

STATE REVIEWS



Indian Minerals Yearbook 2018

(Part- I)

57th Edition

**STATE REVIEWS
(Madhya Pradesh)**

(FINAL RELEASE)

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

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MADHYA PRADESH

Mineral Resources

Madhya Pradesh is the only diamond producing State in the country and is the leading producer of copper conc., diaspore, pyrophyllite, manganese ore, limestone and clay (others). The State hosts the country's 90% diamond, 74% diaspore, 55% laterite, 48% pyrophyllite, 41% molybdenum, 27% dolomite, 19% copper ore, 18% fireclay, 12% manganese and 8% rock phosphate ore resources.

Important mineral occurrences in the State are: **bauxite** in Balaghat, Guna, Jabalpur, Katni, Mandla, Rewa, Satna, Shahdol, Shivpuri, Sidhi & Vidisha districts; **calcite** in Barwani, Jhabua, Khandwa & Khargone districts; **china clay** in Betul, Chhatarpur, Chhindwara, Gwalior, Hoshangabad, Jabalpur, Khargone, Narsinghpur, Raisen, Satna, Shahdol & Sidhi districts; **copper** in Balaghat, Betul & Jabalpur districts; **coal** in Betul, Shahdol & Sidhi districts; **diamond** in Panna district; **diaspore & pyrophyllite** in Chhatarpur, Shivpuri & Tikamgarh districts; **dolomite** in Balaghat, Chhindwara, Damoh, Dewas, Harda, Hoshangabad, Jabalpur, Jhabua, Katni, Mandla, Narsinghpur, Sagar and Seoni districts; **fireclay** in Betul, Chhindwara, Jabalpur, Katni, Narsinghpur, Panna, Sagar, Shahdol & Sidhi districts; **iron ore (haematite)** in Betul, Gwalior, Jabalpur & Katni districts; **limestone** in Balaghat, Chhindwara, Damoh, Dhar, Hoshangabad, Jabalpur, Jhabua, Khargone, Katni, Mandsaar, Morena, Narsinghpur, Neemach, Rewa, Sagar, Satna, Sehore, Shahdol & Sidhi districts;

manganese ore in Balaghat and Jhabua districts; **ochre** in Dhar, Gwalior, Jabalpur, Katni, Mandla, Rewa, Satna, Shahdol & Umaria districts; **pyrophyllite** in Chhatarpur, Sagar, Shivpuri & Tikamgarh districts; **quartz/silica sand** in Balaghat, Dewas, Dhar, Jabalpur, Khandwa, Khargone, Morena, Rewa & Shahdol districts; **talc/steatite/soapstone** in Dhar, Jabalpur, Jhabua, Katni, Narsinghpur & Sagar districts and **vermiculite** in Jhabua district.

Other minerals that occur in the State are: **barytes** in Dewas, Dhar, Shivpuri, Sidhi & Tikamgarh districts; **calcareous shales** (used in slate pencil) in Mandsaar district; **felspar** in Jabalpur & Shahdol districts; **fuller's earth** in Mandla district; **gold** in Jabalpur and Sidhi districts; **granite** in Betul, Chhatarpur, Chhindwara, Datia, Jhabua, Panna, Seoni & Shivpuri districts; **graphite** in Betul & Sidhi districts; **gypsum** in Shahdol district; **lead-zinc** in Betul district; **molybdenum** in Balaghat district; **potash** in Panna district; **quartzite** in Sehore district; **rock phosphate** in Chhatarpur, Jhabua & Sagar districts; and **sillimanite** in Sidhi district (Table - 1). The reserves/resources of coal along with various coalfields in Madhya Pradesh are given in Table - 2.

Exploration & Development

The details of exploration activities conducted by GSI for base metal, iron ore, gold & coal and other various agencies during 2017-18 are furnished in Table - 3.

During 2017-18, National Oil Companies (NOC) continued their operations for exploration of oil and gas in the State.

Table – 1 : Reserves/Resources of Minerals as on 1.4.2015: Madhya Pradesh

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						
Barytes	tonne	-	-	-	-	18500	4472	-	35000	233940	-	291912	291912	
Bauxite	'000 tonnes	11979	3313	8299	23591	12566	6013	11061	54484	50590	-	149797	173388	
Calcite [#]	tonne	-	-	5175	215327	35077	160421	20250	180226	358636	97476	1067412	1072587	
China clay [#]	'000 tonnes	357	474	902	1733	2882	3774	621	415	12017	-	20115	21848	
Copper														
Ore	'000 tonnes	141950	-	12580	154530	17400	-	31560	550	79389	-	128899	283429	
Metal	'000 tonnes	1887.93	-	148.44	2036.37	189.66	-	320.84	4.13	867.5	-	1382.13	3418.5	
Diamond	carat	959500	-	159	959659	-	-	104118	-	27645359	-	27749477	28709136	
Diaspore [#]	tonne	2380710	341047	2814601	5536358	96241	460808	13696	109792	810667	46068	2025365	7561723	
Dolomite [#]	'000 tonnes	23765	10078	18714	52557	33685	102857	33030	295222	1584534	114799	2258839	2311395	
Felspar [#]	tonne	-	-	-	10330	-	6610	-	-	339851	-	356791	356791	
Fireclay [#]	'000 tonnes	390	4192	3020	7603	2139	4975	1551	2129	100977	100	119036	126639	
Fullers Earth [#]	tonne	-	-	-	-	-	-	-	-	117200	-	117200	117200	
Gold														
Ore														
(Primary)	tonne	-	-	-	-	-	-	-	5841000	1947000	-	7788000	7788000	
Metal														
(Primary)	tonne	-	-	-	-	-	-	-	6.18	2.22	-	8.4	8.4	
Granite [#]														
(Dimen Stone)	'000 cum	-	160	-	160	-	-	-	-	1885924	108000	1993924	1994084	
Graphite	tonne	-	-	-	-	-	-	-	-	3456660	2280000	5736660	5736660	
Gypsum [#]	'000 tonnes	-	-	-	-	-	-	-	-	69	-	69	69	
Iron Ore														
(Haematite)	'000 tonnes	44203	3635	14225	62063	48412	36774	23243	9008	146803	10	267900	329963	
Laterite [#]	'000 tonnes	12534	3355	7917	23807	8715	16077	3189	1519	167527	169678	368336	392143	
Lead-Zinc														
Ore	'000 tonnes	-	-	-	129	117	-	1510	4006	5930	3150	14841	14841	
Lead Metal	'000 tonnes	-	-	-	-	-	-	26.12	5.13	5.04	-	36.29	36.29	
Zinc Metal	'000 tonnes	-	-	-	5.2	4.71	-	114.76	41.93	186.02	101.12	453.74	453.74	
Limestone	'000 tonnes	816293	1093490	545321	2455103	419938	498590	566011	830331	4045838	269859	6886754	9341858	
Manganese Ore	'000 tonnes	20227	6760	2904	29891	5802	6421	325	10481	2015	-	27823	57713	
Marble [#]	'000 tonnes	-	-	4551	4551	-	-	-	-	-	-	-	4551	

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Table – 1 (Concid)

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						
Molybdenum														
Ore	tonne	-	-	-	-	-	-	-	-	8000000	-	8000000	8000000	
Contained														
MoS ₂	tonne	-	-	-	-	-	-	-	-	5020	-	5020	5020	
Ochre [#]	tonne	1605342	194757	1895247	3695346	681904	1653225	5402710	356344	2577575	749250	15153150	18848495	
Potash	Million tonnes	-	-	-	-	-	-	-	-	1206	-	1206	1206	
Pyrophyllite [#]	tonne	9786485	2242501	1907116	13936102	1860354	2976581	2738198	520801	3294772	248405	14623211	28559313	
Quartzite [#]	'000 tonnes	-	-	-	-	-	-	-	-	832	-	832	832	
Quartz-														
Silica Sand [#]	'000 tonnes	129	30	1781	1940	516	-	920	791	316	-	5261	7201	
Rock														
Phosphate	tonne	5999399	5179	1492370	7496948	6460616	14981336	15702042	-	2730000	10629258	50625	50553877	
Shale [#]	'000 tonnes	55	9	2	66	295	-	1459	-	33	-	1787	1853	
Sillimanite	tonne	-	-	-	-	-	-	-	-	0	101600	101600	101600	
Silver														
Ore	tonne	-	-	-	-	-	-	-	-	2096000	1120000	-	3216000	
Metal	tonne	-	-	-	-	-	-	-	-	150.61	9.25	-	159.86	
Talc-Steatite-														
Soapstone [#]	'000 tonnes	185	20	79	283	179	378	1609	-	1679	6107	-	9952	
Vermiculite	tonne	-	-	-	-	197	-	66	-	66	-	-	329	

Figures Rounded off

Note: The proved and indicated balance recoverable reserves/resources of coal bed methane (CBM) in the State as on 01.04.2018 were 218.04 billion cu m (BCM)
Declared as Minor Mineral vide Gazette Notification dated 10.02.2015

Minor Mineral before Gazette Notification dated 10.02.2015

STATE REVIEWS

Table – 2 : Reserves/Resources of Coal as on 1.4.2018 : Madhya Pradesh

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	11958.28	12153.95	3874.67	27986.70
Johilla	185.08	104.09	32.83	322.00
Umaria	177.70	3.59	–	181.29
Pench-Kanhan	1476.88	970.34	982.21	3429.23
Pathakhera	290.80	88.13	68.00	446.93
Gurgunda	–	84.92	53.39	138.31
Mohpani	7.83	–	–	7.83
Sohagpur	2129.18	5503.20	293.47	7925.85
Singrauli	7690.81	5399.68	2444.77	15535.26

*Source: Coal Directory of India, 2017-18.***Table – 3 : Details of Exploration Activities in Madhya Pradesh, 2017- 18**

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Basemetal							
Betul	Kehalpur (east) block	-	-	9	1284.75	-	During G3 level preliminary exploration for basemetal (Zn) mineralisation, a total of 9 boreholes were drilled to a cumulative depth of 1284.75 m. All boreholes intersected the sulphide mineralisation except two. At 1% Zn cutoff, only one borehole MPBBK-07 could intersect a 4.77 m wide Zn zone with average 1.065% Zn. However, at 0.5% Zn cut-off, the borehole MPBBK-01 reveals presence of a 5.15 m wide Zn zone with 0.542% average zinc and borehole MPBBK-04 indicates 4.01 m wide Zn zone with 0.503% average Zn. The borehole MPBBK-05 reveals 3.12 m and 17.40 m wide Zn zones with 0.569% and 0.502% average Zn respectively and borehole MPBBK-07 indicates 12.30 m and 6.00 m wide Zn zones with 0.549% and 0.514% average Zn respectively at 0.5% Zn cut-off.
Iron ore							
Sidhi	Mahakoshal belt	1:12500 1:4000	100 2	6 -	1025.6 -	- -	Reconnaissance survey for low grade iron ore was taken up in this belt. In Gandhigram, Parakhuri, Chauphal & Baheraha area, large scale mapping of 100 sq km on 1:12500 scale and detailed mapping of 2 sq. km on 1:4000 scale was completed. The

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STATE REVIEWS

Table – 3 (Contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							<p>different lithologies identified were intrusives, BIF/BHQ/BJQ, phyllite bearing andalusite and biotite, chlorite schist/ talc chlorite schist/ chlorite-biotite schist and patch of dolomite. Jungel group of rocks was also mapped overlying the Mahakoshal group of rocks and represented by purple shale/ phyllite and quartzite with pebbly horizon. During the survey, total 220 nos BRS, 100 nos PTS, 25 nos PS and 10 nos. OM and channel samples were collected for study. In Kochita-Bhatha-Pokhra-Bharuhi areas, four bands of BIF have been identified in the mapped area in which 1st and 3rd bands are continuous and have strike extension of about 10 km with average thickness of 5 m, at places around 50 m. Another two bands of BIF have been noticed with thinly laminated iron bands intercalated with phyllite, quartzite and chert layers. The cumulative thickness of each band varies from 10 m to 50 m. The composition of iron layer is mostly hematite. Proto-ore is predominant and observed throughout the study area. The chemical analysis of 35 BRS indicate content of Fe₂O₃ varies from 6.51 to 81.25%. During preliminary exploration for iron ore mineralisation in Dhaurra - Urdaurra block of Bundelkhand gneissic complex in Tikamgarh district, a total 10 boreholes were drilled to a total meterage of 1,226 m. Among them 8 nos of boreholes were planned as 1st level boreholes at 50 m vertical depth with 200 m borhole spacing and two 2nd level boreholes were drilled at 100 m vertical depth. Specks of sulphides mainly pyrite and minor chalcopyrite and pyrrhotite are seen along these veins. The true thickness of ore body intersected in the boreholes varies from 15.40 to 70.84 m. The grade of iron ore visually estimated varies from 35 to 55% Fe.</p>

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STATE REVIEWS

Table – 3 (Contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Manganese							
Balaghat	Gudma block	-	-	7	1009.7	55	Preliminary exploration of manganese mineralisation in this block was carried out which involved drilling of 7 boreholes to a cumulative depth of 1009.7 m and collection of 20 BRS, 10 samples each for PS and PCS, 10 nos of samples for REE and 5 nos of samples for XRF. A total of 5.74 m ore horizon including manganese quartzite was intersected. The thickness of ore horizon varies from 0.25 m to 1.38 m. It was seen that though the ore horizon is persisting there is decrease in width of ore body in strike continuity in western direction and as well as in dip direction. In Jabalpur and Katni districts, reconnaissance survey for manganese ore was taken up in Tola Block, Sihora and Dheemarkhera Tehsil. Detailed geological mapping on 1:4000 scale for 2 sq. km area and 10 Line km of geophysical survey was taken up. The main rock types in the area are banded quartzite, cherty quartzite, brecciated jasper quartzite which occurs as detached and isolated bodies dotted around Tola-Gada Itwa area that is largely covered by laterite, soil and alluvium. A total of nine trenches and thirteen numbers of test pits were carried out.
Molybdenum							
Chhatarpur	Sandna- Garha area	1:12500 1:5000	100 0.5	- -	- -	250 -	Reconnaissance survey for molybdenum and related sulphide mineralisation was carried out in Bundelkhand granitic complex (BGC) in Sandna- Garha area. Molybdenum and related sulphide mineralisation indications have been seen in migmatite, non-porphyrific, pink granite, quartz veins/ reefs and pegmatites. Molybdenite mineralisation is characterised by studded orange yellow hallows. Indication of sulphide mineralisation in the form of specks of chalcopyrite, pyrite, malachite and azurite was noticed in fractures planes.

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STATE REVIEWS

Table – 3 (Contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq. km)	No. of boreholes	Meterage		
Gold							
Sidhi	Thapna-Garhor Baghara area	1:12500	100	-	-	150	Reconnaissance Survey of Gold and associated sulphide mineralisation was taken up in mafic/ ultramafic rocks in Thapna-Garhor-Baghara area. Large scale mapping of 100 sq. km on 1:12500 scale revealed the presence of phyllites, ferruginous quartzite, banded iron formation (BIF) with ferruginous chert, chert breccia, dolomite, metabasics, mafic and ultramafic rocks and conglomerate, sandstone and porcellanite unit. Mafic/ ultramafic rocks are fine to coarse grained, meso-melanocratic in nature and show some evidences of sulphide mineralisation in the form of pyrite and chalcopyrite specks. The regional trend of rocks is E-W to ENE-WSW direction with south-easterly dip direction. The BIF bands are characterised by laminations of hematite and/or magnetite alternate with quartzite and chert bands. Collected 150 samples from study area. PTS samples were also collected and sent for analysis.
Limestone and Gauconitic shale							
Singrauli	Barhat block, Chitrangi Tehsil	-	-	-	-	-	G3 stage preliminary investigation for glauconitic shale/sandstone was carried out in the area under study. Mapping of area unveiled the presence of sandstone, limestone and glauconitic shale. The maximum thickness of the glauconite shale is up to 5 m and minimum varies from 15 to 16 cm. Three bands were traced along with thin limestone intercalations. Fawn limestone is underlain by bluish-green colour glauconitic shale, which is well exposed all along the strike length.
Graphite							
Betul	Golighat – Junawani -Borgaon and Rathipur-Chikhli- Bhopali areas	1:12500	102.0	-	-	-	During G4 stage reconnaissance survey for graphite in Golighat-Junawani-Borgaon and Rathipur-Chikhli-Bhopali areas, three graphite bands in Golighat-Junawani-Borgaon area (Block-I) and three graphitic schist bands in Rathipur-Chikhli-Bhopali area (Block-II) were delineated. Near Golighat village a graphite schist band occurs as lensoidal body within the granite

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STATE REVIEWS

Table– 3 (Concl'd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq. km)	No. of boreholes	Meterage		
CMPDI Coal	-	-	-	-	-	-	gneiss. The fixed carbon (FC) values ranges from 3.49% to 18.14%. Another graphite schist band, is noticed in the southeast of Makra village. In Rathipur-Chikhli-Bhopali area, three graphitic schist bands area delineated. A graphitic band (Band-I) with micaceous and phyllitic partings is exposed near Baba Mandir for a strike length of about 1.2 to 1.35 km with thickness varying from 4 to 12 m. The average fixed carbon value recorded in this band-I is 7%-8%. Another graphitic band (Band-II) is exposed SW of Bhopali and extends for a strike length of about 1.7 to 1.8 km with average value of fixed carbon varying from 6% to 8%. One more graphitic band (Band-III) exposed for about 3.5 km to 4 km in SW of Bhopali have recorded average fixed carbon value of 9%. CMPDI deployed its departmental resources for detailed exploration of CIL/Non-CIL blocks; whereas State Governments of Madhya Pradesh and Odisha deployed resources in CIL blocks only. Besides, eight other contractual agencies have also deployed resources for detailed drilling/exploration in CIL/Non-CIL blocks.

Production

Madhya Pradesh was the sole producer of diamond. The value of minor mineral's production is estimated as ` 1,097 crore for the year 2017-18. there were 223 reporting mines in 2017-18 in case of MCDR Minerals (Table-4).

Mineral-based Industry

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

STATE REVIEWS

**Table – 4 : Mineral Production in Madhya Pradesh, 2015-16 to 2017-18
(Excluding Atomic Minerals)**

(Value in ` '000)

Mineral	Unit	2015-16			2016-17			2017-18 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value ^{\$}
All Minerals		210		29116636	219		29111391	223		32378576
Coal	'000 t		107714	-	-	105013	-	-	112127	-
Bauxite	t	22	684288	479401	20	676478	543776	18	581391	454848
Copper ore	t	-	2536580	-	-	2415330	-	-	2339035	-
Copper conc.	t	1	79281	3315629	1	68187	3128301	1	75479	3522250
Iron ore	'000 t	19	2447	1475651	17	1771	767339	15	2679	1265424
Manganese ore	t	45	766776	3334907	48	650316	4532518	41	831348	6840494
Phosphorite	t	3	66260	55602	4	149700	129033	4	113303	98920
Diamond	crt	2	36044	621441	2	36491	639562	2	39699	410737
Limestone	'000 t	118	39430	8868182	127	36164	8405039	142	42744	8820080
Minor Minerals [@]		-	-	10965823	-	-	10965823	-	-	10965823

Note: The number of mines excludes Fuel Minerals and Minor Minerals.

@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.

\$ Excludes Fuel Minerals.

**Table – 5 : Principal Mineral-based Industries in
Madhya Pradesh**

Industry/plant	Capacity (`000 tpy)
Aluminium/Alumina	
Hindalco Industries Ltd, Mahan Aluminium, Bargwan, Distt Singrauli.	360 (Aluminium)
Asbestos Products	
Everest Building Products Ltd, Kymore.	NA
Kalani Industries Pvt. Ltd, Pitampur, Dhar.	NA
Ramco Industries Ltd, Maksi, Distt Shajapur.	NA
Cement	
ACC Ltd, Kymore, Distt Katni.	2200
Birla Corpn. Ltd (Satna Cement Works & Birla Vikas Cement), Satna.	2200
CCI Ltd, Nayagaon, Distt Neemuch.	400
Heidelberg Cement (I) Ltd, Narsingarh, Distt Damoh	1030
Jaiprakash Power Ventures, Singrauli (G).	2000
Jaypee Rewa Cement Plant, Distt Rewa.	3000

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Table-5 (Contd)

Industry/plant	Capacity (`000 tpy)
Jaypee Bela Cement Plant, Distt Rewa.	2600
Jaypee Cement, Sidhee.	2300
KJS Cement, Rajnagar, Distt Satna.	960
Maihar Cement, Maihar, Distt Satna.	4200
Prism Cement Ltd (Unit I & II), Satna.	5600
Reliance Cement Pvt Ltd, Maihar, Distt Satna.	3000
Ultratech Cement, Vikram Cement Plant, Khor, Distt Neemuch.	3000
Ceramic	
Roca Bathroom Products Ltd, Dewas.	NA
Govind Tiles Pvt Ltd, Garra, Distt Balaghat.	NA
Fertilizer	
Agro Phos. (India) Ltd, Dewas.	45 (SSP)
Arihant Fert. & Chems. India Ltd, Kanawati, Neemuch.	66 (SSP)

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STATE REVIEWS

Table-5 (Contd)

Industry/plant	Capacity ('000 tpy)
Basant Agro Tech (India) Ltd, Jawad, Neemuch.	45 (SSP)
Coromandel International Ltd (Formerly Liberty Urvarak Ltd), Nirmani Khargone.	100 (SSP)
Indra Industries Ltd (Formerly Swastik Ferts & Chems Ltd), Indore, Dhar.	66 (SSP)
KMN Chemicals & Fertilizers Ltd, Diwanganj, Raisen.	60 (SSP)
Khaitan Chemical & Fertilizers Ltd, Nimrani, Distt Khargone.	400 (SSP) 115.5 (H ₂ SO ₄)
NFL, Vijaipur (Unit I & II), Distt Guna.	2066.1 (Urea)
Krishna Phoschem Ltd, Meghnagar, Jhabua.	120 (SSP)
Madhya Bharat Agro Products Ltd, Rajoa, Sagar.	60 (SSP)
Madhya Bharat Phosphate Pvt. Ltd (Unit I), Diwanganj, Sanchi, Raisen.	132 (SSP)
Madhya Bharat Phosphate Pvt. Ltd (Unit II), Meghnagar, Jhabua.	165 (SSP)
Mexican Agro Chemical Ltd (Formerly Asha Phosphates Ltd), Jaggakhedi, Mandsaur	60 (SSP)

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Table-5 (Concl'd)

Industry/plant	Capacity ('000 tpy)
Mukteswar Fertilizers Ltd, Narayankhedi, Ujjain.	60 (SSP)
Rama Phosphates Ltd, Indore.	165 (SSP)
Suman Phosphates and Chemicals Ltd, Indore.	330 (SSP)
Varun Fertilizers Pvt. Ltd, Dewas.	100 (SSP)
Ferro-alloys	
Crescent Alloys Pvt. Ltd, Seoni.	4.5
Jalan Ispat Castings Ltd, Meghnagar, Distt Jhabua.	12
MOIL Ferro Manganese Plant, Bharveli, Distt Balaghat.	10
Petroleum Refinery	
Bharat Oman Refineries Ltd, Bina, Distt Sagar.	6000
Refractory	
ACC Refractories, Katni.	65
Premier Refractories India Pvt. Ltd, Katni.	12.9

G; Grinding Unit

Note: Data not readily available for fertilizer and cement industries on respective websites, is therefore taken from Indian Fertilizer Scenario /FAI Statistics and Survey of Cement Industry & Directory respectively.