

STATE REVIEWS



Indian Minerals Yearbook 2015 (Part- I)

54th Edition

**STATE REVIEWS
(Maharashtra)**

(FINAL RELEASE)

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

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MAHARASHTRA

Mineral Resources

Maharashtra is the sole producer of fluorite (graded) and the principal producer of bauxite, kyanite, manganese ore, quartzite and sand (others). The principal mineral-bearing belts in Maharashtra are Vidarbha area in the east and Konkan area in the west. Important mineral occurrences are: **bauxite** in Kolhapur, Raigad, Ratnagiri, Satara, Sindhudurg & Thane districts; **china clay** in Amravati, Bhandara, Chandrapur, Nagpur, Sindhudurg & Thane districts; **chromite** in Bhandara, Chandrapur, Nagpur & Sindhudurg districts; **coal** in Nagpur, Chandrapur & Yavatmal districts; **dolomite** in Chandrapur, Nagpur & Yavatmal districts; **fireclay** in Amravati, Chandrapur, Nagpur & Ratnagiri districts; **fluorite & shale** in Chandrapur district; **iron ore (haematite)** in Chandrapur, Gadchiroli and Sindhudurg districts; **iron ore (magnetite)** in Gondia district; **kyanite** in Bhandara & Nagpur districts; **laterite** in Kolhapur district; **limestone** in Ahmednagar, Chandrapur, Dhule, Gadchiroli, Nagpur, Nanded, Pune, Sangli & Yavatmal districts; **manganese ore** in Bhandara, Nagpur & Ratnagiri districts; **corundum & pyrophyllite** in Bhandara district; **quartz & silica sand** in Bhandara, Chandrapur, Gadchiroli, Gondia,

Kolhapur, Nagpur, Ratnagiri & Sindhudurg districts and **quartzite** in Gondia & Nagpur districts and **sillimanite** in Chandrapur district.

Other minerals that occur in the State are: **barytes** in Chandrapur & Gadchiroli districts; **copper** in Bhandara, Chandrapur, Gadchiroli & Nagpur districts; **felspar** in Sindhudurg district; **gold** in Bhandara & Nagpur districts; **granite** in Bhandara, Chandrapur, Dhule, Gadchiroli, Nagpur, Nanded, Nashik, Sindhudurg & Thane districts; **graphite & mica** in Sindhudurg district; **lead-zinc & tungsten** in Nagpur district; **marble** in Bhandara & Nagpur districts; **ochre** in Chandrapur & Nagpur districts; **silver & vanadium** in Bhandara district; **steatite** in Bhandara, Ratnagiri & Sindhudurg districts and **titanium minerals** in Gondia & Ratnagiri districts (Table-1). The coal reserves and resources along with the various coalfields located in the State are given in Table-2.

Exploration & Development

The details of exploration activities conducted by GSI and other agencies during 2014-15 are furnished in Table- 3.

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

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	5953.39	3189.64	2110.21	11253.24
Wardha Valley	3756.78	1492.58	1424.07	6673.43
Kamptee	1276.14	1204.88	505.44	2986.46
Umrer, Makardhokra	308.41	-	160.70	469.11
Nand-Bander	602.06	492.18	-	1094.24
Bokhara	10.00	-	20.00	30.00

Source: Coal Directory of India, 2014-15.

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Table -1: Reserves/Resources of Minerals as on 1.4.2010/1.4.2013* : Maharashtra

Mineral	Unit	Reserves				Remaining Resources				Total Resources (A+B)				
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Total (B)					
			STD121	STD122			STD221	STD222						
Barytes [#]	tonne	-	-	-	-	-	-	-	14800	89450	18610	-	122860	122860
Bauxite*	'000 tonnes	15787	12350	3512	31649	13161	6115	13312	38918	8354	50291	-	130149	161798
China clay [#]	'000 tonnes	-	-	-	-	418	256	856	11	184	5523	-	7248	7248
Chromite*	'000 tonnes	-	-	-	-	58	23	-	43	67	441	-	632	632
Copper*														
Ore	'000 tonnes	-	-	-	-	-	-	-	-	9399	3811	-	13210	13210
Metal	'000 tonnes	-	-	-	-	-	-	-	-	89.65	43.05	-	132.70	132.70
Dolomite* [#]	'000 tonnes	16544	16242	11385	44171	7275	3092	4190	7000	18050	334246	2994	376847	421018
Felspar [#]	tonne	228655	-	91462	320117	-	-	423180	-	-	485606	-	908786	1228903
Fireclay [#]	'000 tonnes	244	-	388	632	-	-	-	-	-	6849	-	6849	7481
Fluorite*	tonne	230258	63860	-	294118	-	-	-	-	-	100000	-	100000	394118
Gold*														
Ore (primary) tonne	-	-	-	-	-	-	-	-	-	-	1517000	-	1517000	1517000
Metal(primary)tonne	-	-	-	-	-	-	-	-	-	-	3.55	-	3.55	3.55
Granite (Dim. stone)	'000 cu m	-	-	-	-	-	6300	-	486925	-	665622	-	1158847	1158847
Graphite*	tonne	-	-	-	-	-	-	-	-	-	1160000	-	1160000	1160000
Iron ore*														
(haematite)	'000 tonnes	9231	7872	1296	18400	9886	6135	8997	80340	71806	67887	32185	277236	295636
Iron ore* (magnetite)	'000 tonnes	305	-	322	627	149	-	63	-	-	90	-	302	929
Kyanite	tonne	284307	-	96514	380821	-	4317	1167175	-	58500	1713600	-	2943592	3324413
Laterite* [#]	'000 tonnes	-	-	-	-	-	-	-	-	-	4000	-	4000	4000
Lead-zinc* ore	'000 tonnes	-	-	-	-	-	-	-	1967	6305	1000	-	9272	9272
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	133.56	428.11	28.00	-	589.67	589.67
Limestone	'000 tonnes	589789	176015	60794	826598	464232	176987	52152	28470	159309	1114112	-	1995262	2821860
Manganese* ore	'000 tonnes	12371	1812	1001	15184	1974	4966	6999	-	5268	3323	29	22558	37742

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Table - 1(Concl.d.)

Mineral	Unit	Reserves						Remaining Resources						Total Resources (A+B)	
		Proved		Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334		Total (B)
		STD 111		STD121	STD122			STD221	STD222						
Marble	'000 tonnes	-	324	-	324	-	-	81	-	-	57642	-	57723	58047	
Mica#	kg	-	-	-	-	-	65916000	-	-	-	15120000	-	81036000	81036000	
Ochre#	tonne	22260	-	16000	38260	17680	38080	100980	6010	6010	286000	-	454760	493020	
Pyrophyllite#	tonne	702680	-	281072	983752	-	-	-	958000	-	2185696	-	3143696	4127448	
Quartz-silica sand#	'000 tonnes	12356	2085	10884	25325	29372	15172	48391	-	355	58374	-	151663	176989	
Quartzite#	'000 tonnes	48700	-	19480	68180	9516	28	1639	-	-	11353	-	22536	90716	
Sillimanite	tonne	145144	-	58058	203202	-	-	-	-	64	2664	-	2728	205930	
Silver*															
Ore	tonne	-	-	-	-	-	-	-	-	-	235000	-	235000	235000	
Metal	tonne	-	-	-	-	-	-	-	-	-	0.23	-	0.23	0.23	
Talc/steatite/soapstone#	'000 tonnes	-	-	-	-	-	-	-	-	2565	14262	-	16827	16827	
Titanium** minerals	tonne	293539	-	117416	410955	-	151888	-	1020326	846000	1997108	-	4015322	4426277	
Tungsten* Ore	tonne	-	-	-	-	-	-	-	610000	5637250	1830000	-	8077250	8077250	
Contained WO ₃	tonne	-	-	-	-	-	-	-	1903	10304	3828	-	16035	16035	
Vanadium* Ore	tonne	-	-	-	-	276530	-	108100	-	-	-	-	384630	384630	
Metal	tonne	-	-	-	-	1106.12	-	432.40	-	-	-	-	1538.52	1538.52	

Figures rounded off.

* Reserves/Resources as on 1.4.2013.

** Resources of ilmenite and zircon as per Department of Atomic Energy are provided in the respective Mineral Reviews.

Declared as minor mineral vide Gazette notification dated 10.2.2015.

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

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Basemetals							
Bhandara	Silejhari area, Sakoli Fold Belt	-	-	-	-	-	G4 stage investigation to identify zones of anomalous base metal content viz., zinc and associated metals was taken up. The rocks of the area belong to Gaikhuri and Dhabetekri formations of Sakoli Group and Basement Amgaon gneiss. Disseminations of sulphide minerals, which include mainly pyrite, chalcopyrite, sphalerite and covellite are observed in the chert bands, cherty quartzite and metabasalt from west of Silejhari and west of Bodra areas. The width of the chert bands varies from 0.5 m to 15 m having a maximum strike extension of ~300 m and trends mostly NS. Sulphide mineralisation occurs both as stratiform and stratabound nature in cherts and phyllites as well as hydrothermal nature associated with quartz veins. One BRS of oxidised chert band from west of Bodra indicated 0.13% Zn and 0.27% Pb and one sample of oxidised phyllite from the same area recorded 0.12% Zn. Seven samples of chert bands and phyllites from west of Silejhari show presence of Tungsten ranging from 317 ppm to 587 ppm. 140 soil samples are collected on 100 x 20 metre grid along 7 traverse lines oriented E-W. Results received for 50 soil samples indicated values of Zn ranging from 125 ppm to 0.22% and Pb from 100 ppm to 0.18%. The investigation will continue in FS 2015-16.
-do-							
Chandrapur	Nai Dilli and Lal Heti areas	-	-	8	-	-	G3 stage investigation of copper and associated mineralisation was taken up. In the study area, basement gneissic rock (tonalite-quartz diorite gneiss) is exposed near Nai Dilli block as small patches which exposes mineralised quartz reef along the NNW-SE trending Thanewasna shear zone. Similarly, in Lal Heti block, leucocratic Mull granite is exposed in which the thin quartz vein is emplaced along the Thanewasna shear zone. In Nai Dilli and Lal Heti blocks, surficial evidence such as malachite staining and covellite as well as the occurrence of chalcopyrite and pyrite as observed in quartz vein indicate the hydrothermal activity in the area. In core samples of quartz chlorite veins, chalcopyrite and pyrite occur in the form of dissemination, veinlets and chunks. Eight boreholes were drilled

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Table - 3 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Basemetals							which include four in Nai Dilli and four in Lal Heti blocks. In Nai Dilli block, the NDBH-1, one mineralised zone having an average grade of 0.23% Cu value is demarcated. In borehole no NDBH-2, total seven mineralised zones were demarcated with grade of Cu varying from 0.20% to 0.42%. The maximum gold value of 950 ppb is also recorded in one sample of NDBH-2. In Lal Heti Block, one mineralised zone having an average grade of 0.20% Cu is demarcated within LHBH-1. In LHBH-2, two mineralised zones were identified with Cu grade varying from 0.21 to 0.42%. The investigation has been completed.
Chandrapur	Bamni area	-	-	-	-	-	Investigation (G4 stage) was continued from FS 2013-14 to establish the base-metal and associated gold mineralisation. Large Scale Geological Mapping of 50 sq km area has been completed and it revealed that the quartzofeldspathic biotite gneiss with amphibolites known as Amgaon gneiss is the basement of the investigation area. Mesoproterozoic Penganga sandstone which occurs in the western and south-western part of the study area has a faulted contact with the basement gneiss. A prominent quartz reef which intruded into the basement gneiss is exposed near Bamni and this is being mapped and sampled to establish the base metal and gold mineralisation. The quartz reef which is exposed in Bamni area trends N55°W - S55°E for about 400 m in strike length with varying width from 02 m to 15 m. The quartz reef is mineralised at places intermittently in smoky grey portions. The primary sulphide phases identified include chalcopyrite, pyrite, sphalerite and galena. Pure sulphide phases are separated from the quartz reef sample and submitted for sulphide isotope study. Samples from Bamni quartz reef were submitted for fluid inclusion study to understand the fluid composition, temperature and pressure at which the hydrothermal deposit was formed. Bed rock samples are collected across the strike of the mineralised zone by channel and chip sampling from the quartz reef for chemical analysis. Chemical results of bed rock samples show the Cu values ranging from 30 ppm to 0.37% while Pb value varies from 73 ppm to 0.65% (one sample shows 1.12%) and Zn from 15

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Table - 3 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							ppm to 0.63% (one sample shows 4.8%). Chemical analytical results of soil sample (65 nos) show the Cu values ranging from 10 ppm to 150 ppm while Pb varies from 25 ppm to 600 ppm and Zn from 20 ppm to 125 ppm. Ore petrography and SEM-EDS study is carried out and different sulphide phases are identified.
Coal							
Wardha Valley Coalfields	Jhamkola area	-	-	2	975.5	-	LSM in the area revealed that the area is covered with two basaltic flows of Ajanta Formation of Sahyadri Group of Deccan Trap. A total of 975.50 m has been drilled in two boreholes viz. WJ-3A, 4D. Drilling by outsourcing commenced on 22/03/2014 with the commencement of borehole WJ- 3A. In borehole WJ-3A, Deccan Trap/ Motur and Motur/ Barakar formational contacts were demarcated at 110.62 m and 460.55 m depths, respectively. One composite Barakar coal seam has been intersected within the depth range from 521.95 m to 540.59 m. The cumulative thickness of coal is 5.35 m with individual seam thickness varying from 0.55 m to 3.20 m. The borehole was closed at the depth of 546.50 m in Barakar Formation. Boreholes WJ-4 to 4C abandoned in Motur Formation. After abandonment of these boreholes redrilling commenced as WJ-4D on 30/01/2015 and again abandoned at the depth of 321.00 m in Motur Formation on 28/02/2015. Investigation closed on 12/03/2015.
Wardha Valley Coalfields	Dabhadi sector	1:12500	2	8	2082.5	-	The LSM of 2 sq km carried out in the area on 1: 12,500 scale revealed that the area is covered with mainly three basaltic flows of Ajanta Formation of Sahyadri Group. During the period total eight boreholes were drilled, however, the effective drilling of 2082.50 m has been considered by outsourcing from 17/04/2014 in five boreholes WDD-1A, 2, 3 (completed), 4A & 5A (abandoned). The intersected thickness of Deccan Trap varies from 128.27 m (WDD-1A) to 171.33 m (WDD-2). The Motur-Barakar formational contact in this sector varies from 322.70 m (WDD-3) to 363.89 m (WDD- 1A). The entire Barakar Formation has been intersected in borehole WDD-3 and the thickness of Barakar Formation is 82 m in this area (from 322.70 m to 404.70 m). The borehole closed at 417.50 m depth

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Table - 3 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							within Talchir Formation (12.80 m+). Barakar coal seams were intersected within the depth range from 357.70 m (WDD-3) to 452.58 m (WDD-1A). The individual coal thickness varies from 0.80 m (WDD-1A) to 5.05 m (WDD-2) but borehole wise cumulative coal thickness varies from 2.30 m (WDD-3) to 6.98 m (WDD-1A). Borehole no. WDD- 4A & 5A abandoned in Motur Formation at the depth of 417.00 m and 324.00 m, respectively. Investigation closed on 12/03/2015.
Coal							
Wardha Valley Coalfields	Wadhona-Phukta area	-	-	2	291.45	-	The LSM revealed that the area is covered with black soil with scanty outcrops of Deccan Trap. During the period under review, a total of 291.45 m drilling has been carried out in two boreholes namely WWP- 1 & 2. Interpretation of geophysical report showed considerably thick sediments below the Deccan Trap but the borehole WWP-1 reached to the basement sediments of Sullavai Formation after intersecting Deccan Trap & Lameta Formation without intersecting lower Gondwana Sequence. The Deccan Trap/Lameta Formation contact demarcated at the depth of 61.05 m and Lameta/Sullavai formation at 65.90 m depth. The borehole closed on 29/11/2014 at a depth of 125.70 m. Borehole WWP-2 commenced on 14/12/2014 and also intersected basement at the depth of 139.12 m below Deccan Trap. The borehole closed at the depth of 165.75 m in Sullavai Formation on 05/02/2015. Investigation closed on 31/03/2015.
Gold							
Sindhudurg	Kudal-Kankavle- Vagre areas Dabachiwadi area	- 1:5000	- 1	-	-	-	G4 stage investigation was carried out in the Precambrian terrain. The predominant rock types exposed in the area are BIF, serpentinite, amphibolite which occur as dismembered enclaves within TTG gneiss. This suite of rocks is intruded by granitoid, gabbroid, pegmatite and quartz veins. Felsic intrusives with pyrite and chalcopyrite were noted near the contact zone between serpentinite and granitoid. DM (1:5000) of an area of 1 sq km has been carried out in Dabachiwadi area. Dabachiwadi exposes serpentinite/dunite, BMQ, TTG gneiss, foliated granite gneiss, grey quartz vein, pegmatite and felsic intrusive with pyrite-chalcopyrite disseminations (exposed dimension is 75 m × 80 m).

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Table - 3 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
REE Nagpur	Deolapar	-	-	-	-	100	<p>The presence of granite mylonite close to the sulphide rich occurrence possibly indicates a shear zone. The serpentinite/ dunite exposed in the area exhibits chrome concentration as black sub metallic mineral along weak planes. Few nickel sulphides were also seen in these rocks. These bodies appear to be potential sources for Ni-Cr-PGE. There are many reported economic concentrations of Au in such bands. These have been sampled for Au analysis. Number of pegmatites seen close to the granitoid bodies could be host for REE. The investigation will be continued during FS 2015-16.</p> <p>G4 stage investigation was taken up for locating the REE and RM bearing pegmatites within the rocks of Sausar Mobile Fold Belt and Tirodi Biotite Gneiss (TBG). Several mappable pegmatite bodies have been located within the rocks of Sausar Group and TBG. Pegmatites are classified into simple and complex (zoned and un-zoned) on the basis of variations in mineralogy, texture and shape. The field relationship between pegmatite and the host rock reflects the structural control of the pegmatite intrusion. Pegmatites occur as tabular to lenticular or pipe-like bodies and generally range from a few cm to about 1 km in length and from 1 cm to about 50 m in width. Simple pegmatites are chiefly composed of quartz, feldspar, mica and garnet, whereas complex pegmatites are composed of quartz, K-feldspar, plagioclase, mica, tourmaline, apatite, beryl, zircon and monazite. In some complex pegmatite K-feldspar, beryl, tourmaline and mica commonly occur in larger crystals than the associated minerals. Zircon, monazite and fluorapatite have been identified in petrographic studies. Beryl-bearing pegmatites have been recorded due east of Bandra, northwest of Nawegaon and south of Dulara village. The zoned pegmatite located 2 km east of Bandra contains beryl crystal as big as 28 cm in length and 14 cm in diameter. The beryl in these pegmatites is associated with the quartz core and quartz-muscovite zone. Out of the 100 BRS, geochemical results of 05 BRS have been received and the highest concentration of REE is 600.41 ppm. Be and Cs content of beryl sample from zoned pegmatite</p>

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Table - 3 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		
							located east of Bandra is analysed up to 4.12% and 612 ppm, respectively. The concentration of Ta, Nb and Rb as revealed by geochemical analysis of bed rock sample is up to 805 ppm, 122 ppm and 3293 ppm, respectively. The concentration of tungsten in thirty bed rock samples is more than 300 ppm with the highest value of 1267 ppm. The investigation will continue in FS 2015-16.
Tungsten Chandrapur	Lawari-Amboli area	-	-	-	-	-	G4 stage investigation was taken up for tungsten and associated mineralisation with an objective to identify the zones of tungsten and associated mineralisation in Lawari-Amboli area. Geologically, the area represents the basement gneiss i.e., Bengpal Gneissic Complex, quartz – tourmaline vein, pegmatite, aplite, quartz vein and mafic enclaves. Within the Bengpal gneiss, pegmatite, banded quartz-tourmaline vein, quartz vein, amphibolites and some mafic enclaves are observed. Beryl crystal and some peacock colour staining are observed in the pegmatite vein near the Chichola village. Some mafic enclaves of amphibolite are observed within the gneissic rock near the Amboli village. Scheelite is observed (under UV lamp) in quartz tourmaline vein studied SW of Amboli village. All the quartz-tourmaline veins, pegmatite veins and quartz veins were mapped in detail. The tungsten mineralisation is confined mainly in quartz-tourmaline veins and greisen zones. The exposed rock shows smoky quartz and peacock colour staining indicating copper and possible gold mineralisation. In the Lawari reserve forest, bed rock samples of quartz tourmaline vein, analysed W values of 301 ppm and Pb values of 0.34%. The highest W value so far recorded is 530 ppm from bed rock sample of quartz vein near Amboli village. Bed rock samples of the study area give the W value of 532 to 50 ppm. Pitting and trenching samples of quartz tourmaline vein of the Amboli village give the maximum W value of 284 ppm and sulphide mineralisation is also observed in PT samples. Scheelite was noticed only in the samples of Lawari reserve forest. Bed rock sample of pegmatite vein from Chichola village gives the W

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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		
							values of 151 ppm. Similarly, 80 ppb gold values is also reported from BRS and PT samples of quartz tourmaline vein. The investigation will continue in FS 2015-16.
MOIL							
Manganese Ore							
Bhandara & Nagpur	Dongri Buzurg, Chikla, Gumgaon, Kandri, Mansar, Old Satuk and New Satuk mines	-	-	45	8475	-	MOIL carried out 8,475 m exploratory drilling involving 45 boreholes in nine mines (Dongri Buzurg & Chikla in Bhandara distt and Gumgaon, Kandri, Mansar, Old Satuk and New Satuk in Nagpur distt and two mines i. e. Tirodi & Bharweli situated in other state). The reported reserves /resources of manganese ore as on 01.04.2015 were in Gumgaon (4.25 million tonnes), Kandri (8.17 million tonnes), Munsar (5.76 million tonnes), Chikla (4.71 million tonnes), Dongri-Buzurg (11.37 million tonnes), Beldongri (0.28 million tonnes), Old Satuk (0.53 million tonnes) and New Satuk (0.026 million tonnes).
State Directorate of Geology & Mining							
Bauxite							
Ratnagiri	Guhaghar area	-	40	-	-	33	DGM carried out 40 sq km mapping and 33 nos. sampling for bauxite/aluminous laterite in the area.
Coal							
Nagpur	Dawa Phukeshwar area	-	-	04	1158.3	-	During the year about 0.12 million tonnes of coal deposit was proved and total coal reserves was proved at 10.82 million tonnes till end of 2014-15.
Nagpur	Nand-Pajrepar area	-	-	16	7757.9	-	During the year about 3.89 million tonnes of coal deposit was proved and the total coal reserves was proved at 35.86 million tonnes till end of 2014-15.
Yavatmal	Adkoli-Khadak-doh-Chichghat area	1:25000	03	08	1722	-	During the year about 4.11 million tonnes of coal reserves was proved and the total reserves was proved at 9.60 million tonnes by the end of the 2014-15.
-do-	Ashtona Kothurna & Mangli area	-	-	05	915.5	-	During the year about 0.63 million tonnes coal reserves was proved and the total coal reserves was placed at 2.5 million tonnes by the end of 2014-15.
Pyrophyllite							
Khatgaon	-	1:50	1.60	63	5477.9	1369	Based on exploration 4.87 MT reserves/resources estimated.

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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 Maharashtra during 2014-15 at ₹ 8,873 crore increased by 14% as compared to that in the previous year. Maharashtra accounts for about 3% in the total value of mineral production during the year under review. It was the sole producer of fluorite and important producer of kyanite (30%) and manganese ore (29%) in the country during 2014-15. It was also the third largest producer of sulphur (13%) and bauxite (12%) and sillimanite (9%) in the national output of the respective mineral. Coal contributed 76% of the total value of mineral production in the State during the year.

Among the important minerals, increase in production was observed for laterite (28%),

fluorite (18%), sulphur (12%), limestone (10%), iron ore (9%), coal (3%) etc. However, fall in production was reported in case of dolomite (56%), Silica Sand (53%), quartz (52%), sand (others) (49%), pyrophyllite (33%), fireclay (25%), kyanite (18%) and sillimanite (8%) as compared to the previous year (Table-4).

The value of production of minor minerals was estimated at ₹ 1,056 crore for the year 2014-15.

The number of reporting mines was 165 in 2014-15 as against 173 in the previous year.

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

Mineral	Unit	2012-13			2013-14			2014-15 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		151		129953596	173		78014910	165		88725297
Coal	'000t	58	39100	62356800	63	37200	57363500	66	38300	67045400
Bauxite	t	16	2628328	926330	16	2606349	945574	14	2630715	1179604
Chromite	t	-	-	-	1	19	75	-	-	-
Iron Ore	'000t	13	1193	1251967	17	1888	1962604	14	2050	2360611
Manganese Ore	t	18	683185	4686800	21	666191	5222536	20	669813	5315595
Dolomite [#]	t	4	314562	99538	5	233384	68361	6	102236	28431
Fireclay [#]	t	1	7547	1132	1	5076	761	1	3799	598
Fluorite	t	1	3092	13818	1	2487	11402	1	2947	13849
Kyanite	t	3	33	44	3	2263	7363	2	1860	7196
Sillimanite	t	2	2590	3923	2	6729	9964	1	6223	9538
Laterite [#]	t	1	4000	552	1	53987	7558	1	69000	9660
Limestone	'000t	14	11924	1820480	17	10997	1629631	17	12086	2016552
Pyrophyllite ^{**}	t	-	714	259	-	1527	865	-	1030	692
Quartz [#]	t	5	17475	14899	6	14985	6791	6	7256	6030
Quartzite [#]	t	-	55117	43160	-	58073	52063	-	59991	52234
Silica Sand [#]	t	12	278138	82656	15	274966	97212	13	129947	59139
Sand (others) [#]	t	3	750877	49759	4	577986	38080	3	291979	27301
Shale ^{**#}	t	-	347393	32335	-	289026	29170	-	294076	31467
Sulphur	t	-	46991	-	-	51301	-	-	57691	-
Minor Minerals [@]		-	-	58569144	-	-	10561400	-	-	10561400

Note : The number of mines excludes minor minerals.

* Associated with Kyanite and Sillimanite.**Associated with Dolomite and 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.

STATE REVIEWS

Table – 5 : Principal Mineral-based Industries in Maharashtra

Industry/plant	Capacity ('000 tpy)
Abrasives	
Associated Abrasives Ltd, Nashik.	NA
Flexoplast Abrasives (I) Ltd, Chikalthana Distt. Aurangabad.	500000 (sq m)
Grindwell Norton Ltd, Mora, Uraon, Raigad.	NA
Aluminium Products	
Hindalco, Recycling Plant, Taloja.	50
Hindalco, Mouda, Distt. Nagpur.	30 (rolling mill) 14 (conductor rod)
Asbestos Products	
Everest Building Products Ltd, Mulund.	NA
Hyderabad Industries Ltd, Musarane	60.0
Newkem Products Corp, Mumbai.	9.9
Swastik Industries, Pune.	NA
Cement	
ACC Ltd, Chanda, Distt. Chandrapur.	2640
Ambuja Cement Ltd, (Maratha Cement Works), Upparwahi, Chandrapur.	2400
India Cement, Vaijnath, Parli, Distt. Beed (G).	1100
JSW Cement, Dolvi, Distt. Raigad.	970 (slag cement)
Manikgarh Cement, Gadchandur, Distt. Chandrapur.	2200
Murli Industries Ltd, Naranda, Distt. Chandrapur.	3000
Orient Cement, Jalgaon (G).	2000
Reliance Cement, Butibori, Distt. Nagpur (G).	500
Ultratech Cement, Hotgi, Distt. Solapur (G).	1800
Ultra Tech Cement Ltd, Awarpur, Distt. Chandrapur.	3600
Ultra Tech Cement Ltd, Ratnagiri Works (G), Distt. Ratnagiri.	400
Ceramics	
Four Field, Pimpri, Distt. Pune.	1.2
H & R Johnson (India) Ltd, Pen.	154.8
Joglekar Refractory & Ceramics Pvt Ltd, Rabale, Distt. Thane.	364.8
NITCO Tiles Ltd, Raigad.	66 lacs (Sq m)
NECO Ceramics, Nagpur.	8.1

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Chemicals	
Borax Morarji Ltd, Ambarnath.	25 (borax) 8 (boric acid)
Century Rayon, Shahad, Distt. Thane.	25 (rayon yarn) 20 (caustic soda)
Foseco India Ltd, Sanswadi.	15 (foundry chemicals)
Gopalchand Rasayan, Tarapur, Distt. Thane.	41.3 (H ₂ SO ₄)
MTZ Industries Ltd, Patalganga.	1.2 (sulphur)
National Peroxide Ltd, Kalyan, Distt. Thane.	1.4 (sodium per borate)
Sudarshan Chemical Ind. Ltd, Roha, Distt. Raigad	5.2 (pigments)
Tecil Chemical & Hydro Power Ltd, Mumbai.	30 (calcium carbide)
Zirconium Chemicals Pvt. Ltd, Taloja, Distt. Raigad.	0.3 (zirconium salt)
Copper Wire Rods	
HCL, Copper Project, Taloja.	60
Electrode	
GEE Ltd., Thane.	4.02 (Mill. m)
Electrolytic Manganese Dioxide	
MOIL, Dongri Buzurg, Distt. Bhandara.	1
Union Carbide Ltd (Now Eveready Ltd), Thane.	2.5
Fertilizers	
Balaji Fertilizers Pvt. Ltd, Nanded.	20 (SSP)
Basant Agro Tech (India) Ltd, Barshi Takli, Akola.	120 (SSP)
Basant Agro Tech (India) Ltd, Jalgaon.	132 (SSP)
BEC Fertilizer (Unit of Bhilai Engg. Corpn. Ltd), Gunjakheda, Wardha.	66 (SSP)
Bharat Agri Fert & Realty Ltd, Kharivali, Thane.	132 (SSP)
Coromandel International Ltd (Formerly Liberty Phosphate Ltd.), Pali, Raigad.	66 (SSP)
Datta Agro Services Pvt. Ltd, Bhokari, Jalgaon.	132 (SSP)
Deepak Fertilizers & Petrochemical Corporation Ltd, Taloja.	230 (ANP)
Kasturchand Fertilizers (Erstwhile Jairam Phosphates Ltd), Wadsa, Gadchiroli.	66 (SSP)
Rajlaxmi Agrotech India Pvt. Ltd, Gundewadi, Jalna.	60 (SSP)
R. C. Fertilisers Ltd, Lakhmapur, Nashik.	132 (SSP)

(Contd.)

STATE REVIEWS

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Rama Krishi Rasayan (A division of Rama Phosphates Ltd), Loni Kalbhor, Pune.	132 (SSP)
RM Phosphate and Chemicals Pvt. Ltd, Nardala, Dhule.	264 (SSP)
Shiva Global Agro Industries Ltd (Formerly Shiva Fertilizers Ltd.), Nanded.	120 (SSP)
Shri Bhavani Mishra Fertilizers Pvt. Ltd, Vazirabad, Nanded.	30 (SSP)
Shri Gajraj Fertilizers Pvt. Ltd, Bhoyar, Yavatmal.	28 (SSP)
Shree Pushkar Chemicals & Fertilizer Ltd, Lote Porshuram, Khed, Ratnagiri.	100 (SSP)
Shree Datta Fertilizers & Chemicals Pvt Ltd, Amravati.	60 (SSP)
Zuari Fertilizers and Chemicals Ltd, Mahad, Distt. Raigad.	216 (SSP)
MAIDCL, Rasayani.	60 (NPK)
MAIDCL, Nanded.	70 (NPK)
MAIDCL, Pachora, Distt. Jalgaon.	70 (NPK)
MAIDCL, Wardha.	65 (NPK)
MAIDCL, Kolhapur.	30 (NPK)
MAIDCL, Jalna.	30 (NPK)
RCF, Trombay.	330 (Urea) 690 (Complex)
RCF, Thal, Distt. Raigad.	2000 (Urea)
Pesticides	
Hindustan Insecticides Ltd, Rasaini, Distt. Raigad.	13.2
Pentacem, Kendgaon, Distt. Ahmednagar.	1.7
Glass	
Ace Glass Containers Ltd, Pimpri, Distt. Nashik.	NA
Apte Flasks & Refills Pvt. Ltd, Raigaon.	1500
Astral Glass Pvt. Ltd, Igatpuri.	16.4
Empire Industries Ltd (Vitrum Glass), Vikroli, Mumbai.	37.5
Hindustan National Glass & Industries Ltd, Nashik.	320 TPD
Paisa Fund Glass Works, Talegaon Dabhade.	0.06
The Mahalaxmi Glass Works Pvt. Ltd, Mumbai.	48.0
Iron & Steel	
JSW Ispat Steel Ltd, Dolvi, Raigad.	2800 (Sinter) 1600 (Sponge iron) 5000 (Crude/Liquid steel) 2000 (pig iron)

(Contd.)

Table - 5 (Concl.)

Industry/plant	Capacity ('000 tpy)
Lloyds Steel Ltd, Wardha.	600 (HRC) 350 (CRC) 250 (GPC)
Indian Seamless Steel & Alloys Ltd, Jejuri, Distt. Pune.	450 (seamless tubes) 350 (alloy & carbon steel)
Sunflag Iron & Steel Co. Ltd, Bhandara.	150 (sponge iron) 200 (alloy steel) 364 (sinter)
Facor Steel Ltd, MIDC, Hingana, Nagpur.	60 (Alloys) Carbon steel & Specialised Steel
Pig Iron	
Ispat Metallics India Ltd, Dolvi, Raigad.	2000
Tata Metallics Ltd (Usha Ispat Ltd, Redi), Distt. Sindhudurg.	300
Sona Alloys Pvt Ltd, Satara.	314
Usha Ispat Ltd, Redi.	300
Sponge Iron	
Ambey Iron Pvt. Ltd, Chincholi, Solapur.	45
Dhanalakshmi Sponge Iron, Daregaon, Distt. Jalana.	60
Lloyds Metals & Engineers, Ghugus, Chandrapur.	270
Welspun Max Steel Ltd (formerly Vikram Ispat), Salav, Distt. Raigad.	900
Ferro-alloys	
Bharat Pulverising Mills Ltd, Mumbai.	0.2
Chandrapur Ferro Alloys Plant (SAIL), (formerly Maharashtra Elektros melt Ltd), Chandrapur.	100
Natural Sugar & Allied Industries Ltd, Sai Nagar, Ranjani, Distt. Osmanabad.	12 MVA
Sunbel Alloys Co. Ltd, Thane-Belapur.	0.3
Welspun Maxsteel Ltd, Salav, Raigad.	90
Refractory	
ACE Refractories, Nagpur.	60
Petroleum Refinery	
BPCL, Mumbai.	12000
HPCL, Mumbai.	6500

(G) : Grinding units.

Note: Data, for fertilizer and cement industries on respective websites, hence it has been taken from Indian Fertilizer Scenario, 2015/FAI Statistics, 2014-15 and Survey of Cement Industry & Directory, 2015, respectively.