

STATE REVIEWS



Indian Minerals Yearbook 2015 (Part- I)

54th Edition

**STATE REVIEWS
(Meghalaya)**

(FINAL RELEASE)

**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

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MEGHALAYA**Mineral Resources**

Coal and limestone are the only major minerals mined in the State. **Coal** occurs in Mikir Hills, Khasi Hills, Jaintia Hills and Garo Hills districts. Resources of **limestone** occur in West Garo Hills, East Khasi Hills, West Khasi Hills and Jaintia Hills districts. Other mineral occurrences are **apatite** in Jaintia Hills district; **china clay** in East Garo Hills & West Garo Hills, Jaintia Hills & East Khasi Hills districts; **copper, lead-zinc, silver** and **titanium minerals** in East Khasi Hills district; **felspar** and **rock phosphate** in East Garo Hills & Jaintia Hills districts; **fireclay** in East Khasi Hills & West Garo Hills districts; **granite** in West Khasi Hills district; **iron ore (magnetite)** in East Garo Hills district; **quartz** and **silica sand** in East Garo Hills, West Garo Hills & East Khasi Hills districts; and **sillimanite** in West Khasi Hills district (Table -1). The various coalfields and their reserves/resources in the State are given in Table-2.

Exploration & Development

Details of exploration activities conducted

by GSI and various agencies during 2014-15 are furnished in Table - 3.

Production

The value of mineral production (excludes atomic mineral and value for February and March in respect of 31 minerals notified as minor mineral vide Gazette notification dated 10.02.2015) in Meghalaya at ₹ 1,514 crore in 2014-15 decreased by 63% as compared to that in the previous year. About 84% of the total value of mineral production was accrued from coal during the year under review, whereas the remaining was contributed mainly by limestone (Table - 4).

The value of production of minor minerals was estimated at ₹ 721 lakh for the year 2014-15.

There were 17 reporting mines in 2014-15 as against 14 in the previous years.

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, the important mineral-based industries in the organised sector in the State are given in Table - 5.

Table – 2 : Reserves/Resources of Coal as on 1.4.2015 : Meghalaya

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	89.04	16.51	470.93	576.48
West Darangiri	65.40	-	59.60	125.00
East Darangiri	-	-	34.19	34.19
Balphakram-Pendenguru	-	-	107.03	107.03
Siju	-	-	125.00	125.00
Langrin	10.46	16.51	106.19	133.16
Mawtong Shelia	2.17	-	3.83	6.00
Khasi Hills	-	-	10.10	10.10
Bapung	11.01	-	22.65	33.66
Jaintia Hills	-	-	2.34	2.34

Source: Coal Directory of India, 2014-15.

Table – 1 : Reserves/Resources of Minerals as on 01-04-2010/1.4.2013* : Meghalaya

Mineral	Unit	Reserves				Remaining Resources				Total Resources (A+B)	
		Proved STD111	Probable		Feasibility STD211	Pre-feasibility STD221	Measured STD331	Indicated STD332	Inferred STD333		Reconnaissance STD334
			STD121	STD122							
Apatite*	tonne	-	-	-	-	-	-	1300000	-	1300000	1300000
China clay#	000 tonnes	-	-	-	-	1410	6266	76032	5167	88875	88875
Copper*											
Ore	000 tonnes	-	-	-	-	-	880	-	-	-	880
Metal	000 tonnes	-	-	-	-	-	9	-	-	-	9
Felspar#	tonne	-	-	-	-	-	-	37449	-	37449	37449
Fireclay#	000 tonnes	-	-	-	-	-	-	10999	-	10999	10999
Granite											
(Dim. stone)	000 cu m	-	-	-	-	-	-	286467	-	286467	286467
Iron ore*											
(Haematite)	000 tonnes	-	-	-	-	-	-	225	-	225	225
Iron ore*											
(Magnetite)	000 tonnes	-	-	-	-	-	-	3380	-	3380	3380
Lead-Zinc*											
Ore	000 tonnes	-	-	-	-	-	880	-	-	-	880
Lead metal	000 tonnes	-	-	-	-	-	16.5	-	-	-	16.5
Zinc metal	000 tonnes	-	-	-	-	-	14	-	-	-	14
Limestone	000 tonnes	138207	94459	232666	36898	23400	2811179	13941438	-	17273022	17505688
Quartz-											
Silica sand#	000 tonnes	-	-	-	-	-	177	6906	-	7083	7083
Phosphorite/Rock phosphate*	tonne	-	-	-	-	-	-	1311035	-	1311035	1311035
Sillimanite	tonne	-	-	-	-	-	-	55807	-	55807	55807
Silver*											
Ore	tonne	-	-	-	-	-	880000	-	-	880000	880000
Metal	tonne	-	-	-	-	-	19.8	-	-	19.8	19.8
Titanium** minerals	tonne	-	-	-	-	-	3345000	-	-	3345000	3345000

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Figures rounded off.

* Reserves/Resources as on 1.4.2013.

Declared as minor mineral vide Gazette notification dated 10.2.2015.

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Table – 3 : Details of Exploration Activities in Meghalaya, 2014-15

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Bauxite							
West Khasi Hills	Around Rambrai area	-	1.5	-	-	105	1.50 sq km detailed mapping and 26 m ³ pitting and trenching have been completed in the Investigation for lateritic bauxite around Rambrai area. The lateritic bauxite observed in the area is buff and brick red in colour. Pisolitic structure was also observed at many places. Four main lateritic bodies were identified in the area having the following dimensions, viz, 1 st body: 900 m length × 400 m width; 2 nd body: 260 m length × 150 m width; 3 rd body: 280 m length × 100 m width and 4 th body: 620 m length × 350 m width. Besides, these four main bodies, four small patches were also identified in the northwestern and northeastern part of the area. All the four bodies were developed over granite gneiss at the contact of granite gneiss and retrograded mafic granulite. A total of 26 m trenches have been dug in these bodies in order to collect samples as well as to expose the lithology in soil covered areas. 50 m of sections were exposed in bauxite bodies to study the complete weathering profile. The thickness of the complete profile of lateritic bauxite is about 8-10 m. At some places, a complete weathering profile was developed consisting of pedolith including soil, iron rich duricrust, boulders with pisolitic bauxite, clayey bauxite, saprolite and unaltered bed rock. A total of 13 nos. petrological samples, 8 nos. samples for ore microscopy and 6 nos. of XRD samples were collected to study thin/polished sections to understand the ore mineral phases. A total of 78 nos. of BRS samples were collected from lateritic bauxite for chemical analysis. Analytical results received so far show encouraging values of Al ₂ O ₃ ranging from 15.33% to 60.88% with an average value of 38.5%. Cr and V are also showing encouraging values up to a maximum of 1230 ppm and 875 ppm, respectively.

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Table - 3 (Concl.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Limestone							
East Khasi Hills	Extension area of Mawlong- Ishamati block of Shella - Bholaganj Belt	-	-	-	822.6	-	G3 stage investigation for limestone was taken up. The main litho units observed in the area are limestone, which is fossiliferous of Shella Formation and shale of Kopili Formation with intercalated bands of sandstone. The beds of limestone are trending E-W with sub horizontal dip 5°-12° toward south. Total 822.60 m drilling has been carried out in this block. The analytical results of core samples show two zones of chemical grade limestone viz., 0.0 m to 70.05 m=70.05 m, with CaO 50.15%, MgO 1.24%, SiO ₂ 3.1% and 79.20 m to 140.40 m=60.10 m, with CaO 50.80%, MgO 1.30%, SiO ₂ 3.15%.
Jaintia Hills	North of Larket block, Litang valley	-	-	7	768.05	-	G3 stage investigation for limestone was taken up. The maximum thickness (120 m) of limestone (Prang limestone) has been intersected in borehole JNLK-6. Kopili Formation and Prang limestone contain microfossils like <i>Numulites</i> , <i>Alviolina</i> , <i>Discocyclina</i> etc., bivalves like <i>Pecten</i> , <i>Oyster</i> and gastropod like <i>Conus</i> , <i>Fusus</i> , <i>Oliva</i> etc. On the basis of the analytical results received for the samples of three boreholes indicate presence of 38 m thick SMS grade limestone.
State Directorate of Geology & Mining							
Coal							
West Garo Hills	Damal Asim	1:4000	03	03	82	-	Pitting/trenching with 21 nos. geo-chemical analysis were done.
Limestone							
East Khasi Hills	Hatmawdon	1:50000	109.2	02	188.2	309	Total 72 cu m pitting/trenching was carried out.
	Nongtraï area	1:4000	19.9				
-do-	Balat area	1:50000	13.2	02	103.9	126	Total 09 cu m pitting/trenching was carried out.
		1:4000	2.8				
West Khasi Hills	Nongnah area	1:10000	10	-	-	70	Total 30 cu m pitting/trenching was carried out.
		1:4000	2.58				
Quartz							
South West Khasi Hills	N/v Nongty- nger	1:50000	10	-	-	86	Progressive survey was carried out.
		1:4000	3.59				

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**Table - 4 : Mineral Production in Meghalaya, 2012-13 to 2014-15
(Excluding Atomic Minerals)**

(Value in ₹ '000)

Mineral	Unit	2012-13			2013-14			2014-15 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value
All Minerals		14		39455101	14		40391047	17		15144264
Coal	'000t	-	5600	37365000	-	5700	37974500	3	2500	12670500
Limestone	'000t	14	4032	2016961	14	3616	2344472	14	3696	2401689
Sand (others)* #	t	-	12923	1065	-	-	-	-	-	-
Minor Minerals [@]		-	-	72075	-	-	72075	-	-	72075

*Note: The number of mines excludes minor minerals.***Associated with limestone.**@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.**# Declared as minor mineral vide Gazette notification dated 10.02.2015.***Table – 5 : Principal Mineral-based Industries in Meghalaya**

Industry/plant	Capacity (‘000 tpy)
Cement	
Adhunik Cement (Subsidiary of Dalmia Cement), Distt. Jaintia Hills.	1500
Amrit Cement Industries Ltd, Khleriat, Distt. Jaintia Hills.	1000
Cement Manufacture Co. Ltd, Lumshnong, Distt. Jaintia Hills.	600
Green Valley Industries, Nongsning, Distt. Jaintia Hills.	1000
JUD Cement Ltd, Norpuh, Distt. Jaintia Hills.	500
Mawmluh Cherra Cements Ltd, Cherrapunjee, Distt. East Khasi Hills.	210
Meghalaya Cements Ltd, Thangskai, Distt. Jaintia Hills.	650
Megha Technical & Engineering (P) (Subsidiary of CMCL), Lumshnong, Distt. Jaintia Hills.	670
Ferro-alloys	
Jaintia Ferro Alloys Pvt. Ltd, Byrnihat.	6
Maithan Alloys Ltd, Ribhoi.	15 MVA
Nalari Ferro Alloys Pvt Ltd, Norbhog.	11
Khasi Alloys Pvt Ltd, EPIP Meghalaya.	4.1
Iron & Steel	
Jai Kamakhya Alloy Pvt Ltd	815 tpd

Note: Data from Survey of Cement Industry & Directory, 2015.