

STATE REVIEWS



Indian Minerals Yearbook 2015 (Part- I)

54th Edition

**STATE REVIEWS
(Jharkhand)**

(FINAL RELEASE)

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

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JHARKHAND

Mineral Resources

Jharkhand is one of the leading mineral producing States. It is the sole producer of flint stone in the country and is one of the leading producers of coal, gold, graphite, bauxite, kaolin and felspar. Uranium ore is mined and processed by Uranium Corporation of India Ltd (UCIL) for supply as fuel to the country's nuclear power reactors through six underground mines, one opencast mine, and two processing plants. Jharkhand accounts for about 34% rock phosphate, 25% iron ore (haematite), 32% apatite, 22% andalusite, 20% cobalt ore, 20% copper ore, 19% granite (dimension stone) and 5% silver ore resources of the country.

Important minerals that occur in the State are **bauxite** in Dumka, Gumla, Latehar, Lohardaga and Palamu districts; **china clay** in Dumka, Hazaribagh, Lohardaga, East & West Singhbhum, Sahebganj and Ranchi districts; **coal** in Bokaro, Deoghar, Dhanbad, Giridih, Godda, Hazaribagh, Palamu, Pakur and Ranchi districts; **copper** in Hazaribagh and East Singhbhum districts; **dolomite** in Garhwa and Palamu districts; **felspar** in Deoghar, Dhanbad, Dumka, Giridih, Hazaribagh, Jamtara, Koderma, Latehar, Palamu and Ranchi districts; **fireclay** in Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Latehar, Palamu, Ranchi and West Singhbhum districts; **gold** in East Singhbhum district; **graphite** in Palamu district; **iron ore** (haematite) in West Singhbhum district; **iron ore** (magnetite) in Gumla, Hazaribagh, Latehar, Palamu and East Singhbhum districts; **kyanite** in Saraikela-Kharsawan and West Singhbhum

districts; **limestone** in Bokaro, Dhanbad, Garhwa, Giridih, Hazaribagh, Palamu, Ranchi, East & West Singhbhum districts; **manganese ore** in East & West Singhbhum districts; **mica** in Giridih and Koderma districts; **ochre** in West Singhbhum district; **dunite/pyroxenite** in East Singhbhum district; **quartz/silica sand** in Deoghar, Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Jamtara, Koderma, Latehar, Palamu, Ranchi, Sahebganj, Saraikela-Kharsawan and West Singhbhum districts; and **quartzite** in East & West Singhbhum districts.

Other minerals that occur in the State are **andalusite** and **rock phosphate** in Palamu district; **apatite, chromite, cobalt, nickel, gold** and **silver** in East Singhbhum district; **asbestos** in East & West Singhbhum districts; **barytes** in Palamu and East Singhbhum districts; **bentonite** in Pakur and Sahebganj districts; **garnet** in Hazaribagh district; **granite** in Deogarh, Dhanbad, Dumka, Giridih, Godda, Gumla, Hazaribagh, Koderma, Lohardaga, Palamu, Ranchi and East Singhbhum districts; **sillimanite** in Hazaribagh district; **talc/steatite/soapstone** in Giridih, Koderma, Palamu, East & West Singhbhum districts; **pyrophyllite** in Saraikela-Kharaswan district; **titanium minerals** in Ranchi and East Singhbhum districts and **vermiculite** in Giridih and Hazaribagh districts (Table - 1). The reserve/resources of coal and the various coalfields located in Jharkhand 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 – 1 : Reserves/Resources of Minerals as on 1.4.2010/1.4.2013* : Jharkhand

Mineral	Unit	Reserves						Remaining Resources						Total Resources (A+B)
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Andalusite	'000 tonnes	-	-	-	-	-	-	-	-	4000	-	4000	4000	
Apatite*	tonne	-	-	-	-	-	-	2110000	1620000	3540000	-	7270000	7270000	
Asbestos	tonne	-	-	-	-	3871	18309	2885	5769	124059	-	154893	154893	
Barytes*	tonne	-	-	-	-	-	-	-	-	35900	-	35900	35900	
Bauxite*	'000 tonnes	57931	1508	11534	70972	13991	13802	15760	17474	53983	-	119817	190789	
Bentonite	tonne	-	-	609406	609406	3067	-	-	-	367527	-	370594	980000	
China clay*	'000 tonnes	8554	325	8731	17610	209	1565	1936	7363	149957	18019	181081	198691	
Chromite*	'000 tonnes	-	-	-	-	-	-	15	98	623	-	736	736	
Cobalt*	million tonnes	-	-	-	-	-	-	-	2	-	7	9	9	
Copper* ore	'000 tonnes	8303	6521	4310	19134	3765	23781	98578	105811	41726	-	276828	295961	
Metal	'000 tonnes	89.78	61.44	45.87	197.09	48.06	251.63	1150	1097.29	507.38	-	3088.85	3285.94	
Dolomite**	'000 tonnes	14440	-	6720	21160	690	350	860	-	1857	-	3756	24916	
Dunite	'000 tonnes	373	-	570	943	130	-	140	780	6121	8637	16415	17358	
Felspar*	tonne	5675	-	274971	280646	-	40766	32510	120388	881045	-	1354142	1634788	
Fireclay*	'000 tonnes	828	-	775	1602	12	479	125	249	64151	-	65017	66619	
Garnet	tonne	-	-	-	-	-	88303	-	-	21768	-	110071	110071	
Gold*														
Ore (primary)	tonne	20900	-	-	20900	-	-	-	5146952	4203337	-	9350289	9371189	
Metal (primary)	tonne	0.07	-	-	0.07	-	-	-	3.61	10.26	-	13.87	13.94	
Granite (Dim. stone)	'000 cu m	-	-	-	-	-	-	-	651300	8197110	26930	8875340	8875340	
Graphite*	tonne	2600399	-	1781512	4381911	364821	28435	1947344	1878625	6657805	1223255	12103035	16484946	
Iron ore* (haematite)	'000 tonnes	978590	369346	78797	1426733	998679	180145	195521	172573	727763	1308668	3642349	5069082	
Iron ore* (magnetite)	'000 tonnes	-	-	-	-	-	865	2502	3997	2845	48	10667	10667	
Kyanite	tonne	267222	524485	402325	1194032	-	-	41384	1754900	3040283	-	4836567	6030599	
Laterite**	'000 tonnes	-	-	-	-	-	-	-	-	570	-	570	570	
Limestone	'000 tonnes	144259	4105	54713	203077	8364	7704	9672	12125	372131	11803	431333	634410	

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Table - 1 (Concl.)

Mineral	Unit	Reserves					Remaining Resources					Total Resources (A+B)	
		Proved STD 111	Probable		Feasibility STD211	Pre-feasibility STD221	Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)		
			STD121	STD122									STD222
Manganese ore*	'000 tonnes	2976	655	328	3970	2509	1386	513	-	4177	1126	9711	13681
Mica	kg	-	-	-	-	-	-	-	-	1494430	170700	1665130	1665130
Nickel ore*	million tonnes	-	-	-	-	-	-	-	2	7	-	9	9
Ochre#	tonne	63695	-	4361	68056	-	-	-	147039	-	-	147039	215095
Phosphorite/ Rock phosphate*	tonne	-	-	-	-	-	-	-	-	107370000	-	107370000	107370000
Pyrophyllite#	tonne	858	-	328	1185	-	-	-	-	-	-	-	1185
Quartz-silica sand#	'000 tonnes	563	4	8671	9238	2	989	3299	518	141342	107	147283	156521
Quartzite#	'000 tonnes	1079	-	174	1253	-	-	-	197	38869	-	39340	40592
Sillimanite	tonne	-	-	-	-	-	-	-	-	83000	-	83000	83000
Silver*													
Ore	tonne	-	-	-	-	-	-	-	-	23840000	-	23840000	23840000
Metal	tonne	-	-	-	-	-	-	-	-	5.22	-	5.22	5.22
Talc-steatite-soapstone#	'000 tonnes	-	-	-	-	-	-	73	2	243	16	338	338
Titanium** minerals	tonne	-	-	-	-	-	-	-	-	3630000	755000	4385000	4385000
Vermiculite	tonne	-	-	-	-	-	-	-	-	30048	-	30048	30048

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Figures rounded off.

* Reserves/Resources as on 1.4.2013.

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

Declared as minor mineral vide Gazette notification dated 10.02.2015.

Note: The proved and indicated balance recoverable reserves of coal bed methane (CBM) in the state as on 01.04.2015 were 28.91 billion cu m.

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

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	41462.92	33026.38	6559.47	81048.77
Raniganj	1538.19	466.56	31.55	2036.30
Jharia	15127.97	4302.09	-	19430.06
East Bokaro	3385.77	3903.71	863.32	8152.80
West Bokaro	3761.25	1308.71	33.66	5103.62
Ramgarh	756.11	742.08	58.05	1556.24
North Karanpura	9499.42	6914.61	1864.96	18278.99
South Karanpura	3230.09	1867.66	1480.22	6577.97
Aurangabad	352.05	2141.65	503.41	2997.11
Hutar	190.79	26.55	32.48	249.82
Daltongunj	83.86	60.10	-	143.96
Deogarh	326.24	73.60	-	399.84
Rajmahal	3211.18	11219.06	1691.82	16122.06

*Source: Coal Directory of India, 2014-15.***Production**

The value of mineral production (excludes atomic minerals and values for February and March in respect of 31 minerals declared as minor mineral vide Gazette notification dated 10.02.2015) in Jharkhand during 2014-15 at ₹ 21,837 crore decreased by 18% as compared to the previous year. The State ranked fifth and accounted for about 8% of the total value of mineral production of the country during 2014-15. Jharkhand was the sole producer of flint stone. Coal, the principal mineral produced in the State contributed 88% followed by iron ore with a share of 11% of the total value of mineral production. The important minerals produced in the State were coal, bauxite, copper ore and concentrates, gold, iron ore, manganese ore, dolomite, graphite, kaolin, limestone and quartz.

Among the important minerals, production of gold increased by 38% and coal by 10 percent. However, during 2014-15, the output of bauxite decreased by 11%, iron ore 15%, limestone 53%, copper ore 55% and copper concentrate by 57 percent as compared to the previous year (Table-4).

The value of production of minor minerals was estimated at ₹ 40 crore for the year 2014-15.

The number of reporting mines in Jharkhand during 2014-15 was 224 as against 234 in the previous year.

Mineral-based Industry

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

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

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Diamond							
Simdega	Part of Simdega district	-	700	-	-	195	G4 stage investigation to locate kimberlite/ lamproite bodies was taken up in parts of Simdega district. Reconnaissance mapping of an area of 700 sq km has been completed and 150 stream sediment samples were collected from suitable trap sites. Regional samples were collected from 4 th and 5 th order streams and detailed samples from 2 nd and 3 rd order streams. The samples were processed to get heavy mineral concentrate in two fractions, coarser between - 1.25 to 0.5 mm and finer between - 0.5 to 0.17 mm. Total 10 nos. of the heavy mineral concentrates were scanned and minerals which are suspected to be derived from the mantle were separated for further analysis. A total of 25 nos. of PS and 20 nos. of PCS were collected for studies. The investigation will be continued in FS 2015-16.
Gold							
Ranchi	Sindauri-Ghanashyampur area	-	-	4	-	-	G3 stage investigation was carried out within Dalma volcanics and Singhbhum Group metasedimentaries to assess their gold potentiality. The area exposes metasediments of Singhbhum Group, rocks of Chhotanagpur Gneissic Complex and volcanic rocks of Dalma Group. Four boreholes were drilled in this block. The rock types intersected in these boreholes were magnetite-quartz-biotite-sericite schist, phyllite, buff/grey quartzite, calc-quartzite/ferruginous quartzite, quartzofeldspathic phyllite, amphibolites of Upper Singhbhum Group. The sulphide mineralised zones intersected in boreholes comprise stringers of arsenopyrite, pyrrhotites, pyrite, chalcopyrite along with suspected gold grains. A number of mineralised zones have been delineated based on visual estimate of sulphides namely pyrite, arsenopyrite, pyrrhotite etc. (2-3%). The investigation is completed.
Saraikela-Kharsawan	Largadih and Largadih East block	-	-	-	-	-	G4 stage investigation was carried out for assessment of gold and REE-RM potentiality. The area exposes Dalma volcanics and metasedimentaries of Singhbhum Group. Gold mineralisation in Largadih area is hosted by sheared and brecciated quartz vein and is manifested by gossans, ferruginisation and brecciation on surface. The sulphide mineralised zones intersected in

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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		
							boreholes comprise dissemination and stringers of pyrite, arsenopyrite, chalcopyrite and sphalerite. Analytical results of core and trench samples, received so far, show Au values <50 ppb. Few mineralised zones have been delineated based on visual estimate of sulphides (2-3%). The investigation has been completed.
RM/REE							
Ranchi	Maheshpur- Kamta-Nawatoli- Jaratoli-Guridih area	-	-	-	-	-	G4 stage investigation was carried out to assess the REE and RM potentiality. Pegmatites of the area are both mixed and zoned type and have been recorded mostly around Chamghati, Rajadera, south of Nawagarh and Baijnath tata. The pegmatites are very coarse grained, at places sheared and show presence of spodumene, zinnwaldite, epidote, muscovite, tourmaline, garnet etc. The pegmatite bodies recorded in the study area are usually 3-5 m wide and 10-15 m long and are mostly aligned E-W though few discordant (NS to NNE-SSW) bodies are also recorded in the area. South of Nawagarh, thick laterite capping is developed which is good site for REE rich ion-adsorption clays. The analytical results received so far, show good value of Ga (22-41 ppm), Nb (<5-185 ppm), Rb (7-535 ppm), Sc (<5-33 ppm), Y (12-732 ppm) and Zr (9-581 ppm). The investigation will continue in FS 2015-16.
Titanium and Vanadium in Bauxite							
Gumla	Serangdag Plateau in Garna Hanrup-Kaprapat- Risapattoli-Kubertola area	-	-	10	417.45	-	G4 stage investigation was taken up to study potentiality of Ti & V in the bauxite. A total of 417.45 m drilling was completed in ten boreholes viz SRBH- 10 (part) to SRBH-19 in the assigned block. Surface and sub-surface data generated reveals that the top part contains thick and extensive in situ laterite capping (3-5 m) underlain by segregated boulders/pebbles and discontinuous lenses of bauxite with thick aluminous clay bands along with ferruginous/limonitic clay bands (24 m-39 m) followed by lithomargic clay. Analytical results of borehole samples received so far show TiO ₂ (0.01-21.36%), V ₂ O ₅ (0.01-0.49%) and Ga (7-113 ppm). Mineral phases identified for titanium occur as anatase and rutile. Other important phases present are kaolinite, gibbsite, goethite, sphene, quartz, biotite etc. Results of seven nos. of bed rock samples show slight enrichment in Ce (61.6-63.6 ppm in three samples) and Nd (46.3 ppm in

(Contd.)

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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		
							one sample). La ranges from 23.5-40.2 ppm and total REE value ranges from 107-178 ppm.
MECL Gold							
Ranchi	Parasi (East Block)	1:1000	0.5	19	3193	-	MECL carried out exploration for gold ore involving: mapping 0.50 sq km area on 1:1000 scale; drilling - 3,193 m in 19 boreholes; sampling & chemical analysis- 100 nos. primary, 133 nos. check & 51 nos. composite samples; fire assay - 2,574 nos.; petrographic studies - 50 nos.; mineragraphic studies - 50 nos.; specific determination - 60 nos. and estimation of 2.07 million tonnes of gold ore with 1.26 g/t Au at 0.50 g/t Au cut off & 1.06 million tonnes with 1.89 g/t Au at 1.00 g/t Au cut off under 332 & 333 categories.
West Singh- bhum	Pahardia Gold Prospect	1:1000	01	13	2527	-	Exploration for gold are conducted by mapping - 1.00 sq km area on 1:1000 scale; drilling - 2,527 m in 13 boreholes; sampling & chemical analysis - 1,247 nos primary samples for five assay for Au, 50 nos. for three radicals, 60 nos. check samples & 39 nos. composite samples; petrographic studies - 30 nos.; mineragraphic studies - 30 nos.; specific gravimetric determination - 40 nos.; beneficiation study of one bulk samples and estimation of 1.16 million tonnes gold ore with average grade of 2.12 g/t Au at 0.50 g/t cut off & 0.58 million tonnes gold ore with average 3.60 g/t Au at 1 g/t Au cut off (331&332).
State Directorate of Geology & Mining							
Building Stone							
Deoghar	Devipur Block	1:25000	124	-	-	-	A total 32 nos of stone deposits with 178.31 million cu m reserves have been identified.
Coal							
Latehar	Banhordi	1:4000	10.57	66	35298	-	Block is allotted to JUUNL. Special tests are being carried out by CIMFR.
Graphite							
Palamu	Dhangaon, Sons, and Koiri Patra areas	1:25000 1:4000	50 1.1	-	-	27	Total 46 cu m pitting/trenching have been done and analysis have shown 6-27% fixed carbon. Resources estimated at 1.19 million tonnes (G-4).
Limestone							
Ramgarh	Haribandhi and areas between Gola and saturi	1:25000 1:4000	10.25 02	-	-	135	Limestone samples analysed as CaO:35.84-52.64%, SiO ₂ : 4.64 - 32.70% and MgO:< 4 percent.
-do-	North of Beecha Sutharpur and nearby areas	1:4000	01	-	-	45	Limestone samples analysed as CaO : 36.40 - 47.60%, SiO ₂ : 11.51-30.54% and MgO: 0.8-10 percent.

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Table - 3 (Concl.d.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Iron Ore							
West Singh- bhum	Karampada and Kiriburu (Bhangaon)	1:25000 1:4000	25 1.57	-	-	35	DMG carried out exploration for iron ore in the areas near Karampada and Kiriburu (Bhangaon). Exploration activities include geological mapping on 1:25000 and 1:4000 scale in 25 sq km and 1.57 sq km areas, respectively; analysis of 35 nos. samples have shown Fe content from 50.26% to 65.34 percent and estimation of 40 million tonnes (334) iron ore.
Saraikela- Kharswan	Lowadih & Tirildih area	1:25000 1:4000	40.5 0.5	-	-	28	DMG carried out exploration for iron ore in the areas near Lowadih and Tirildih area: geological mapping on 1:25000 and 1:4000 scale in 40.50 sq km and 0.50 sq km areas, respectively. Collection of 28 nos. samples and analysis of samples have shown Fe content between 47-55 percent. Occurrences of manganese ore are also located in this area.
Manganese							
West Singh- bhum	Babriya and Pukhariya	1:4000	1.77	-	-	18	DMG carried out the exploration for manganese ore in area; geological mapping on 1:4000 scale in 1.77 sq km area and 18 nos. samples were also collected.
-do-	Hesapi- Halmatburu area	1:25000 1:4000	10 1.79	-	-	25	DMG carried out the exploration for manganese ore in the area; geological mapping on 1:25000 and 1:4000 scales in 10 sq km & 1.79 sq km areas, respectively; collection of 25 nos. samples and chemical analysis of samples have shown 22-30% Mn content.
Precious Minerals (Beryl/Emerald)							
East Singh- bhum	Hariyan, Barun- muti and Chandriburu areas	1:25000	4	-	-	6	DMG conducted the exploration for precious minerals (beryl/emerald) in the area by geological mapping on 1:25000 scale in 4 sq km area and 6 nos. samples were also collected. Occurrences of emerald is associated with pegmatite and biotite schist.
Quartz & Feldspar							
Deoghar	Bhainsia Pahari, Devipur Block	1:25000 1:4000	124 0.96	-	-	76	Quartz samples are analysed with 97-98 % silica. Resource estimated at 51.68 million cu m.

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

(Value in ₹ '000)

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		293		199970583	234		267708722	224		218365103
Coal	'000t	176	111300	175665400	152	113100	240509800	152	124100	193135100
Bauxite	t	31	1977575	939283	19	2282428	1302079	23	2040519	1039554
Copper Ore	t	-	398537	-	-	398537	-	-	180496	-
Copper Conc.	t	2	12769	428481	2	13742	475046	2	5902	198641
Gold Ore	t	-	3770	-	-	7552	-	-	4232	-
Gold	kg	1	5	14548	1	8	22728	1	11	30839
Iron Ore	'000t	15	17986	21410899	23	22624	23912896	22	19173	23024755
Manganese Ore	t	5	4266	25150	5	4779	20276	4	4449	18592
Silver	kg	-	-	-	-	-	-	-	-	-
Dolomite [#]	t	1	301185	434008	1	267146	384957	1	135319	194994
Felspar [#]	t	4	6525	1693	2	7462	2499	1	3252	714
Fireclay [#]	t	7	111594	17151	1	3655	329	-	-	-
Flint Stone	t	2	633	192	2	459	136	2	294	59
Graphite (r.o.m.)	t	10	55855	26636	6	43716	20203	3	41423	22034
Kaolin [#]	t	6	66235	31363	2	600	119	1	70623	17655
Kyanite	t	1	1015	1204	-	-	-	-	-	-
Limestone	'000t	13	1861	517771	8	1678	646546	8	792	277778
Mica [#] (waste & scrap)*	t	-	782	-	-	2110	-	-	-	-
Pyroxenite [#]	t	4	58562	17980	2	2985	806	-	-	-
Quartz [#]	t	11	42474	8566	7	32633	8418	3	14730	2940
Quartzite [#]	t	2	30771	7307	1	1981	436	1	-	-
Silica Sand [#]	t	1	81088	20971	-	-	-	-	-	-
Talc/soapstone steatite [#]	t	1	1400	532	-	-	-	-	-	-
Minor Minerals [@]		-	-	401448	-	-	401448	-	-	401448

Note: The number of mines excludes minor minerals.

* Includes mine waste obtained while dressing of crude mica.

@ 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 Jharkhand**

Industry/plant	Capacity ('000 tpy)
Alumina	
Hindalco Industries Ltd, Muri.	450
Asbestos Products	
Hyderabad Industries Ltd, Jasidih, Distt. Deogarh.	60
Cement	
ACC Ltd, Chaibasa, Distt. Singhbhum.	870
ACC Ltd, Sindri, Distt. Dhanbad (G).	900

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Bokaro Cement Plant (formerly JV of Jaypee Cement & SAIL), Bokaro (G). Lafarge, Jojobera, Distt. Singhbhum.	2100 4600
Ceramic	
Bihar Industrial Corp. Ltd, Madhupur, Distt. Deoghar.	0.48
Maithan Ceramics Pvt. Ltd, Dhanbad.	NA
Chemicals	
Bihar Caustic & Chemicals Ltd, Garhwa Road, Distt. Palamu.	92.75 (caustic soda lye)

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Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Copper Smelter	
HCL, ICC, Ghatsila,	20.5 (copper smelting)
Distt. Singhbhum (East).	18.5 (copper cathode)
	84 (fabricated wire bar)
	54 (H ₂ SO ₄), 390 t (NiSO ₄)
	480 kg (CuSO ₄)
	14.6 kg (selenium)
	9868 kg (Ag), 698 kg (Au)
Iron & Steel	
Bokaro Steel Plant, Bokaro.	6900 (sinter)
	4585 (pig iron)
	4360 (Crude/liquid steel)
	35.5 (H ₂ SO ₄)
	27.2 (ammonium sulphate)
Tata Steel Ltd, Jamshedpur.	6000 (pellets)
	7700 (sinter)
	9700 (Crude/liquid steel)
Usha Martin Ltd, Jamshedpur.	500 (Sponge iron)
	1200 (pellets)
	715 (sinter)
Orissa Manganese & Minerals Ltd, Kandra, Sarai Kharsawan.	1200 (pellets)
Pig Iron	
Usha Martin Industries, Jamshedpur.	110
Sponge Iron	
Ashirwad Steel & Industries Ltd, Gamharia, Jamshedpur.	30
Bihar Sponge Iron Ltd, Chandil, Distt. Saraikela-Kharsawan.	210
Brahmaputra Metallics Limited, Kanta, Gola, Distt. Ramgarh.	105
Jai Durga Iron Pvt. Ltd, Jhumari Telaiya, Distt. Koderma.	36

(Contd.)

Table - 5 (Concl.)

Industry/plant	Capacity ('000 tpy)
Zoom Vallabh Steels Ltd, Dugdha, Distt. Saraikela-Kharsawan.	120
Ferro Alloys	
Anjaney Ferro Alloys Ltd, Mihijam.	12
Gautam Ferro Alloys Ltd.	5.5
Tin Plates	
The Tin Plate Co. of India Ltd, Jamshedpur.	379
Glass	
IAG Co. Ltd, Bhandainagar.	66.8
Refractory	
Allied Refractories (P) Ltd, Amaghata.	7.2
SAIL Refractory Unit (formerly Bharat Refractories Ltd), Ranchi Road, Ramgarh.	7.5
SAIL Refractory Unit (formerly Bharat Refractories Ltd), IFICO, Ramgarh.	4.2
SAIL Refractory Unit (formerly Bharat Refractories Ltd), Bhandaridah, Distt. Bokaro.	2.6
Jharia Firebricks Pottery Works (P) Ltd, Dhansar, Distt. Dhanbad.	20
Mineral & Chemical Products, Kendposi, Distt. West Singhbhum.	1.5 (calcined china clay)
Raj Refractory (P) Ltd, Hardag, Distt. Ranchi.	6

*G; Grinding Unit**Note:* Data, for Cement Industries on respective websites, is taken from Survey of Cement Industry & Directory, 2015.

