4.2 Internal Audit

The Internal Audit Wing (IAW) is functional in the Department of Mines and Geology (DMG) since 1985. It is headed by an Accounts Officer on deputation from the State Accounts Department under the overall control of the Director of Mines and Geology.

As per the information furnished by the Department, Internal Audit has not been conducted since 2015-16, due to non-deputation of staff from the State Accounts Department. The year-wise details of the number of objections raised, settled and pending along with tax effect, as furnished by the Department**,** are given in **Table 4.1**.

Table 4.1
Year wise details of observations raised by IAW

(₹ in crore)

Year	Observations raised		Observations settled		Observations pending	
	Number of cases	Amount	Number of cases	Amount	Number of cases	Amount
Upto 2013-14	1,642	337.17	1,403	295.67	239	41.50
2014-15	02	-	-	-	02	-
2015-16	-	-	-	-	-	-
2016-17	-	-	-	-	-	-
2017-18	-	-	-	-	-	-

As seen from the above, it is clear that there were no activities of the IAW in the Department in the previous four-year period. This indicates that the Department is not according due importance to Internal Audit. Internal Audit has a deterrent and reforming effect by pointing out mistakes and ensuring remedies without loss of time, and non-conduct of Internal Audit leaves the Department vulnerable to the risk of control failure.

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[74] Entry 54 of the Union list (list I) and entry 23 and 50 of the State list (list II) of the Seventh Schedule of the Constitution of India.

[75] Other than petroleum and natural gas and atomic minerals.

4.3 Results of Audit

There are 34 auditable units in the Department of Mines and Geology. Out of these, Audit selected 16 units for test check wherein there were 3,401 leases. Out of these, Audit test checked records of 340 leases (10 *per cent*) during the year 2017-18 and noticed 13 cases (3.82 *per cent* of audited sample) of non-levy of penalty for transporting minor minerals without obtaining mineral dispatch permits, non/short-levy of royalty and non-observance of provisions of Acts/Rules etc. involving an amount of ₹ 134.68 crore. These cases are illustrative only as these are based on test check of records. The details of these paragraphs are given in **Table 4.2**.

Table 4.2
Results of Audit

(₹ in crore)

Sl. No.	Category	Number of Paragraphs	Amount
1.	Non-levy of penalty for transporting minor minerals without obtaining MDP	6	132.33
2.	Non/short-levy of royalty	4	2.32
3.	Other irregularities	3	0.03
	Total	**13**	**134.68**

During the year, an amount of ₹ 20.13 crore was realised in eight paragraphs pointed out in earlier years.

In addition to the audit of the selected units above, Audit undertook a Performance Audit on "Systematic and Scientific Mining and Protection of Environment in respect of Quarry Leases of Minor Minerals" in Karnataka. The audit findings involving ₹ 223.25 crore pertaining to the Performance Audit and an illustrative case relating to non-levy of royalty and penalty mentioned in Table 4.2, involving ₹ 131.01 crore are discussed in the following paragraphs.

4.4 Performance Audit on "Systematic and Scientific Mining and Protection of Environment in respect of Quarry Leases[76] of Minor Minerals"

Highlights

Preparedness of the Department of Mines and Geology (DMG) to introduce the new provisions relating to systematic and scientific mining was not adequate. Inventory of quarries was not comprehensive, relevant modern technologies like satellite imagery, GPS coordinates, etc. were either not used or used insufficiently and the mechanism to monitor transportation of minerals remained weak.

(Paragraph 4.4.9)

Joint Physical Verification conducted by Audit with the Department revealed:

- quarrying in 52 expired leases spanning over 29,800 square meters;
- quarrying outside the legal boundaries of 33 quarries spanning over 46,000 square meters; and
- quarrying in 109 illegal sites spanning over 1.07 lakh square meter.

Illegal extraction from such sites was quantified at 9.94 lakh cubic metres which implied a revenue of ₹ 191.96 crore including royalty and penalty.

(Paragraph 4.4.9.4)

With the help of satellite imagery through the Technical Consultant (Indian Institute of Science, Bengaluru), Audit detected:

- 532 locations of illegal quarrying sites spanning over 11.45 lakh square meters in Chikkaballapura Taluk. Volume of illegal extraction was estimated at 11.12 crore MT;
- 146 locations of quarrying beyond the legal boundaries spanning over 8.90 lakh square meters. Volume of illegal extraction was estimated at 27.68 crore MT.

(Paragraph 4.4.9.5)

Parameters in the Quarry Plan were not independently evaluated by the DMG and guidelines were not prescribed for fixation of annual target of production in the quarries. Claims of buffer zones left in the quarry areas were found fictitious in 244 out of 260 cases checked.

(Paragraph 4.4.11)

Assessment of production of minerals by the DMG in the quarries was inaccurate. An analysis (with satellite imagery) of production through the Technical Consultant revealed a production of 39.81 crore MT in 183 building stone quarries in Chikkaballapura Taluk as against 1.07 crore MT assessed by the DMG.

(Paragraph 4.4.14 and 4.4.15)

[76] Quarry Lease –means a lease granted to quarry minor mineral under the Karnataka Minor Mineral Concession Rules, 1994.

Non-compliance to the conditions relating to scientific and systematic mining was high, ranging from 96 to 100 *per cent* in five out of the seven conditions test-checked.

(Paragraph 4.4.16.2)

Implementation of conditions under Environmental Clearance (EC) was deficient due to non-coordination among the different agencies involved. Non-compliance to conditions envisaged under EC was high, ranging from 75 to 100 *per cent.*

(Paragraph 4.4.9.7 and 4.4.17.1)

The Environment Impact Assessment Authorities (EIAAs) concerned had issued ECs to the individual leases without a cumulative impact assessment or cumulative environment management plan as envisaged in the GoI notification of January 2016.

(Paragraph 4.4.19.2)

4.4.1 Introduction

4.4.1.1 Back ground

The Hon'ble Supreme Court in the case of Deepak Kumar Vs. State of Haryana ordered (27 February 2012) that the State Government should frame rules for environment management even for quarrying minor minerals, and further ordered that grant and renewal of all minor mineral leases, including those for an extent of less than five hectares[77], should be allowed only after obtaining Environmental Clearance (EC). The Hon'ble Supreme Court also directed the Government of India to implement the recommendations made in March 2010 by the Ministry of Environment, Forests and Climate Change (MoEFCC) regarding mining of minor minerals without causing environmental damage and to draw model guidelines for all the States to amend the Minor Mineral Concession Rules. Accordingly, the Government of India circulated (May 2011) 'Model Guidelines for Environment Management of Mining of Minor Minerals' to all the States.

The Government of Karnataka (Department of Mines and Geology), in consultation with various other Departments [78] involved in monitoring mining/quarrying activities, formulated the Karnataka Minor Mineral Concession (KMMC) (Amendment) Rules, 2013, which came into effect from 16 December 2013.

4.4.1.2 Highlights of the KMMC (Amendment) Rules 2013

The new provisions of Chapter IIA for 'Systematic, Scientific Mining and Protection of Environment' mandated that:

a) Quarry Plan (QP) [79] is a pre-requisite to the grant and renewal of lease/license[80]/working permission for quarrying any minor mineral;
b) Quarrying operations shall be carried out only as per approved QP;
c) Every QP should have a Mine Closure Plan [81], which includes Progressive Mine Closure Plan and Final Mine Closure Plan;
d) Every quarry lease holder shall prepare an Environment Management Plan (EMP) and submit the same to the State/District Environment Impact Assessment Authority/MoEFCC for approval. Every quarry lease holder shall implement environmental safeguard measures as committed in the EMP. The Environmental Clearance from the State Environment Impact Assessment Authority (SEIAA)/District Environment Impact Assessment Authority (DEIAA) was compulsory for quarrying operations.

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77 Initially, Ministry of Forests, Environment and Ecology had held that mining leases below five hectares did not need Environmental Clearance.

78 Finance, Transport, Forest, Ecology and Environment and Department of Law, Justice and Human Rights.

79 QP contains details viz. area of mineral deposit, excavation spots, cross-section of the excavation, tentative scheme of quarrying, natural resources, geology and lithology of the area, use of machinery and mechanical devices, etc.

80 License – permission given to Patta (private) land owners to quarry minor mineral in their lands.

81 Progressive Closure Plan is for implementation during the period for quarrying whereas Final Mine Closure is to be submitted one year before intended date of final mine closure.

4.4.2 Organisational Set-up

The administrative control of the Department of Mines and Geology (DMG), headed by the Director, is with the Secretary to the Government of Karnataka, Micro, Small and Medium Enterprises (MSME), Mines and textiles under the Commerce and Industries Department. There are two Joint Directors, one each for North Zone in Ballari and South Zone in Mysuru, under the DMG who have administrative control of all 31 Offices in 30 Districts (one Office in each District except Ballari, in which there are two Offices). A Deputy Director/Senior Geologist oversees each District Office.

The DMG grants mining and quarry leases/licenses/working permissions and conducts inspection of mines and quarries, besides implementation of Rules and Regulations vested with it under the Mines and Minerals (Development & Regulation) Act, 1957, the Minerals Concession Rules, 1960, the Karnataka Minor Mineral Concession (KMMC) Rules, 1994, as amended in 2013, and 2016. The DMG is also responsible for collection of royalty on both major and minor minerals and prevention of illegal mining/quarrying and unauthorised transport of minerals.

4.4.3 Administration of Quarry leases/licenses

The process of implementation of Systematic, Scientific Mining and Protection of Environment involves inter-Departmental co-ordination as given below:

- Approval for grant of Lease/ License by the DMG;
- Approval of Quarry Plan by the DMG;
- Grant of EC by State/District Level Environment Impact Assessment Authority for minor quarry areas upto 50 hectares (ha) and by MoEFCC, Government of India for quarry areas greater than 50 ha ;
- Execution of Lease/Deed by the DMG;
- Monitoring of leases by all Departments[82] in the District Task Force Committee[83];
- Grant of Consent for Establishment [84] (CFE) and Consent for Opertions[85] (CFO) to Stone Crusher Units/m-Sand[86] Units by Karnataka State Pollution Control Board (KSPCB);
- Monitoring of the conditions stipulated in the EC by the Regional Office, MoEFCC, GoI, the Regional Director (Environment),

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82 Forest, Mines and Geology, Police, Pollution Control Board, Revenue and Transport.

83 District Task Force comprising of Forest, Mines and Geology, Police, Pollution Control Board, Revenue and Transport Department representatives at District level was created vide Notification dated 13 November 2000 to prevent illegal mining activities. As per proceedings of Government of Karnataka dated 30 June 2011, the District Task Force headed by the Deputy Commissioner concerned was a single window agency for decisions on grant/renewal of minor mineral quarry leases.

84 Consent for Establishment: This consent is to be obtained prior to establishing any industry or process.

85 Consent for Operations: Once the industry or process plant is established along with the required pollution control systems, the entrepreneur is required to obtain Consent for Operations for the unit. This consent is given for a particular period, which needs to be renewed regularly subject to inspection and compliance to pollution control activities stipulated.

86 Manufactured Sand units – Sand manufactured by crushing ordinary building stone.

Department of Forest, Government of Karnataka and the Karnataka State Pollution Control Board.

4.4.4 Audit Objectives

This Performance Audit on 'Systematic and Scientific Mining and Protection of Environment in respect of Quarry Leases of Minor Minerals' seeks to examine whether:

- The DMG was adequately prepared, in terms of infrastructure, human and financial resources, and technical know-how, for implementation of the new provisions relating to systematic and scientific mining;
- Processes and controls within the DMG and other related agencies were effective in the approval of the Quarry Plans, grant of Environmental Clearance and monitoring the implementation of the QP/EC conditions; and
- The new provisions relating to systematic and scientific quarrying were adequate for protection of the environment.

4.4.5 Audit Criteria

The Audit Criteria have been derived from the following sources:

1. The Mines and Minerals (Regulation and Development) Act,1957;
2. The Karnataka Mineral Policy 2008 and Karnataka Sand Policy, 2011 and 2016;
3. The Karnataka Minor Mineral Concession Rules, 1994;
4. The Granite Conservation and Development Rules, 1999;
5. The Metalliferous Mining Regulations, 1961;
6. United Nations Framework Classification of minerals is prescribed in Guidelines under Mineral Conservation and Development Rules, 1988;
7. Environment Impact Assessment Notifications of September 2006 and allied circulars/instructions;
8. Proceedings of the District Task Force Committees;
9. The Karnataka Regulation of Stone Crushers Act, 2011 and Rules, 2012;
10. Karnataka Minor Mineral Concession (KMMC) (Amendment) Rules, 2013 with effect from December 2013.
11. Proceedings of the State Level Environment Impact Assessment Authority/District Level Environment Impact Assessment Authority; and
12. Various judicial decisions, Circulars, Guidelines issued by the relevant authorities.

4.4.6 Scope of Audit

The Performance Audit covers the period from 2014-15 to 2017-18 and was conducted during January to November 2018 to evaluate the preparedness of the DMG to implement the new provisions, systems and controls for approval of the Quarry Plan, transition of the existing leases to the new provisions, grant of new leases under the new provisions, and monitoring, with emphasis on co-ordination between different agencies involved in the monitoring environment safeguards as envisaged in the Environment Management Plan.

Out of the 31 District Offices in the State, nine[87] were selected for Audit. Chikkaballapura District was chosen on random basis for the Pilot Study and the remaining eight Districts[88] were selected using stratified[89] random sampling in IDEA package. There were 1,107 current quarry leases in the selected nine districts, comprising of 1,046 Ordinary Building Stone/Granite and 61 sand quarry leases. Audit selected all the 61 (100 *per cent*) sand leases and 524 (50.09 *per cent*) out of 1,046 current Ordinary Building Stone/Granite quarry leases). Audit also checked files/records/information of 201 out of 481 (41.79 *per cent*) stone crusher units in the nine selected Districts. Revenue from minor minerals in respect of these nine selected Districts accounted for 29 *per cent* of the total revenue from minor minerals for the State.

4.4.7 Audit Methodology

The Audit Objectives, Audit Criteria, Audit Scope and Methodology were discussed in the Entry Conference held on 7 February 2018 with the Secretary, MSME and Mines.

In addition to the Department of Mines and Geology and selected DMG field Offices, Audit also verified records obtained information from the State District Level Environment Impact Assessment Authority (SEIAA/DEIAA) and District-level Offices of the Department of Revenue and Regional Offices of the Karnataka State Pollution Control Board (KSPCB) in the selected nine districts.

Joint physical verifications (JPV) with DMG officials were conducted on random basis in respect of 260 out of 524 (49.62 *per cent*) current quarry lease records test-checked, 14 out of 61 (22.95 *per cent*) sand leases checked and 101 out of 201 (50.25 *per cent*) stone crusher units for checking compliance of conditions mentioned in the Quarry Plan, Environmental Clearance and Consent for Establishment / Operations and the effectiveness of monitoring by District Offices of DMG and various agencies such as SEIAA/DEIAA, Regional Director (Environment), MoEFCC, GoI and Regional Offices of KSPCB concerned.

The Indian Institute of Science (IISc), Bengaluru, was engaged as a Technical Consultant for the Performance Audit for estimating the volume of extraction from the quarries in Chikkaballapura Taluk of Chikkaballapura District.

Map source[90] files of the GPS co-ordinates[91] of the leases as furnished by the DMG were imposed on the topography[92] image of Chikkaballapura Taluk

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87 Bengaluru (Rural), Belagavi, Chamarajanagara, Chikkaballapura, Dakshina Kannada, Gadag, Hassan, Koppal and Vijayapura.

88 The input of State Level Environment Impact Assessment Authority was also considered in selection of the Districts. Consequently, Shivamogga selected through IDEA package, was replaced with Chamarajanagara District.

89 Stratified on risk score of number of leases for Ordinary Building Stone, Granite and Sand, m-Sand units and Stone Crushing Units.

90 Software from Garmin for viewing map, way points routes, and transferring them to or from Garmin GPS Device.

91 Unique identifier of a precise geographical location on the Earth, usually expressed in alphanumeric characters. GPS Co-ordinates are usually expressed as the combination of Latitude and Longitude.

92 Topographic map is a detailed and accurate two dimensional representation of nature and human-made features on Earth Surface.

obtained from National Remote Sensing Centre (NRSC). Areas found to be extracted other than those covered by GIS co-ordinates furnished by DMG were identified as unauthorised quarry sites. Field verification was carried out for measuring vertical angles[93] using Clinometer[94] and GPS co-ordinates for field area measurement. Thereafter, regression analysis[95] was used to estimate the area of the quarry sites, depth and the volume extracted.

The Audit findings were discussed with the Secretary, MSME and Mines, in an Exit Conference conducted on 9 November 2018 and remarks of the Government have been appropriately incorporated in the relevant paragraphs.

4.4.8 Acknowledgement

Audit acknowledges the co-operation extended by the Department of Mines and Geology in providing the necessary records and information for the conduct of this Performance Audit.

Audit also acknowledges the co-operation extended by the Centre for Ecological Sciences in arranging the consultancy from the Energy and Wetlands Research Group, Indian Institute of Science (IISc), Bengaluru.

Audit Findings

4.4.9 Preparedness of the DMG to administer the new provisions

Introduction of new provisions, relating to systematic and scientific mining and protection of environment, meant putting in place systems and processes facilitating the administration of the provisions. Preparation with respect to adequate infrastructure, human and financial resources, technical knowhow and monitoring systems was imperative to ensure adherence to the new provisions introduced in 2013.

Audit analysed the status of the preparedness of the Department in this respect and found inadequate infrastructure, non-adoption of advanced technology and gaps in co-ordination as discussed in the following paragraphs:

4.4.9.1 Absence of Comprehensive inventory of quarry sites

As per Rule 13 of the KMMC Rules, 1994, the Offices shall maintain separate registers of all Quarry leases and Quarry licences issued. An accurate inventory of all quarry sites, currently working or otherwise, is necessary to identify and assess the areas already broken-up for quarrying and to contemplate measures in respect of environmental damages which may have already taken place.

The categorisation of leases in DMG is:

- **Current** – Leases whose periods are valid. These Leases may be Working or Idle;
- **Expired** – Leases whose periods have expired and whose renewal applications are pending. On finalisation of renewal applications, such leases become Current;

93 Each of the pairs of opposite angles made by two intersecting lines.
94 An instrument used to measure the angles of elevation or angle from the ground in a right angled triangle.
95 Statistical method to examine relationship between two or more variables of interest.

- **Lapsed** – Leases whose periods have expired and for which no renewal applications have been filed;
- **Determined** – Leases which have been cancelled by the DMG for violation of lease conditions and other environmental factors; and
- **Surrendered** - Leases which have been surrendered by the lessee to the DMG, although the lease period has not expired i.e. during the live currency of the lease period.

Out of the leases mentioned above, the DMG possessed complete details only in respect of Current Leases. Details of the number of current quarry leases as on March 2017 vis-à-vis March 2014 are shown in **Table 4.3**.

Table 4.3
Details of current leases

Mineral	As of March 2014		As of March, 2017	
	In the State of Karnataka	In the test-checked Districts	In the State of Karnataka	In the test-checked Districts
Ordinary Building Stone	3,200	1,142	2,042	665
Granite	361	196	424	381

Source: Department of Mines and Geology.

In respect of leases other than current leases, the DMG did not have a comprehensive database, such as their status indicating date of lease expiry, details of renewal application filed, pendency at various stages, etc.

Due to the absence of a comprehensive database of quarries, the DMG was not in a position to monitor the quarries which were not current. Chances of such leases carrying on quarrying activities without permission cannot be ruled out in the absence of proper monitoring. Cases of continued quarrying operations in expired leases detected by Audit through joint inspection with the staff of the DMG are mentioned in paragraph 4.4.9.4 **(Table 4.4)**.

Minerals are national resources and are finite in nature. Hence, a systematic extraction of mineral resources is not only essential to conserve the finite resources but also to ensure optimum revenue to the Government. A systematic mechanism to assess whether a quarry area had been fully exploited and was fit for closure/reclamation, or, if otherwise, initiate action for re-grant of the area to other interested parties, is therefore very essential. However, DMG was not monitoring lease areas as sources of very finite resources to ensure optimum extraction. Expired/lapsed/determined/ surrendered leases were monitored only if they had arrears of revenue.

Recommendation 1: **The Government may direct the DMG to prepare a comprehensive inventory of all kinds of quarry sites in the State, on priority, as the initial step to facilitate effective implementation of the amended provisions.**

During the Exit Conference held in November 2018, the Government accepted the audit recommendation that the DMG should on priority prepare a comprehensive inventory of all quarry areas in the State. The Government stated that the DMG had initiated recording GPS co-ordinates through Differential Global Positioning System (DGPS) for better accuracy and it was ongoing for current leases at present. The Government added that the DMG was

committed to fixing DGPS boundaries for all leases including expired, lapsed and abandoned quarry sites within the next year.

4.4.9.2 Preparedness with respect to assessment of revised job responsibilities and staff requirements

The Senior Geologists/Geologists and the Assistant Engineers/Junior Engineers of the DMG are the technical staff entrusted, at the field level, with administration of all lease areas and survey and demarcation of the lease areas respectively. Audit reviewed the staff position of these cadres in DMG and noticed that the vacancy position both in respect of Senior Geologists/ Geologists and Assistant Engineers/Junior Engineers was 66 *per cent*.

The DMG did not have a separate Enforcement and Intelligence Wing. The District Task Force Committee constituted vide Government of India notification in November 2005 under the Mines and Minerals (Regulation and Development) Act was responsible to prevent illegal mining activities at the District level.

Even after introduction of the new provisions in December 2013, the DMG had neither revised the duty allocation among the staff nor reviewed the staff requirements vis-a-vis the additional job responsibilities such as approval of the Quarry Plan, implementation of QP and co-ordination with the various agencies for monitoring conditions stipulated in the EC.

4.4.9.3 Preparedness with respect to usage of modern technologies

Rule 17 of the KMMC Rules stipulates that after the grant of a quarrying lease is notified, the Competent Authority shall make arrangements for survey and demarcation of the area.

Non-adoption of modern technologies to monitor the leases

DMG had instituted [96] a mechanism of joint survey with the Revenue Department to mark the boundaries of the lease area. At the time of introduction of the new provisions, marking out the area of leases was done in a revenue sketch drawn to scale. Geographical co-ordinates were not recorded and the Department was not in a position to detect infringements, if any, in the absence of modern technologies like satellite imagery.

Current position of the mapping of leases:

Since 2011, the Department has started mapping of geographic co-ordinates of the boundaries of the leased areas, and the status of recording as of March 2018 was as follows:

- Recording of geographic co-ordinates was complete in respect of current leases; in all 585 current leases test-checked, GPS co-ordinates had been recorded;
- Geographic co-ordinates of expired leases were recorded only on approval of renewal; and

[96] Circular No. DMG/EST-A95/2007-08 dated 12 July 2007.

- Geographic co-ordinates of lapsed, surrendered and abandoned leases were not recorded in any of the Districts.

Audit opines that with the help of satellite images, this geographic data could be a powerful tool for monitoring the leases and identification of unauthorised quarrying activities. Merely mapping of the GPS co-ordinates without use of GIS[97] will not enable detection of infringements by lease holders, unauthorised quarry areas, etc.

4.4.9.4 Spot inspections of quarries conducted by Audit

a. Cases of extractions in expired leases and outside the legal boundaries

In the absence of a comprehensive inventory, frequent monitoring and usage of modern technologies to detect illegal activities including extension of boundaries beyond leased area, the chances of incidences of unauthorised quarrying are high. During spot inspections with the staff of DMG, Audit noticed 85 cases of unauthorised quarrying of Ordinary Building Stone (OBS), sand, clay, murram and Granite; 52 of them in expired leases and 33 outside the lease area, which had not been detected by the Department. Details are given in **Table 4.4**.

Table 4.4
Illegal quarrying in expired leases/outside leased area detected during joint spot inspections

Sl. No.	District	Taluks	No. of cases of illegal quarrying	Mineral	Area of illegal extraction in square meters	Measured quantity of mineral extracted in cum
A.	**Quarrying in expired leases undetected by DMG**					
1.	Dakshina Kannada	Bantwal, Mangalore	4	OBS	3,884.00	12,484.00
2.	Vijayapura	B.Bagewadi, Vijayapura	5	OBS	2,751.00	7,529.00
3.	Belagavi	Chikkodi, Savadatti, Belagavi, Gokak	9	OBS	2,575.00	7,025.00
4.	Bengaluru (Rural)	Devanahalli, Hoskote	13	OBS	9,783.18	22,228.74
			3	Granite	170.10	567.27
5.	Chamarajanagara	Chamarajanagara, Gundlupete	18	OBS	10,703.00	50,777.50
Total (A)			**49**	**OBS**	**29,696.18**	**1,00,044.24**
			3	**Granite**	**170.10**	**567.27**
B.	**Quarrying outside the leased area by the lessees of DMG**					
1.	Dakshina Kannada	Bantwal, Mangaluru	3	OBS	400.00	1,157.98
2.	Vijayapura	B.Bagewadi, Vijayapura	3	OBS	484.00	1,044.00
3.	Belagavi	Chikkodi, Gokak, Savadatti	5	OBS	540.00	9,315.00
4.	Bengaluru (Rural)	Dodaballapura, Hoskote	5	OBS	1,746.00	19,508.00
		Nelamangala	1	Murram	138.00	552.00
5.	Chamarajanagara	Chamarajanagara, Gundlupete	3	Granite	2,351.00	25,530.00
			13	OBS	40,368.90	3,69,257.00
Total (B)			**29**	**OBS**	**43,538.90**	**4,00,281.98**
			3	**Granite**	**2,351.00**	**25,530.00**
			1	**Murram**	**138.00**	**552.00**

Source: Joint Inspection Reports with staff of DMG.

[97] GIS – Geographic Information System – is the usage of GPS data through a computer software to convert the GPS data into useful information.

b. Cases of illegal quarrying sites found in JPV

In addition to the above, Audit found 109 illegal quarrying sites spread over 1,07,418.70 square meters (10.74 ha) while traveling for the spot inspections of the current and expired quarry sites. These illegal quarrying sites were not detected by the Department except those in Gundlupete Taluk of Chamarajanagara District. Details in this respect are given in **Table 4.5**.

Table 4.5
Illegal quarrying in areas with no lease/license from DMG

Sl. No.	District	Taluks	Mineral	No. of cases of illegal quarrying	Area of illegal extraction in square meters	Measured quantity of mineral extracted in cum
1.	Hassan	Arsikere, Channarayapatna, Hassan	OBS	10	11,502.70	65,042.27
		Sakleshpura	Sand	2	1,060.00	212.00
		Hassan, Sakleshpura, Arsikere, Channarayapatna	Murram/Clay	9	3,808.50	12,216.40
2.	Dakshina Kannada	Mangaluru	Sand	11	--(*)	1,190.00
			OBS	2	4,225.00	47,150.00
			Granite	1	140.00	700.00
			Laterite	9	9,417.00	25,972.00
			Clay	1	832.00	6,656.00
3.	Vijayapura	B. Bagewadi	Murram	1	360.00	360.00
		B. Bagewadi, Vijayapura	OBS	4	2,070.00	4,704.00
4.	Belagavi	Hukkeri, Gokak, Savadatti, Belagavi	OBS	21	19,666.50	49,093.00
		Hukkeri, Chikkodi, Khanapura	Murram	6	---(*)	1,237.50
5.	Bengaluru (Rural)	Dodaballapura, Hoskote, Nelamangala, Devanahalli	OBS	8	28,840.00	96,013.00
6.	Chamarajanagara	Chamarajanagara Gundlupete	OBS	23	25,497.00	1,56,296.75
		Kollegala	Sand	1	---	70.00
Total			**OBS**	**68**	**1,07,418.70**	**4,18,299.02**
			Sand	**14**		**1472.00**
			Murram/Clay	**17**		**20,469.90**
			Granite	**1**		**700.00**
			Laterite	**9**		**25,972.00**

Source: Joint Inspection Reports with staff of DMG.
(*) – Heaps of sand/murram found at unauthorised sites were measured during spot inspections.

Quarrying detected in expired lease in Ainapura village in Vijayapura Taluk.

Quarrying at illegal site in Yereborekaval village, Hassan Taluk.

The royalty and the value[98] of the mineral in respect of all the above cases worked out to ₹ 83.55 crore. Besides, penalty of ₹ 108.41 crore was also leviable.

In respect of Chamarajanagara District, it was intimated by the DMG that for OBS, the extraction outside leased area had been surveyed (February 2018) and notices issued (July 2018). Details of quantity for which notices were already issued vis-à-vis the quantity estimated during spot inspection (October 2018) with Audit were not furnished (December 2018).

Working of these and similar quarries needs to be investigated by DMG and the value of the mineral extracted in all these cases needs to be recovered from the persons concerned, besides initiating action for illegal mining.

Such incidents of illegal quarrying bring to light the shortcomings in the monitoring activities of the Department. If Audit could, through joint physical

[98] Computed at the PWD Schedule of Rates.

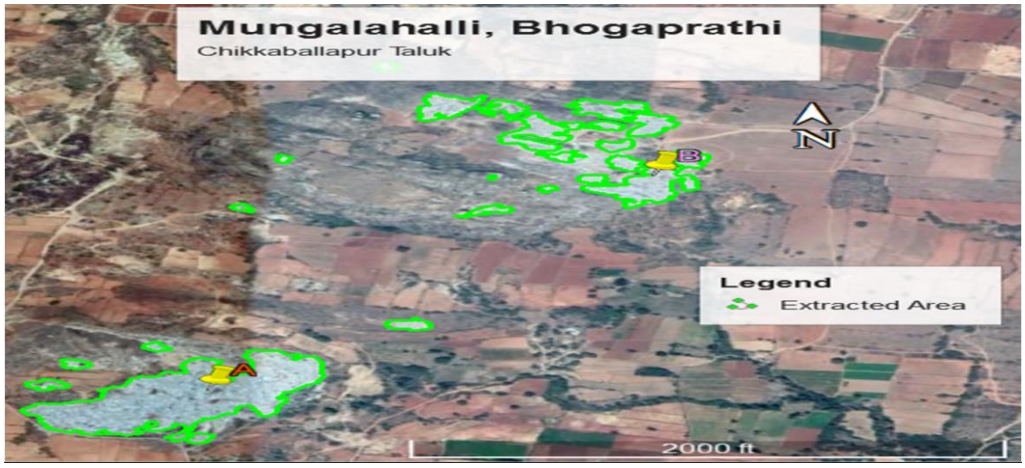
inspections with the staff of the DMG, identify 194 incidents of un-authorised quarrying in 21 Taluks of six Districts over 29 days of inspection, it is certain that the magnitude of the illegal quarrying activities will be much higher and requires immediate attention from the Departments concerned.

However, as mentioned in the paragraph the DMG did not have the requisite manpower. With the leases spread over different Taluks of a District and with staff of only 1-3 Geologists at the District level, it is extremely difficult to have periodical monitoring to prevent illegal quarrying activities. This can be possible only through the use of advanced technology, such as satellite images.

4.4.9.5 Unauthorised quarrying detected by Audit through usage of geospatial data and satellite images

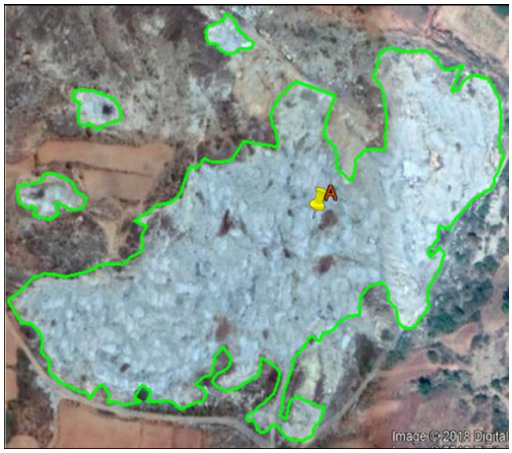
(a) Quarrying at non-licenced locations

Audit, through the Technical Consultant (IISc, Bengaluru) engaged for the Performance Audit, used satellite images to study the quarrying activities in Chikkaballapura Taluk. The IISc obtained the image of the topography of Chikkaballapura Taluk from the National Remote Sensing Centre (NRSC), Hyderabad. The Office of the Senior Geologist, Chikkaballapura (Office) furnished the GPS co-ordinates of the 292 quarry leases in Chikkaballapura and the same were given to IISc for imposing the GPS co-ordinates over the topography of Chikkaballapura Taluk. Areas other than those covered by the GPS co-ordinates furnished by the Office were identified as unauthorised quarry sites as these areas were not granted as leases by DMG. Such unauthorised quarrying sites were identified in 532 locations over 11.45 lakh square meters (115 hectares) and the volume extracted was estimated as 11.12 crore[99] MT.



Satellite image of illegal quarrying sites at Mungalahalli village, Chikkaballapura Taluk.

[99] The potential revenue impact as royalty ranged between ₹ 166.80 crore and ₹ 667.20 crore, estimated based on the rates of ₹ 15 per MT from 2003 to 2007, ₹ 30 per MT from 2007 to 2014 and ₹ 60 per MT from 2014 till date.



(A) 8.15 acres illegally quarried.

(B) 1.44 acres illegally quarried.

During the period 2008-18, the Office had detected illegal mining activities in only 63 locations out of which FIRs were filed in 114 cases during the period 2016-18. The Office had not recorded the GPS co-ordinates of the illegal areas identified and hence Audit could not match the same against the 532 locations identified through satellite imagery. Transportation of the stone quarried in these illegal locations would have entailed movement of 65.40 lakh vehicles of 17 MT capacity, whereas the number of vehicles caught on road without a Mineral Despatch Permit[100] and on whom penalty was levied by the Office during 2007-08 to 2016-17 was only 250 and penalty collected was ₹ 42.92 lakh.

(b) Quarrying beyond the lease boundaries

Further, the satellite images have also shown quarrying in the areas adjacent to quarry leases. The quarrying beyond the lease area extended over 8.90 lakh square meters (89 ha) in all the 146 locations identified in which 101 leases were granted and the quantity extracted was estimated as 27.68 crore[101] MT. The Office did not have a database of illegal extraction beyond lease boundaries noticed during the annual inspections and penalty levied. The deviations noticed and the penalty levied were recorded in the individual files. The coordinates of the encroached area were not recorded and the area was not periodically inspected to detect furtherance of illegal quarrying.

The use of geo-spatial images showed that illegal mining in the Taluk was rampant and the enforcement activities undertaken by the Department remained largely ineffective.

Recommendation 2: **The Government may direct the DMG to adopt advanced technology such as satellite imagery for surveillance activities and for detection of unauthorised quarrying and extractions beyond lease boundaries.**

[100] Mineral Despatch Permit is a permit generated in electronic form for a vehicle to transport minerals on payment of royalty.

[101] The potential revenue impact as royalty ranged between ₹ 415.20 crore and ₹ 1,660.80 crore, estimated based on the rates of ₹ 15 per MT from 2003 to 2007, ₹ 30 per MT from 2007 to 2014 and ₹ 60 per MT from 2014 till date.

During the Exit Conference (November 2018), the Government agreed to the recommendation and directed the DMG to adopt mine surveillance system which uses satellite images for detecting illegal quarrying activities.

4.4.9.6. Preparedness with respect to monitoring of transportation of minerals

As per the KMMC Rules, 1994, it is mandatory for all vehicles to transport the minerals with a valid MDP issued by the DMG. Any vehicle caught on road without the MDP is liable to be seized, and penalty at five times the royalty is to be levied. Authorised Officers of the member Departments of the District Task Force Committee are empowered to inspect vehicles transporting minerals and seize those without valid MDP.

In 2011, the DMG introduced the e-permit system through a software called Integrated Lease Management System (ILMS). The lessee is required to enter his production details into the ILMS and apply online for a Mineral Despatch Release Order (MDRO). On approval of the MDRO, the lessee can generate online MDPs (also called trip sheets) for each individual vehicle carrying the mineral.

A critical analysis of the monitoring on illegal transportation based on the spot inspections conducted by Audit:

Transportation of the illegally quarried minerals mentioned in the paragraph 4.4.9.4 implies movement of large number of vehicles and consequent damage to roads. For example, in respect of the four illegal quarry locations noticed in Hassan District (Sl.No.1 in Table 4.5), 9,947[102] vehicles would have plied for transporting 65,042 cum of Ordinary Building Stone without MDP. As against 9,947 vehicles, the number of vehicles caught on road without permits transporting mineral other than sand during 2015-16 to 2017-18 in the entire Hassan District was only 469[103]. This indicated that transportation of illegally quarried minerals remained largely undetected and the monitoring by all the Departments of the District Task Force Committee, was inadequate.

During spot inspection along with DMG staff of a stone crusher unit in Hassan District, four gate passes for 57.05 MT of stone were shown to Audit based on which material had been received from a lease holder, without corresponding MDPs. This indicated that illegal transportation of minerals without MDP was resorted to by the lease holders.

During the Exit Conference (November 2018), the Government opined that adoption of advanced technology for assessment of the volume of mineral extracted from the lease areas, and mine surveillance system to detect illegal quarrying will slowly reduce and finally eliminate the necessity of stringent physical monitoring of vehicles transporting minerals. Adoption of advanced technology for both these activities was envisaged and would be implemented in a phased manner.

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[102] 65,042 cum x 2.6 (specific gravity of stone) = 1,69,109 MT. At 17 MT per vehicle, 9,947 vehicles are required to transport 1,69,109 MT of stone.

[103] Details of enforcement activities, i.e. vehicles without MDP and penalty levied for earlier periods though called for (August 2018) is not furnished (December 2018) by the Office of the Senior Geologist, Hassan.

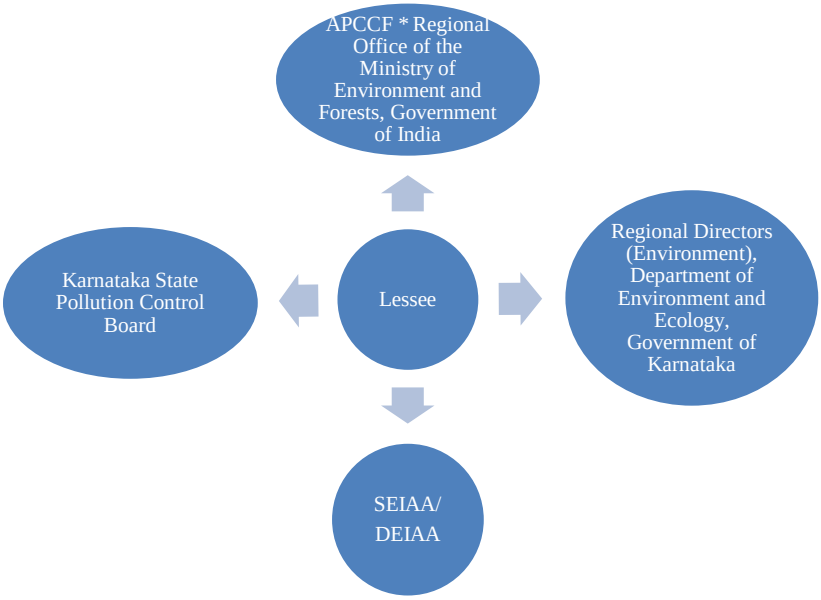
Though adoption of advanced technology may take care of the activities related to production, control on transportation cannot be done away with till actual implementation and also in view of interstate movement of minerals.

4.4.9.7 Absence of co-ordination between DMG and related agencies

As per the Circular issued in July 2009, by MoEFCC, Government of India, under the EIA Notification 2006, the Regional Office, MoEFCC, GoI in the State is responsible for monitoring the Environment Clearance Conditions. However, ECs for minor mineral quarry leases, categorised under B2[104] as per EIA Notification, are granted by SEIAA or DEIAA. As per EIA notification, the lessees are to submit half yearly compliance report on fulfilment of EC conditions.

In the ECs issued by SEIAA/DEIAA, the lease holders were directed to submit half yearly compliance reports to multiple agencies including the SEIAA/DEIAA, Regional Office, MoEFCC, GoI, Regional Director (Environment), Department of Ecology and Environment, GoK, Central Pollution Control Board and the State Pollution Control Board. The ECs also stipulated periodic returns on ambient air quality, ground water, health check-up of workers in quarries, etc.

In the ECs issued by SEIAA/DEIAA, the following agencies were empowered to visit and monitor the conditions under EC:



(*) APCCF – Additional Principal Chief Conservator of Forests.

[104] Under the EIA Notification, all projects and activities are broadly categorised in to two categories - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and natural and man-made resources. Further, 'B' Category projects were classified as B1 and B2. The projects categorised as B1 will require Environment Impact Assessment Report for appraisal and to undergo public consultation process (as applicable). Projects categorised as B2 will be appraised based on the application in Form-1 accompanied with the Pre-Feasibility Report environment management plan and any other documents.

A clear demarcation of duties and responsibilities between these Agencies was a pre-requisite to streamline the monitoring procedure and to fix responsibility on the Departments concerned. However, the Government had not issued clear instructions resulting in too many monitoring agencies. Audit verified the roles of these different Agencies involved in the process of monitoring compliance to the EC conditions and observed as below:

- **Non-recording of baseline parameters**-Neither the DMG nor the monitoring agencies had instituted a mechanism for compilation of the baseline parameters like measurement of pits in the existing leases, ambient air quality parameters, etc. Effective monitoring of future working and the quality of environment was not possible without baseline parameters.
- **Non-monitoring of submission of half-yearly compliance reports**-Multiple agencies were involved in the monitoring activities; however, there were no clear directions to the lessee to whom the six monthly compliance report was to be submitted. The DMG did not have information about submission of the compliance reports.

Though Audit requested for copies of the required six-monthly compliance reports to be filed by lessees, none of the monitoring agencies, viz. SEIAA, KSPCB, APCCF, Regional Office, MoEFCC, GoI or the Regional Director (Environment), GoK, furnished the same.

The Regional Director (Environment), Department of Environment and Ecology, GoK, Mangaluru stated that his Office was not aware of ECs granted and hence was not monitoring EC conditions of quarry leases. The reply was not acceptable as copies of all ECs granted to the quarry lease holders coming under the jurisdiction of Mangaluru Circle were marked to the Regional Director (Environment) which clearly mentioned the Office as a monitoring agency.

The Regional Offices of the Karnataka State Pollution Control Board in the test-checked Districts informed that the Board only monitored conditions stipulated in the Consent for Establishment/Consent for Operations granted to stone crushers and not EC conditions of quarry leases. The KSPCB had by a Circular[105] clarified to its Regional Offices that the quarry leases were not in the ambit of monitoring by KSPCB. However, Rule 8-X of the KMMC (Amendment) Rules, 2013, clearly stipulates that KSPCB should monitor the air and noise pollution in respect of the leases. Audit noticed that DMG had not co-ordinated with KSPCB to ensure that such arrangements were instituted to monitor the leases.

SEIAA intimated in December 2018 that none of the quarry leases had submitted the compliance reports to SEIAA. However, non-submission of the compliance reports was not reported to DMG.

Thus, it is clear that roles and responsibilities were not clearly segregated which resulted in lack of accountability of the lessee to any of the monitoring agencies.

[105] Circular No.6416 dated 12 February 2014.

Therefore, it can be concluded that the overall preparedness of DMG for administering the new provisions of the KMMC Rules, 1994, was inadequate. The Department had not made any active efforts or taken any new steps to ensure that the new provisions were enforced. Segregation of duties among the different Agencies involved was absent which ultimately resulted in none of the Agencies taking the responsibility.

Recommendation 3: Roles and responsibilities of the monitoring agencies should be delineated and submission of compliance reports by lessees should be only to one specified agency.

During the Exit Conference (November 2018), the Government informed that there were instances of cancellation of leases for violation of EC norms. However, on Audit pointing out that there was no system for periodic receipt of information on compliance to EC conditions from the monitoring agencies, the Government directed the DMG to examine and institute a system for co-ordination with the related agencies.

4.4.10 Submission of Quarry Plan and Environmental Clearance

After the Amendment of KMMC Rules during 2013, quarrying of minor minerals is not permitted without a Quarry Plan (QP) and Environment Clearance (EC). A QP shows the entire workings of quarrying operations with accurate details of mineral deposits, spots of extraction, nature of extraction, impact of quarrying on the related environment, etc. EC is granted on the basis of the Environment Management Plan prepared and submitted by the lease holder or the prospective lessee.

As per Rule 8-I of the KMMC Rules, the holder of an existing quarry lease/licence/working permission/sand lease, shall submit a Quarry Plan within six months from the date of commencement of the KMMC (Amendment) Rules, 2013. Similarly, as per Rule 8-Q, the Environment Management Plan was to be submitted within one year from the date of commencement of the KMMC (Amendment) Rules, 2013, based on which the Environment Clearance was given. In respect of leases sanctioned/renewed after the KMMC (Amendment) Rules, 2013, the lease deed is executed only after submission of QP and EC.

Audit test-checked the compliance in submission of the QP and EC for the leases which were sanctioned prior to the KMMC (Amendment) Rules and were current as of March 2017[106] in the nine Districts. Details are given in **Table 4.6**.

[106] Some of the leases which existed at the time of introduction of the provisions in December 2013 expired during 2014-17 and would have to go through the process of submission of QP/EC along with other requirements for renewal. Hence, leases which were granted before December 2013 and whose validity existed as of March 2017 were checked in Audit.

Table 4.6
Details of submission of QP/EC by current leases existing on the date of introduction of new provisions

Sl. No.	Mineral	Number of leases test-checked	Number of leases which submitted QP beyond due dates	Period of delay	Number of leases which submitted EC (All belated)	Period of delay
1.	Ordinary Building Stone	160	105	1 to 34 months	93	2 to 30 months
2.	Granite	80	22	1 to 26 months	28	1 to 31 months

Majority of the current lessees got the QPs approved during 2015 and 2016. Seventy-five *per cent* (155 cases) of the test-checked lessees had submitted their applications for grant of EC between January 2015 and April 2016.

4.4.10.1 Extraction of mineral without QP/EC

Eighty-six leases in six [107] Districts (out of nine Districts) extracted 18,13,220.66 MT of stone and 12,782.38 cum of granite during the period April 2014 to March 2017 either without submitting QP/EC (in 20 cases) or before approval of QP/EC (in 66 cases).

Audit observed that the field Offices had insisted on submission of QP/EC for approving MDPs for transportation of mineral. This has expedited the submission of QP/EC, after 2015-16. However, four out of the 20 cases mentioned above had continued operations without QP and EC and had despatched ordinary building stone (OBS) without permits even in 2016-17.

In general, DMG was successful in ensuring that current leases complied with the submission of QP/EC. However, there was no mechanism to ensure that leases which had not submitted QP/EC did not continue operations.

4.4.11 Approval of Quarry Plan

Process of approval

- The authority to approve the Quarry Plan for ordinary building stone and sand mining was with the District-level Offices.
- Approval for Quarry Plans of Granite was given by the Director, Mines and Geology (till July 2015) which was delegated to the District-level Offices with effect from July 2015.
- As per Rule 8-I of the KMMC Rules, the competent authority shall approve the Quarry Plan submitted by the leaseholder within a period of sixty days from the date of receipt of the Quarry Plan.

Out of 1,107 current leases, Audit scrutinised 436 Quarry Plans (39.38 *per cent*) approved during 2014-2018 (Ordinary Building Stone -281, Granite - 98 and Sand- 57) in the nine District Offices selected for the Audit.

Audit noticed that all the QPs submitted were complete as per mandated requirements. 377 QPs (86.47 *per cent* of the audited sample) were approved within the period of 60 days while 59 QPs (13.53 *per cent* of the audited sample) were approved after delays ranging from 61 to 420 days.

[107] Bengaluru (Rural), Belagavi, Chamarajanagara, Dakshina Kannada, Hassan and Vijayapura.

The following areas warranted improvement in the approval process.

4.4.11.1 Assessment of the mineral reserve and Recovery Factor[108] in Quarry Plan and inconsistencies in fixation of annual targets

Quarry Plan is prepared by a Recognised Qualified Person[109] (RQP) hired by the lessee. Each Quarry Plan indicates details of the mineral reserve in the lease area and the Recovery Factor. There was no mechanism in the DMG to independently evaluate the mineral reserves or the Recovery Factor before the grant of lease. In addition, the annual targets proposed by the lessees are dependent on these factors and hence the DMG was also unable to verify the correctness of the annual targets of production.

The DMG had not formulated parameters for fixing annual targets. Audit opines that targets could be based on (a) mineral reserve, (b) extent of area under exploitation in the five-year period, (c) machine and men capacity employed, (d) demand and supply, etc. In the absence of prescription of fixed parameters and acceptance of targets proposed by the lessees themselves, there were instances of fixation of higher annual targets for smaller lease extents with lesser mineral reserve and lower annual targets for larger lease extents with higher mineral reserve. Illustrative cases in this respect are detailed in ***Appendix -XI.***

As per United Nations Framework Classification (UNFC) Guidelines, mineral reserves in an area are classified as Proved[110], Probable.[111] and Possible[112]. Proved and Probable reserves could be considered in the initial scheme of mining for fixing annual targets of extraction as the existence of such reserves and recoverability are reasonably assured.

The lessees had considered all the three reserves, i.e. Proved, Probable and Possible, for working out their annual targets in certain cases, while in other cases, annual targets were fixed based on Proved and Probable reserves only. Such inconsistencies were not corrected by the DMG while approving the QPs. Fixation of annual targets is a key area in the quarrying activity as the scientific working out of the same is based on the actual potential of a quarry.

Recommendation 4: The Government may direct the DMG to formulate criteria for fixing annual targets considering essential factors such as the mineable reserves, extent of area exploited, machine and personnel to be employed and other factors, if any.

During the Exit Conference (November 2018), DMG informed that the guidelines for approval of QP for all minor minerals was under finalisation. The

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108 Recovery Factor is the key parameter for estimating extraction of saleable mineral and generation of waste rocks. Estimation of waste rock is a pre-requisite to plan its storage, disposal and protection of environment.

109 Recognised Qualified Person is licensed by the Indian Bureau of Mines and shall possess either a Mining Degree or Post Graduation in Geology with two years working experience or a Diploma in mining with five years' work experience.

110 **Proved reserves** denote the amount of mineral that can be recovered from the deposits with a reasonable level of certainty.

111 **Probable reserves** denote estimated quantity of mineral that can reasonably be expected to exist and recoverable with presently available technology at an economically viable cost.

112 **Possible reserves** are an estimate of the amount of mineral that may be available for extraction in an area.

Government directed the DMG to finalise the Standard Operating Procedure (SOP) for approval of Quarry Plan soon.

4.4.11.2 Non-detection of fictitious buffer zones

The new provisions envisaged a buffer zone of 7.5 meters around the lease area as one of the conditions in the QP/EC. Allowance of a buffer zone meant reduction in the net mineable area of the lease and resultant reduction in geological reserves since mineral in the buffer zone cannot be mined. As this was a new provision, the compliance to this condition was difficult for the leases which had commenced operations before the new provisions.

Audit noticed that the DMG had not surveyed the existing leases and recorded feasibility of buffer zones in the already worked lease areas, nor technically evaluated lesser buffer zone allowance based on ground conditions. Audit test-checked 504 QPs out of 1,107 leases (45.53 *per cent*) which included 280 leases which had commenced operations before the new provisions came into effect and noticed that all the QPs indicated maintenance of buffer zones along the boundary of the lease. The same was approved by the Offices concerned.

On spot inspection in 260 of them, it was found that 244 (93.85 *per cent* of the audited sample) did not maintain buffer zones. Spot inspections revealed that extraction in such cases has been carried out in the intended buffer zone. As per the Quarry Plans, the mineral reserve under the buffer zone of 59 of these leases worked out to 84,71,247 MT. Royalty on the mineral quantity stated to be in the buffer zone in the QP and not actually available in the field would amount to ₹ 50.83 crore, not to mention the environmental impacts that would occur on account of non-maintenance of the buffer zone.

Regular inspection of the leases after approval of the QPs would have ensured the maintenance of buffer zones provided in the QPs. As this was not done, this has not only resulted in continuing of quarrying operations without the safeguards envisaged in the new provisions but raised serious concerns on the quantity of mineral reserve available in the lease area and quantity extracted. Audit points out that spot inspection by the DMG before approval of QP would have prevented this omission and fixed accountability for wrong disclosure of compliance and mineral reserves. Hence, Audit concludes that the Quarry Plans were approved without verification of ground realities.

Recommendation 5: The Government may direct the DMG to inspect all quarries to ensure maintenance of buffer zones and mineral reserves have been extracted from the buffer zone.

During the Exit Conference (November 2018), the Government stated that the volume extraction would be assessed after completion of marking of boundaries of lease areas through DGPS. Audit reiterates that fictitious buffer zones were not only a concern in accounting for the mineral extracted but posed a much higher risk as the environment protection envisaged in the new provisions is non-existent. The ECs granted based on approved Quarry Plans with fictitious buffer zones are to be reviewed in the light of environment protection measures.

4.4.12 Non-collection and failure to attribute purpose of Performance Guarantee

Annual targets of production are fixed as per the QP submitted by the lessee and the lessee cannot extract mineral in excess of this during that year.

Rule 36(5) of the KMMC Rules, 1994, introduced with effect from 12 August 2016, stipulated that the grantee of quarry lease or licence shall pay in advance one-tenth of the royalty amount (one-fourth from 12 August 2016 to 17 July 2017) of the highest permitted annual production quantity mentioned in the EC validity period as performance guarantee in the form of Bank Guarantee, Fixed Deposit Receipts, Demand Draft or in any other manner as may be specified by the Government from time to time. Audit noticed that Rule 36(5) did not specify if the intention of the Performance Guarantee was to use it as security for royalty arrears, if any or enforce achievement of targets, by forfeiture in case of non-achievement.

In respect of leases obtained in auction, Rule 31-J(i) of the KMMC Rules 1994, provides for 10 *per cent* of royalty to be deposited as Performance Guarantee. Rule 31-J(iv) of the said Rules stipulates that such lessees are bound to produce and despatch fifty *per cent* of the permitted annual production quantity. If they fail to achieve the same, they shall be liable to pay royalty and premium for fifty *per cent* of the permitted annual production. Similar provision has not been prescribed for all existing leases granted without auction.

Audit observed that in five[113] Districts (out of nine Districts), DMG Offices had not collected the Performance Guarantee amount of ₹ 7.68 crore in 196 out of 585 (33.50 *per cent*) test-checked cases (out of the total of 1,107 leases). In cases where collected, the field Offices had retained the Bank Guarantees as such without linking to the achievement of targets in the absence of the intent of the Rule being communicated clearly.

An analysis of the production details for 2016-17 in the nine selected Districts revealed that 297 out of 876 current leases were idle during 2016-17. Further, Audit analysis of the achievement of production targets revealed that majority of the leases under-achieved QP production commitments as discussed in paragraph 4.4.13.

Recommendation 6: The Government may clarify the intent of the Performance Guarantee amount and consider fixing the minimum limits of production targets to be achieved by all leases.

During the Exit Conference (November 2018), the Government directed DMG to examine the issues pointed out and initiate further necessary action.

4.4.13 Non-adherence to the Annual Target Fixed in the QP

Audit analysis of the achievement of annual targets in respect of the 524 test-checked leases out of 1,046 leases (50.09 *per cent*) vis-à-vis the targets approved in the QP/EC revealed the following:

- During the period of 2013-14 to 2016-17, 21 leases had extracted mineral in excess of the annual production targets fixed in the approved

[113] Bengaluru (Rural), Chamarajanagara, Hassan, Gadag and Vijayapura.

Quarry Plans during the period. As against the total annual target of 12.40 lakh MT, 19 lessees of building stone had extracted 31.23 lakh MT and two granite lessees had extracted 15,416.11 cum as against the target of 12,300 cum (Details are given in ***Appendix-XII)***. The DMG had merely estimated the extraction according to the annual field measurements and collected royalty. No action was initiated for violation of production of mineral in excess of the QP targets.

- Further, during 2015-16 and 2016-17 the DMG had detected 3,15,496 MT of building stone/murram extracted outside the leased area in eight leases in Bengaluru (Rural), Belagavi, Dakshina Kannada, Hassan and Gadag Districts. The production figures of five out of these eight leases in the lease area for the corresponding years was 6,97,718 MT with the remaining three leases having nil production in the lease area. The Offices (other than Hassan and Gadag) concerned had levied penalty of ₹ 6.43 crore. However, ₹ 84.00 lakh due towards royalty and value of mineral was not levied. In Gadag and Hassan Districts, the amount of ₹ 7.33 crore towards royalty, value of mineral and penalty was not demanded. Illegal extraction outside the lease area due to non-adherence to lease boundaries coupled with reporting of non-achievement of approved QP targets should be treated as an offence and stringent punitive actions initiated.
- Besides, on an analysis of the achievement of the production targets fixed in the QPs for the year 2016-17, Audit noticed that 450 leases (85.88 *per cent* of 524 leases) had not achieved even 50 *per cent* of their targets.

The trend of under-production against the targets fixed when read with the illegal extraction outside lease area and transportation of minerals without MDPs indicated systemic deficiencies in accounting the production of minerals.

4.4.14 Absence of infrastructure to assess production accurately by DMG

Audit observed that the production quantity was estimated by computing the volume of the pit based on the manual measurement of the excavated pit area and height. Bengaluru (Rural), Belagavi and Vijayapura Districts had not recorded the pit measurements in any of the cases up to the assessment for the year 2016-17. The manual measurement method was not only fraught with measurement errors but also was not definitive of the area measured since no GIS co-ordinates of the area measured were recorded.

Even after introduction of the new provisions of the QP, the DMG had not initiated more technical and accurate pit measurement mechanisms like Total Station Survey or Drone Survey, etc. In the absence of base pit measurements and subsequent measurements being recorded, Audit could not evaluate how the DMG ensured implementation of the QP in terms of areas of extraction and quantity extracted.

During Audit, the field Offices intimated orally that marking of lease area boundaries through DGPS was commenced from June 2018 and that further action would be initiated after completion of the DGPS marking of lease areas.

Audit noticed prima-facie deficiencies in assessment of the quantity of building stone/granite extracted in nine out of 524 (1.72 *per cent*) test-checked cases (out of the total of 1,046 leases) as given below:

- In respect of two leases for extraction of building stone in Dakshina Kannada District, the quantity of building stone extracted was 24,149 MTs as per MDP obtained and also assessment finalised by the Office. However, during spot inspection of Audit along with the office staff the quantity of stone extracted from these two leases was calculated based on the measurement of the pit recorded using GPS device for area and tape for measuring the depth of the pit and come to 1,72,528 MT. The royalty on the differential quantity worked out to ₹ 89.03 lakh.
- In Gadag District, in respect of seven leases checked, as against 25,239 MT of wastage generation estimated in the QPs, wastage of 1,33,512 MT was allowed in the annual assessment for the years 2015-16 and 2016-17. This was more than the total 1,04,422 MT of waste generation projected in the QPs for the five year period of these seven leases. Reasons for the same were not recorded. The higher wastage indicates either the deficiency of approval of the QPs or the claim of more wastage than actually generated. In the former case, the higher wastage obtained in actual field operations would require better planning of waste dump to avoid damage to surrounding lands and necessitates revision of QP/EC already granted. In the latter case, excess claim of wastage indicates loss of royalty revenue on the excess wastage allowed amounting to ₹ 64.96 lakh at the rate of royalty applicable for OBS. The Office had however allowed the wastage without probing the cause and initiating action either for levy of royalty or revision of QP/EC as applicable.

4.4.15 Estimation of production in the quarries by Audit through IISc, Bengaluru

Assessment of the volume of stone extracted from the lease area has a direct bearing on the revenue realisation of the State. The royalty collection on mining minerals accounted for 47 *per cent* of the non-tax receipts of the State in 2016-17.

As stated in paragraph 4.4.14, the DMG had not adopted advanced technology for assessment of the volume of stone extracted, Audit engaged the Technical Consultant (IISc, Bengaluru) to scientifically assess the volume of stone extracted from the lease areas in Chikkaballapura Taluk of Chikkaballapura District. The methodology adopted by the Consultant is detailed in ***Appendix XIII***. The volume extraction of stone was done using current satellite images of lease areas, the topography contours of the Taluk and field visits in sample cases to corroborate the findings from the satellite images. The resultant difference between the volume of extraction assessed manually by the Department and that estimated with modern technology was very high and reiterates the immediate necessity for DMG to adopt modern technology like satellite images or total station survey or drone survey or a combination of the modern technologies to assess the volume correctly.

The volume of extraction in respect of OBS arrived at by the Consultant and the Office is given in **Table 4.7**.

Table 4.7
Estimation of volume of OBS extracted in quarry leases in Chikkaballapura Taluk

Sl. No	Period	Number of leases	Volume estimated by DMG in crore MT	Volume estimated by the Consultant in crore MT
1.	Leases granted prior to 2013	173	0.96	38.42
2.	Leases granted after December 2013	10	0.11	1.39

In respect of the 10 leases, which were granted during 2015-16, the volume estimation by DMG was only eight *per cent* of the quantity assessed by the Consultant. Audit noticed that in respect of five out of these 10 leases, the DGPS survey undertaken by the DMG was completed. However, the volumetric quantification was not furnished by the DMG though requested by Audit (December 2018).

The above indicates that the system of assessment of production followed by DMG is inadequate. If the quantification issues in respect of even new leases (fresh lands where prior extraction had not taken place) cannot be addressed, DMG needs to evaluate the complexity of implementation of the QP prescriptions and their monitoring in respect of already existing leases.

In one Taluk of the State, the difference in assessment of the volume of stone worked out to 38.74 crore[114] MT. If considered for all the minor minerals for all the leases across the State, the loss of revenue would be a huge figure. The Government needs to take immediate action to stop this revenue leakage.

During the Exit Conference (November 2018), the Government intimated that after fixation of lease boundaries using DGPS technology, assessment of volume of stone extracted would be carried out using total station survey and/or drone survey to assess production volumes scientifically and accurately.

4.4.16 Conditions under the Quarry Plan

As per Rule 8 of the KMMC Rules, the Quarry Plan should specifically indicate the following:

- Exact areas of extraction of minerals during each of the five years for which the Scheme of Quarrying is approved;
- Quarries are to be worked in Benches; the height of the bench is to be increased up to 7.5 metres, [115] in case the ore-body consists of comparatively hard and compact rock;
- Men and Machine to be employed;
- Employment of Qualified Person to oversee quarrying operations;

[114] The potential revenue impact as royalty ranged between ₹ 638.70 crore and ₹ 2,324.40 crore, estimated based on the rates of ₹ 15 per MT from 2003 to 2007, ₹ 30 per MT from 2007 to 2014 and ₹ 60 per MT from 2014 till date.

[115] The Metalliferous Mining Regulations, 1961, (Regulation 106 (2) (a)) prescribes safety standards for working of open cast mines which is the working manner of minor mineral extraction.

- Exact location of storage of extracted mineral, over burden and waste rocks.

4.4.16.1 Deficiencies in monitoring compliance under the Quarry Plan

Audit verified the monitoring mechanism in DMG and found the following:

- **No self-reporting framework or inspections for verification:** DMG had neither instituted a mechanism of self-reporting by the lessees nor an inspection and verification process for monitoring compliance to the conditions of the Quarry Plan. DMG had not revised the Annual Inspection Reports of the Quarries to include verification of the Quarry Plan conditions.
- **Non-verification of extraction of mineral as per approved Quarry Plan:** DMG neither marked the exact area for extraction of mineral at the beginning of the year nor verified if extraction was done in the exact area/extent of depth specified in the QP. The mineral extracted was estimated on the available pit measurements without verifying the specific prescriptions in the Quarry Plan.
- **Non-working of the benches:** Audit test-check of 129 quarry plan approvals (out of 248 Quarry Leases) for ordinary building stone accorded in 2014-15 and 2015-16 in Belagavi and Bengaluru (Rural) Districts revealed that 30 (23.25 *per cent* of the audited sample), did not prescribe formation of benches, and 18 proposed bench heights ranging from nine to 27 meters as against the maximum allowable height of 7.5 meters. DMG had approved these Quarry Plans without evaluating the safety aspects of the absence of bench working/increased benches proposed.
- **Non-verification of machinery and manpower:** DMG had not collected details of machines employed at site vis-à-vis those indicated in the Quarry Plans. Employment of more machinery and manpower would translate to more production and hence needed to be monitored by DMG. Though the KMMC (Amendment) Rules, 2013, mandated employment of Qualified Person by leases to oversee the implementation of the provisions relating to systematic and scientific quarrying, DMG did not have details of Qualified Persons employed by the Quarries.
- **Non-verification of waste disposal:** Monitoring of waste disposal is important for protection of the surrounding lands from damage. However, DMG had not collected volumetric details of overburden removed and waste rock generated. During spot inspections of leases with the staff of DMG, it was noticed that in 97 *per cent* of the leases visited, the waste rock was not dumped in the location indicated in the Quarry Plan.
- **Unauthorised sub-contracts in respect of quarry leases:** Rule 19-A of the KMMC Rules, 1994, states that the lessee shall not enter into any agreement, arrangement or understanding with any person whereby lessee is directly or indirectly financed to a substantial extent by such

person and quarrying operation and other activities connected therewith are substantially controlled by such person.

Audit noticed that in respect of four quarry leases in Bengaluru Rural and Vijayapura Districts, the quarry lease holders had entered into Agreements/Memorandum of Understanding/Lease Agreements with other parties during the years 2013-14 to 2015-16, wherein the entire quarry activities were handed over to the other parties. Lease holders had given permission to the other parties to operate the quarries and dispose/sell the building stone extracted. As per the agreements, the other party would bear all the expenses for conducting quarry operations, shall pay royalty/permit fees/taxes, etc. and had paid consideration of ₹ 1.5 crore in one case and agreed to pay a consideration ranging from ₹ 20 to ₹ 25 per MT extracted to the lease holders in the remaining cases. However, no permission from the DMG was obtained. It was noticed that in one case in Bengaluru (Rural), the other party had extracted OBS in excess of the QP/EC targets. A quantity of 60,000 MT, 1,42,000 MT and 1,00,000 MT had been extracted for the years 2015-16 to 2017-18 respectively against an annual target of only 30,015 MT. DMG had only collected royalty on the excess production and neither initiated any action for excess production nor detected the sub-contracts and cancelled the same.

Thus, the conditions stipulated for systematic and scientific quarrying remained only prescriptions without actually being implemented in the quarrying operations.

4.4.16.2 Non-compliance to the conditions of QP

As per Rule 8-K (2), if the quarrying operations are not carried out in accordance with the approved Quarry Plan, the Deputy Director/Senior Geologist concerned may pass an order for suspension of all or any of the operations and permit continuance of only such operations as may be necessary to restore the conditions of the quarry area as envisaged in the Quarry Plan. Audit conducted JPV of 260 out of 524 (49.62 *per cent*) test-checked current leases (out of 1,046 leases) to verify the compliance to the conditions of the Quarry Plan. The outcome/results of JPV is depicted in **Table 4.8**.

Table 4.8
Verification of QP conditions in spot inspection of lease areas along with staff of DMG

Sl. No.	Conditions as per approved QP	Percentage of non-compliance
1.	Erection of Boundary pillar	30
2.	Indication of Latitude-Longitude Co-ordinates on boundary pillars	72
3.	Working of quarries in Benches	98
4.	Storage of Waste Rocks in designated areas	97
5.	Allowance of Buffer Zone around the lease area	94
6.	Storage of Overburden in designated area	96
7.	Construction of Retention Wall along waste rock dump	100
8.	Stagnation of water in quarry areas	42

From the above, it can be seen that other than erecting boundary pillars and marking geographic co-ordinates on the boundary pillars, none of the major prescriptions towards systematic and scientific mining in QPs were complied with. Thus, the QP remained just a document and compliance to the execution of the same was deficient, indicating failure in implementation of scientific and systematic mining.

Audit points out that the field Offices had neither recorded the non-compliances nor initiated action for remedy.

Recommendation 7: **The Government may direct DMG to clearly define criteria for monitoring compliance during annual inspections to conditions stipulated in the Quarry Plan and institute a periodic self-reporting mechanism.**

During the Exit Conference (November 2018), the Government directed DMG to revise the format of the annual inspection report to verify all conditions stipulated in the QP for systematic and scientific quarrying.

4.4.17 Approval of Environmental Clearance

Process of approval

- The lessee shall prepare an Environment Management Plan and submit it to SEIAA/DEIAA for approval along with application in Form 1 and approved Quarry Plan.
- DEIAA[116] at the District was empowered to grant ECs for quarrying activities up to 5 hectares.
- SEIAA was competent to grant EC for area exceeding 5 hectares.

Audit analysis of the approval of EC revealed that the time taken to grant EC ranged from 27 to 433 days.

Audit verified the process of monitoring compliance to the conditions stipulated under of Environmental Clearance and noticed the following:

4.4.17.1 Compliance to EC Conditions

EC is issued to lessees subject to general and specific conditions. The conditions stipulated in EC include maintenance of buffer zone, storage of waste in designated areas, submission of periodical returns on health of workers, air and noise pollution levels, ground water levels, etc. The compliance to the conditions mentioned ibid are discussed in paragraphs 4.4.9.7 and 4.4.16.2.

Audit conducted JPV of 260 out of 524 (49.62 *per cent*) current leases test-checked (out of 1,046 leases) to check the implementation of other EC conditions by the lessees. The outcome of JPV is depicted in **Table 4.9**.

[116] Formed at the District level vide Notification dated February 2016.

Table 4.9
JPV for checking compliance to EC conditions

Sl. No.	Conditions as per approved EC	Percentage of non-compliance
1.	Display of Conditions at Quarry site	100
2.	Maintenance of Link Road from lease to main road and black topped	97
3.	Periodic Water Sprinkling on approach roads to suppress dust	75
4.	Afforestation Programme	83
5.	Provision of safety gear to labourers working in quarry areas	Could not be assessed since most of the quarries were non-functional on the day of JPV.

From the Table 4.9, it can be seen that the level of non-compliance was high for all the conditions.

Even though all the lease holders had in their EMP committed to Corporate Social Responsibility funding of activities beneficial to villages in and around the quarry, neither DMG nor SEIAA/DEIAA obtained any information on the activities as per commitment.

As already discussed, compliance reporting to many authorities and absence of co-ordination between the designated authorities had resulted in non-implementation of EC conditions at the ground level. This defeated the very purpose of introduction of the new provisions.

4.4.17.2 Inconsistencies between EC and QP

While granting EC, permission for the quantity of mineral to be extracted annually is fixed after considering all factors affecting the Environment. Annual production target in the approved Quarry Plan is one of the factors considered while fixing the annual production targets for EC.

In five out of 19 sand leases (26.31 *per cent*) in Gadag District, the depth of quarrying was reduced to 1.5 mtr in the EC from 3 mtr approved in the QP. Consequently, the quantity of sand to be extracted was reduced to 3.92 lakh MT in the EC from 6.36 lakh MT approved in QP. However, in the EC issued, the reduction in quantity of sand to be quarried was not mentioned. This resulted in non-intimation of reduction of quantity of 2.44 lakh MT to the lessees. Further, in 12 sand leases in Hassan and Dakshina Kannada Districts, the depth of quarrying was increased in EC from that of the approved QP without any change in the quantity to be extracted. This was not possible as the increase in depth would naturally increase the quantity of mineral to be extracted.

Reasons for such discrepancies though called for (May 2018), were not furnished (December 2018). Alterations in depth of quarrying/annual targets, if not clearly intimated to the lessee, provide an opportunity for unauthorised excessive quarrying.

As the lessees submit a copy of the EC granted by the Authority concerned to the DMG Office, it is the responsibility of the DMG to verify the annual targets approved in the EC vis-à-vis those in the approved Quarry Plan and initiate remedial action in cases of discrepancy and/or officially record the reduction/increase in annual targets of the lessees leaving no room for ambiguity.

4.4.18 Functioning of sand leases

As per the Government of India Policy for Sustainable Sand Mining notified in 2016, the rate of replenishment of minor mineral is a factor to be considered for grant of sand leases. In order to facilitate monitoring of sand leases, various conditions are stipulated on sand lease holders such as installation of CCTV cameras, usage of GPRS fitted vehicles, etc. Audit verified the grant and monitoring of sand leases in the test-checked Districts and found the following:

4.4.18.1 Identification of sand blocks

- In the identification of sand blocks for auction, the District Sand Monitoring Committees had not factored the replenishment rate in arriving at the reserves available. Only in Belagavi District, the rate of replenishment was worked out on the directive of SEIAA to approve modified Quarry Plan. The other Districts had identified sand blocks below five ha and consequently ECs were granted by the respective DEIAA without insisting for replenishment rate.
- As per GoI Notification dated 8 September 2011, Temporary Permits for sand removal were to be given to traditional coastal communities. There was no mechanism to identify traditional coastal communities. A review of all the 427 Temporary Permits granted during 2016-17 revealed that 182 Temporary Permits (42.62 *per cent*) had been given to persons engaging in sand lifting for the first time. There was no proof to establish that they belonged to traditional sand lifters' families.

4.4.18.2 Monitoring of sand leases by the DMG

- **Installation of surveillance system:** As per the EC conditions, sand leases of more than five ha were to install CCTV in the lease area. However, DMG did not prescribe submission of the CCTV footage to it for test-check of the footage to detect irregularities, if any. This made the surveillance system ineffective. A fallout of this is illustrated below:

> The ECs issued for sand mining specifically prohibit usage of suction pumps to drain water from the sand lease areas. During the joint physical inspection of sand lease areas, it was noticed that suction pumps were fitted in various places in five out of 10 leases. The violation of stipulation to not use suction pumps could have been detected if the CCTV footage had been monitored.

- **Payment of Average Additional Periodic Payment:** Rule 31-ZA (3) of the KMMC Rules, 1994, states that the licence holder for extraction of sand in patta land shall pay, in addition to royalty, an amount which shall be equal to the Average Additional Periodic Payment (AAPP)[117]. In Gadag District, all four licence holders for sand extraction in patta

[117] Average Additional Periodic Payment (AAPP) is the amount payable by the holders of quarry lease or licence granted through auction within the Taluk, if such average is available for the Taluk, or within the District if such average is not available for the Taluk, or within the neighbouring Districts if such average is not available for the District, and if such average is not available within the neighbouring District, such Average Additional Periodic Payment shall be deemed to be 50 *per cent* of royalty.

land had extracted and despatched 1,35,902 MT of sand. However, an amount of ₹ 12.33 crore payable towards AAPP by sand lease holders of auction was not demanded.

- **Extraction beyond specified depth:** The EC/QP specifies the depth upto which the sand extraction could be carried out. However, as sand replenishment happens with the flow of water in the rivers, it is difficult to monitor exact depths up to which sand has been extracted. The DMG did not periodically conduct total station survey of the sand lease areas especially during the pre-monsoon and post-monsoon periods to monitor the approximate depths of sand extraction. This can lead to extraction beyond the allowed depths as illustrated below:

In Gadag District, during spot inspection (March 2018) of three[118] sand licence areas in patta lands, Audit observed that sand had been extracted upto a depth of 5.8, 7.5 and 10 metres slope from the ground level as against 3.75, 3 and 1.5 metres depth respectively approved in the EC. Even after allowance of top soil and over burden of about 1 to 3 metres as specified in the QP, the licensees had extracted sand beyond the specified depth. However, the permits generated by them were well within their annual targets. Audit called for the actual quantity of sand extracted with reference to the area of extraction and the depth noted during spot inspection. The same is awaited (December 2018).

In Dakshina Kannada District, though the Technical Reports and EC granted by SEIAA specified the depth upto which sand could be removed from the sand bars, the same was not intimated to the Temporary Permit holders.

4.4.19 Impact of the new provisions on safeguards for protection of environment

The introduction of the Prior Environment Clearance for minor mineral quarrying was to mitigate the impacts of extensive quarrying on the surrounding environment. The new provisions envisaged adherence to all mitigation measures proposed by the lessee in the Environment Management Plan and conditions incorporated in the QP/EC. The measures for environment protection include those to be implemented by the Department/related agencies and individually by the lessees in their specific areas. The measures are as below:

1. Preparation of District Survey Report to enable grant of EC to leases – By DEIAA.
2. Cumulative impact assessment and cluster association – By EIAA/DMG.
3. Mine Closure Activities – By lessees and monitoring by DMG.
4. Monitoring of stone crushers for air and noise pollution – By DMG/DSPCB.
5. Periodical submission of reports by lessees on health of workforce, ground water levels, air and noise pollution - By lessees.
6. Maintenance of Buffer zone, storage of waste in designated areas, safety equipment to labourers, etc. – By lessees and monitoring by DMG.

[118] QL 44, 48 and 55.

Audit reviewed the implementation of the safety measures to be implemented by the lease holders and found that there was no maintenance of envisaged buffer zone (Paragraph 4.4.11.2) storage of waste in designated area (Paragraph 4.4.16.1) and monitoring submission of the requisite returns from the lessees (Paragraph 4.4.9.7). The non-compliance to QP/EC conditions and non-verification of the same by DMG has already been discussed in paragraphs 4.4.16.2 and 4.4.17.1. Other major measures envisaged to be carried out by the Department and issues involved in them are discussed in the succeeding paragraphs.

4.4.19.1 In-adequate information in District Survey Report (DSR)

As per Notification issued in January 2016 by the MoEFCC, a District Survey Report (DSR) should be prepared separately for each minor mineral by the DEIAA taking into cognizance land use patterns, sources of water, agricultural activity, industrial developments and mining/quarrying activities in the District. The District Survey Report is the basis for applying for Environmental Clearance, preparation of assessment reports and grant of Environmental Clearance. DSR is to be updated every five years.

Out of the nine test-checked Districts, the District Survey Report was prepared in three Districts, viz. Belagavi, Chikkaballapura and Gadag. The remaining Districts did not furnish the DSR though called for. In the absence of the District Survey Report, it was not clear as to how decisions on EC were considered.

As per GoI Notification of January 2016, the DSR was to contain an introduction of the District along with an overview of the mining activity and the list of the mining leases in the District, details of royalty or revenue received in the last three years, details of production of minor minerals in the last three years, process of deposition of sediments in the rivers of the Districts, land utilization pattern viz. Forest, Agriculture, Horticulture, Mining in the District. Physiography of the District, month-wise rainfall, Geology and mineral wealth, etc.

Scrutiny of the contents of the three DSRs revealed that the general information as stipulated in the DSR format was compiled except that relating to mineral wealth. Potential mining/quarry areas, areas already under mining and their impacts were not collated. Besides, Audit found the following deficiencies on the DSRs.

- The Report merely compiled the statistics of the mining/quarrying leases (current and working) and extraction of minerals over a three years period and royalty recovered;
- The land use patterns were generic and did not indicate change in land use around quarry areas;
- Ground water levels compiled were based on general test-wells of the Ground Water Department, with no specific analysis of ground water levels in and around quarry areas;
- Potential areas of quarry sites were not identified and environmental factors specific in those areas were not analysed;

- Areas already under exploitation through grant of leases vis-à-vis total potential of the mineral resource in each Taluk were not assessed;
- DSR did not indicate the annual rate of replenishment which was a crucial factor to be considered for sand quarrying as per the Sustainable Sand Quarrying Policy of the Government of India; and
- Sensitive areas like eco-sensitive zones, heritage zones, critically polluted zones, forest buffer zones, etc. were not marked out.

Hence, DSR, which was meant to serve the purpose of facilitating EC was not prepared in the majority of the Districts even after two years and in the Districts where it was prepared, it did not serve the purpose due to non-compilation of the relevant details.

Recommendation 8: **The Government may direct the EIAA/DMG to commission and undertake a detailed environment impact assessment, specifically in and around the quarry areas, to be used as key parameters for granting EC.**

During the Exit Conference (November 2018), the Government accepted the Audit observations and stated that suitable instructions would be furnished to the concerned.

4.4.19.2 Non-formation of Cluster Associations and absence of Cumulative Impact Assessment

The major environmental and social management challenges are all the result of cumulative impacts from a large number of activities. Though they are, for the most part, individually insignificant, they collectively have significant impacts, mostly adverse. Keeping this in view, cumulative impact assessment and cluster associations were introduced as part of the new amendments.

Cumulative impact assessment:

As per the notification issued in January 2016 by MoEFCC, as the mining of minor minerals is mostly in clusters, the Environment Management Plan or Environment Impact Assessment (if needed) shall be prepared by the State or State nominated agency for the entire cluster in order to capture all the possible externalities. Environmental Clearance shall be applied for and issued to the individual leases who can use the common Environment Management Plan for application for EC. The cluster Environment Management Plan shall be updated as per need keeping in view any significant change. It shall be ensured that the mitigative measures emanating from the common Environment Management Plan are fully reflected as environment clearance conditions in the environment clearance of individual leases in that cluster.

As per paragraph 9 of Appendix I (Form I) of the EIA Notification 2006, the Project Proponent has to provide information regarding the factors which should be considered (such as, consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality. As per paragraph 9.4, the Project Proponent has to provide the cumulative effects due to proximity to other existing or planned projects with similar effects.

Illustrative cases of concentration of quarries in specific villages are given in **Table 4.10**.

Table 4.10
Details of quarries in specific villages

Sl. No.	District	Taluk	Village	Number of Quarry Leases
1.	Bangalore (Rural)	Devenahalli	Tylagere	13
2.		Nelamangala	Maakenahalli	11
3.	Belagavi	Gokak	Dhupadal	15
4.	Vijayapura	Basavana Bagewadi	Kolhar	08
5.	Chikkaballapura	Chikkaballapura	Kanive Narayanapura	16
6.	Dakshina Kannada	Mangaluru	Aikala	14
7.	Gadag	Gadag	Gadag	20
8.	Koppal	Koppal	Hooligere	19

Source: Register of Leases and Demand, Collection and Balance Register of DMG Offices.

Cluster Association:

Rule 15 of the KMMC Rules, 1994, stipulates the minimum area of a quarry lease. If the lease areas are less than the stipulated extent, Rule 15-A read with 8-Q and 8-R provide for formation of clusters of lease areas. Such leases shall form a cluster association and submit a collective Environment Management Plan.

Illustrative cases of quarries in a single survey number are as shown in **Table 4.11**.

Table 4.11
Details of quarries in the same survey number

Sl.No.	District	Taluk/Village	Survey number	Number of Quarry Leases
1.	Chikkaballapura	Chikkaballapura/ Kanive Narayanapura	43	16
2.		Janalakunte	11	09
3.	Dakshina Kannada	Mangaluru/Aikala	41/1	08
4.	Gadag	Gadag/Sheetalahari	58/a	05
5.		Gadag/Chinchali	67	04
6.	Koppal	Koppal/Hussainpur	4	24
7.	Belagavi	Gokak/Dhupadal	73/1A/1	13

Source: Register of Leases and Demand, Collection and Balance Register of DMG Offices.

Audit noticed that:

- The DMG had not declared Cluster Zones[119] based on the GoI criteria of 500 meters gap between the boundaries for combined Environment Management Plan.

[119] In respect of leases where the area fell below the minimum requirement for a quarry lease, the Department had facilitated the working of such quarries by declaring them under Cluster Zones. Such quarries were with contiguous boundaries or were within the criteria of 500 meters fixed by the GoI.

- As per EIA Notification, quarry leases (categorised as B2) do not require an Environment Impact Assessment. In the test-checked cases, the Quarry lease holders had not furnished specific details of other quarries near their location in their Form I. ECs were issued by SEIAA/DEIAA without obtaining the information from the DMG and without conducting a cumulative impact assessment. Grant of EC was considered case-wise and no cumulative impact effects were considered by SEIAA/DEIAA before approval of EC;
- There was no system to measure noise, air and particulate dust levels around a cluster of quarries when all quarries/stone crushers in the cluster are working. Hence, environmental parameters required for granting clearance was not available.

Audit observed that assessment of impact from an individual quarry is not an appropriate method of estimating adverse effects on environment in such cases where the quarries are very close to each other. Quarries as single units may not impact the environment significantly. However, the cumulative effect will definitely have serious adverse impact on the surroundings. Hence, such cases warranted an environmental assessment on a cluster or cumulative scale rather than on an individual scale. Besides, the DMG's failure to notify clusters resulted in grant of individual ECs which required case-wise monitoring. A common EMP would have been easier to implement and monitor.

Recommendation 9: The Government may direct the DMG to compile information on all quarry leases within a pre-determined radius of the quarry in order to facilitate preparation of a cumulative environment impact assessment of the quarrying activities in a specific area.

During the Exit Conference (November 2018), the Government stated that environment issues around quarry leases were being considered in recent times and the cumulative impact assessment would be taken up in future in consultation with the Department of Environment.

4.4.19.3 Non-implementation of Progressive Mine Closure

As per Rule 8 H, every quarry shall have a Mine Closure Plan which shall be of two types, viz. Progressive Mine Closure Plan and Final Mine Closure Plan. Progressive Mine Closure is periodically carried out from the start of the mining cycle and the Final Mine Closure activities are carried out at the end of the cycle. The lessee shall submit a Final Mine Closure Plan for approval one year prior to the proposed closure of the quarry.

Environment Management Plans of the quarry leases test-checked had indicated that the Progressive Mine Closure was not practical due to non-exhaustion of mineral deposits, which was accepted and approved by the DMG. This pushed all the closure activities to the end of the life-cycle of the mine. In such a scenario, the final mine closure would involve substantial expenditure for fencing, backfilling and vegetation activities. Absence of progressive mine closure is, in effect a failure to plan the Final Mine Closure activities right at the beginning of the lease cycle with periodic review of the estimated expenditure, where the risk of default at the end of business cycle of the lessee cannot be ruled out.

4.4.19.4 Inadequacy of Financial Assurance for the Final Mine Closure

As per Rule 8-L of the KMMC Rules, every quarrying lease holder shall furnish Financial Assurance in the form of Fixed Deposit Receipts from any Scheduled Bank. The amount so collected is an assurance for carrying out protective, reclamation and rehabilitation measures stipulated in the Mine Closure Plan[120] submitted by the lease holder. The rate fixed was ₹ 10,000 per acre for specified minor minerals[121] and ₹ 5000 per acre for non-specified minor minerals. The parameters considered while fixing rates of Financial Assurance were not on record.

Audit tried to assess the adequacy of the Financial Assurance collected and compared the funds collected and the actual minimum expenditure required for the activities planned in the Final Mine Closure Plan, which is detailed below:

Estimation of expenditure on fencing:

Expenditure estimated by the DMG- As per the records of the Office of the Senior Geologist, Hassan, an expenditure of ₹ 2.32 crore was estimated for construction of rubble wall around eight abandoned quarries with a circumference of 3,503 mtr, which works out to ₹ 6,662 per mtr. Hence, the expenditure required for rubble wall around a quarry works out to **₹ 13.32 lakh**[122] **per acre.**
Minimum expenditure estimated- Even excluding the expenditure of ₹ 13.32 lakh per acre incurred by DMG, a minimum expenditure on barbed wire fencing around the quarry area at the rates in the Schedule of Rates of the Forest Department amounts to ₹ **18,000 per acre**.
Amount collected as Financial Assurance- The amount of ₹ 5,000 per acre compounded quarterly at 7.5 *per cent* interest submitted by the lessees would amount to **₹ 22,000 per acre** over a twenty-year lease period.

Audit points out the comparison made above was based on just one of the items of expenditure involved in Final Mine Closure but the actual planned activities include other items, like back filling of the pits, vegetation to restore the landscape, etc. Audit estimates that waste of about 60 *per cent* generated in the granite leases would be available for the backfilling while the ordinary stone leases which have a waste generation of 5 *per cent* would need extra expenses for backfilling.

In the absence of a clear estimation of the probable expenditure on all the activities involved in mine closure, and provision for the same, the Financial Assurance prescribed at present is highly insufficient and will become a liability for the Government to provide for.

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120 **Mine closure planning** involves planning effectively for the after-mining landscape– all activities required before, during, and after the operating life of a mine that are needed to produce an acceptable landscape economically.

121 **Specified minor mineral** means minor minerals specified by the State Government from time to time.

122 Considering 230 mtr. as the average perimeter of a quarry of one acre, the calculation works out to ₹ 6,662 per mtr.*230 mtr .=₹ 13.32 lakh.

4.4.19.5 Non-collection of Financial Assurance

Bengaluru (Rural), Belagavi, Chamarajanagar, Dakshina Kannada and Koppal Districts had not collected the Financial Assurance from any of the leases. The non-collection of Financial Assurance amounted to ₹ 1.57 crore for an extent of about 2,472 acres in respect of 556 out of the 1,107 current leases (50.22 *per cent*) in the seven[123] Districts.

Recommendation 10: **The Government may institute a mechanism to prepare the final mine closure plan at the beginning of the lease itself with periodic review of the estimated expenditure for the same.**

4.4.19.6 Protection of already abandoned quarry sites

The concept of Progressive Mine Closure and Final Mine Closure was introduced in the amendment provisions of 2013 along with the provision of providing Financial Assurance by the lessees. Hence, the Government did not have any financial security for reclamation and safety measures in respect of leases sanctioned earlier to 2013 and not renewed thereafter/lapsed/ abandoned, etc. Safety measures and reclamation works in determined, lapsed, surrendered and expired leases which have not been renewed are the responsibility of the DMG.

Due to lack of a database, the Department could not assess the safety, reclamation and other related measures to be undertaken in respect of determined, lapsed, surrendered and expired leases. Further, DMG had not formulated an Action Plan for identification and prioritisation of such leases for reclamation works. No budget estimates for the same were envisaged. This was even after the Hon'ble High Court had directed DMG (June 2015) to ensure fencing of abandoned quarry pits for safety of human life and cattle life.

Audit noticed that three out of the nine Districts had identified abandoned quarry pits for protective works. In Mangaluru, the District Task Force Committee had identified 406 pits for fencing and released a sum of ₹ 22 lakh in June 2015 to the Taluk Panchayats concerned for fencing/filling works. However, the District Task Force Committee had not followed up the completion of the works and could not furnish any information in this regard (May 2018). Gadag District had identified 21 abandoned quarries and released an amount of ₹ 2 crore, out of the estimated ₹ 2.90 crore to M/s KRIDL[124] in March 2016 for construction of rubble wall around the quarry pits. However, even as of March 2017, the work had not commenced and further status of the work as of June 2018 was not available on record. In Hassan, the District Office had forwarded proposals for ₹ 2.32 crore for construction of rubble wall around eight abandoned quarry pits. However, there was no follow-up for release of funds and implementation of the protective measures.

Identification and monitoring of such leases were necessary in implementing protective measures impacting environment and to avoid accidents. However, this was not done, which left the sites unguarded and open for unscientific and unauthorised quarrying activities. Unauthorised usage of such sites has been

[123] Belagavi, Bengaluru Rural, Chamarajanagara, Dakshina Kannada, Hassan, Gadag and Vijayapura.

[124] Karnataka Rural Infrastructure Development Limited.

found out by Audit during joint inspection with the Department. Details of such fresh workings in 52 expired leases are detailed under paragraph 4.4.9.4.

4.4.19.7 Non-compliance to norms prescribed for Stone Crushers

At the District level, the Stone Crusher Licensing Authority headed by the Deputy Commissioner (DC) concerned and representatives of both the DMG and KSPCB along with the Revenue and the Police Departments is the regulatory Authority. The Karnataka Stone Crushers Act and Rules prescribe registration of the stone crushers with DMG.

On obtaining permission from DMG (Form B), the licensee has to obtain Consent for Establishment (CFE) and Consent for Operations (CFO) from the Karnataka State Pollution Control Board. Initially, CFO is granted for a period of one year and on grant of CFO, the Stone Crusher Licensing Authority issues permission in Form C which is valid for a period of five years for the stone crusher. Thereafter, the stone crusher unit has to obtain the CFO for a period co-terminus with the validity of Form C license. Both Form C and CFO are renewable at periodic intervals. Further, the stone crushers have to operate by obtaining permits from ILMS for input of stone boulders and output of crushed stone though no royalty is payable.

- Audit noticed that in seven[125] Districts (out of nine Districts), 47 out of 201 (23.38 *per cent* of the audited sample) stone crushers test-checked (out of the total of 481) operated either without Form C or a valid CFO. In 26 cases, though CFO had expired between June 2015 and September 2017, the stone crushers continued their operations and DMG granted Mineral Dispatch Permits to these stone crusher units. Similarly, KSPCB had during their inspections of the Stone Crusher units, detected 21 units which were functioning without Form C. However, KSPCB had not intimated these details to DMG for necessary action. Thus, both DMG and KSPCB though being part of the Stone Crusher Licensing Authority, worked in isolation without a system for periodic exchange of information on the licenses (Form C) granted and validity of CFOs.
- 63 out of 201 (31.34 *per cent* of the audited sample) test-checked stone crushers (out of the total of 481) were not registered in ILMS and were not obtaining permits.
- Besides, though the Karnataka Stone Crushers Act and Rules require maintenance of accounts by stone crushers, no inspection/audit of such accounts by DMG is envisaged.

Hence, lack of coordination between KSPCB and DMG led to stone crushers operating without CFOs. Further, due to non-registration of stone crushers in ILMS, DMG failed to ensure that the royalty was paid on the inputs to stone crushers. Hence, the opportunity to identify illegally quarried mineral at the final point before consumption was not effectively utilised.

[125] Bengaluru (Rural), Belagavi, Chamarajanagara, Dakshina Kannada, Gadag, Hassan and Vijayapura.

Recommendation 11: DMG may conduct annual inspection/audit of the accounts of the Stone Crushers to ensure royalty suffered inputs to the stone crushers.

4.4.19.8 Non-measuring of vibrations due to blasting

As per the Explosives Act, lease holders are to obtain permission of Deputy Commissioners for use of explosives for use in quarries and to undertake prescribed safeguards. The effects of usage of explosives are ground vibrations, fly rock and air blast/noise. Peak particle velocity[126] (PPV) is considered as the criterion for evaluating blast vibrations in terms of their potential to cause damage. The Directorate General of Mines Safety had in its Circular[127] prescribed the permissible PPV limits so as to not cause damage to surrounding structures.

Quarry Plans clearly specified the amount of explosives to be used for blasting in the quarry areas and stated that all precautions would be taken for controlled blasting. The ECs were issued based on the blasting information provided by individual quarry leases. However, no schedule of blasting activity quarry-wise was prescribed in cluster areas so as to minimise ground vibrations. Field Offices of the DMG did not have the required equipment to measure the blast vibrations periodically for monitoring purposes. Consequently, DMG could not assess the blast vibrations and effectively address the complaints received regarding damages caused due to blasting.

In Gadag District, there were complaints on two lessees for damage of property from neighbouring land owners and one court case filed against one lessee. Tahsildar, Arsikere Taluk, Hassan District had also forwarded complaints of cracks to residences and loss to agricultural crop to Senior Geologist, Hassan for further follow-up.

4.4.19.9 Non-obtaining of NOC for blasting

Audit observed that even though grant/renewal of lease was under the supervision of the District Task Force Committee headed by the Deputy Commissioner concerned, there was no co-ordination between the DMG and DC Office to ensure that all leases obtained NOC for blasting from the Office of the DC. Cross-verification of 250 leases (out of the 1,046 leases) by Audit with the records of the DCs concerned in seven[128] Districts revealed that 209 leases (83.60 *per cent* of the audited sample) had not obtained permission for blasting activities in the quarry sites. As per the Quarry Plans approved in the sample cases, one kg of explosive was required for extraction of six tonnes of building stone on an average. Hence, a total of 21,27,257 kgs of explosives would have been used for extracting 127.64 lakh MT of building stone during 2014-15 to 2016-17 in the test-checked Districts. However, the Offices of the Deputy Commissioners concerned, DMG, the monitoring agencies and

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126 The speed or velocity of a particle during displacement caused by explosives is called the particle velocity, having units metres/second. PPV is the greatest instantaneous particle velocity during a given time interval.

127 DGMS (Tech) (S&T) Circular No.7 of 1997.

128 Bengaluru (Rural), Belagavi, Chamarajanagara, Dakshina Kannada, Gadag, Hassan and Vijayapura.

Director, Mines Safety had no information on procurement and usage of explosives in the stone quarry leases.

4.4.20 Conclusion

The provisions relating to systematic and scientific mining and protection of environment were designed to ensure optimum extraction of minerals with adequate safeguards against critically damaging the environment. However, it was seen that DMG did not possess an exhaustive inventory of all kinds of quarries. Consequently, DMG could not ensure optimum extraction of minerals from the already identified sources or initiate environment protection measures in the quarry sites that had exhausted all mineral reserves. Though illegal quarrying was prevalent, DMG had not made use of modern technologies like satellite imagery to detect the illegalities. Roles and responsibilities of the different Agencies remained ambiguous and the related areas of compliance monitoring remained weak from the beginning.

There were deficiencies in the approval of Quarry Plans and Environmental Clearances. Fixing of annual targets of extraction was found unsystematic and basic document (District Survey Report) for Environmental Clearance was either not prepared or was incomplete in all the test-checked Districts. There was no system in place for the monitoring of the systematic and scientific extraction committed to in the Quarry Plans or for the protection of environment which was committed in the Environment Management Plan. Hence, non-compliance to the conditions envisaged under Quarry Plan and Environmental Clearance remained high.

Progressive Mine Closure was not being done and planning a Final Mine Closure just one year prior to proposed closure entailed a high risk of default. Besides the Financial Assurance prescribed in this respect was insufficient and could lead to the Government incurring the liability of protective and reclamation expenditure to close the mined out areas.

Penal action for violation of prescriptions in respect of Quarry Plan/Mine Closure/Environment Clearance remained largely non-executable as prescriptions like progressive closure were non-operational and information on non-compliance with DMG remained unavailable due to non-coordination among different Agencies. Hence, deterrent influence of penal action envisaged on lease holders for violation of laid down conditions remained ineffective.

Analysis of Audit, with the help of satellite imagery through the Technical Consultant, in Chikkaballapura Taluk revealed instances of extensive illegal quarrying. Besides, analysis of production in quarries on the same lines, revealed inadequacy of DMG in assessing production in the quarries which varied from the actual production estimated by 38.74 crore MT. As accurate assessment of production and prevention of illegal quarrying assumes paramount importance in augmenting revenue, the deficiency in the techniques employed by DMG has a direct bearing on the revenue of the State.

The Government may consider the recommendations made in the Performance Audit and define benchmarks over the years to evaluate the implementation and monitoring capabilities of DMG.

Revenue Implication of ₹ 223.25 crore brought out in this Report was a result of the spot inspections and test-check conducted by Audit in 585 out of 1,107 quarry leases/licenses (52.84 *per cent*) in the selected nine Districts. The State has a total of 2,466 quarry leases and the Department has to look into similar issues in all other leases in the State. Further, the existence of 532 illegal quarrying locations and huge difference of 38.74 crore MT in assessment of production in respect of 183 leases in Chikkaballapura Taluk only emphasises the need for DMG to aggressively adopt advanced technology for mine surveillance activities and production assessment to plug the leakage of revenue across the State. DMG has to assess all the other relevant Taluks of the State to identify such issues of illegal quarry sites and disproportionate extractions.

4.5 Non/Short-levy of penalty for unauthorised transportation of minor minerals

Rule 42(1) of the Karnataka Minor Mineral Concession (KMMC) Rules, 1994, requires that no person shall transport, or cause to be transported, any minor mineral, except under or in accordance with a computerised Mineral Despatch Permit (MDP) generated in electronic form (*e-permit or m-permit*). Additionally, as per Part-V, Clause-4 of the quarrying lease deed, the lease holder will be liable for penalty at five times of the royalty for transporting a minor mineral without obtaining MDP.

During test-check of records in the two[129] Deputy Director (DD) and four[130] Senior Geologist (SG) Offices of the Department of Mines and Geology (out of 19 Offices) between October 2017 and January 2018, Audit found that 0.62 crore metric tonnes (MT) of building stone out of 1.21 crore MT (51.24 *per cent*) were transported without obtaining MDPs during the years from 2013-14 to 2016-17. Penalty at five times of the royalty amounting to ₹ 145.43 crore was to have been levied on such transportation as per provisions under the lease agreement. However, Audit noticed that one[131] Office had not levied any penalty while the other five[132] Offices had levied penalty of ₹ 14.42 crore only during the period from 2013-14 to 2016-17. This resulted in non/short-levy of penalty amounting to ₹ 131.01 crore.

Audit had pointed out similar lapses on earlier occasions[133] too and the Department had consistently maintained that the provisions of Rule 42(1) of KMMC Rules, 1994, were not applicable to non-specified minor minerals. Audit had not accepted the contention and pointed out that the issue of MDP was a regulatory measure which was essential to control the transportation of minerals. Eventually, the Director of Mines and Geology acceded to the view of Audit and issued a Circular[134] (May 2016) emphasising the levy of penalty at five times of the royalty for transportation of minerals without MDP.

When these cases were brought to the notice of the Director, Mines and Geology (October 2017 and January 2018), it was again stated by the Department (March 2018) that the provisions of Rule 42 (1) of KMMC Rules, as well as clause 4 of Part V of the lease deed, are not applicable in respect of non-specified minor minerals by virtue of Rule 31 of the said Rules. Further, it was stated that after the amendment of the Rules on 12 August 2016, Rule 42 is applicable for all the minor minerals and that the same would be implemented by the Department.

Audit points out that the reply of the Department not only contradicts the Circular (May 2016) issued by the Director of the Department but also its own action to levy penalty in the cases of transportation without MDP. Audit maintains its position that penalty was applicable for all minor minerals even

[129] Chamarajanagara and Ramanagara.
[130] Chikkaballapura, Mysuru, Tumakuru and Udupi.
[131] Mysuru.
[132] Chamarajanagara, Chikkaballapura, Ramanagara, Tumakuru and Udupi.
[133] Paragraph No.6.4 of the Audit Report 2015-2016 (Report No.5 of 2016) and Paragraph No.5.6 of the Audit Report 2016-2017 (Report No.7 of 2017).
[134] Circular No. M&G: DCB/SQL-1/22/DCB Section/2016-2017 dated 3 May 2016.

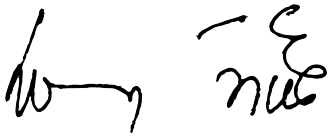
before the amendment on 12 August 2016, as is evident from the Rules applicable.

Audit reported these cases to the Government during April 2018. Reply was awaited (December 2018).

Bengaluru
The

(E. P. Nivedita)
Principal Accountant General
(Economic and Revenue Sector Audit)
Karnataka

Countersigned



New Delhi
The

(Rajiv Mehrishi)
Comptroller and Auditor General of India