

STATE REVIEWS



Indian Minerals Yearbook 2015 (Part- I)

54th Edition

**STATE REVIEWS
(Uttar Pradesh)**

(FINAL RELEASE)

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

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648

E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

July, 2017

UTTAR PRADESH

Mineral Resources

The State is the principal holder of country's andalusite & diaspore resources and possesses 78% andalusite, 37% diaspore, 17% sillimanite and 10% pyrophyllite. Important minerals occurring in the State are: **coal** in Singrauli coalfields, Sonbhadra district; and **diaspore & pyrophyllite** in Hamirpur, Jhansi, Lalitpur and Mahoba districts. Naini area of Allahabad district contains high quality **silica sand**, an important source of glass sand, containing 98% SiO₂ and a very low Fe₂O₃ is found in Shankargarh, Lohargarh in Allahabad district and also Bargarh in Banda district. Silica sand is also found in Aligarh and Chitrakoot districts.

Other minerals that occur in the State are **andalusite** and **calcite** in Mirzapur district; **bauxite** in Banda, Varanasi & Lalitpur districts; **china clay & dolomite** in Banda and Sonbhadra districts; **felspar** in Jhansi district; **fireclay, limestone, potash & sillimanite** in Sonbhadra district; **ochre** in Banda district; **granite** in Banda, Hamirpur, Lalitpur & Mahoba districts; **iron ore (haematite)** and **rock phosphate** in Lalitpur district (Table -1). The reserves/resources of coal along with details of coalfield are provided in Table-2.

Exploration & Development

During 2014-15, National Oil Companies (NOC) continued their operations for exploration of oil and gas in the State. GSI also carried out exploration in various districts of Uttar Pradesh

and the details of exploration carried out in the State are furnished in Table-3.

Production

The value of mineral production (excludes atomic minerals and value for the month of February and March in respect of 31 minerals declared as minor mineral vide Gazette Notification dated 10.02.2015) in Uttar Pradesh at ₹ 7,043 crore in 2014-15 decreased 5% as compared to previous year. Coal accounted for 23% of the total value of mineral production in the state. Uttar Pradesh was the leading producer of diaspore and second leading producer of pyrophyllite with 61% and 17% contribution to the total output of respective minerals in the country.

Among the important minerals, output of coal and sulphur increased by 2% and 38% respectively, while the decrease in output of diaspore by 8%, limestone 6%, pyrophyllite 2% and quartz 94% was observed during the year under review. No production of silica sand was reported during 2014-15 (Table - 4).

The value of production of minor minerals was estimated at ₹ 5,373 crore for the year 2014-15.

The number of reporting mines in Uttar Pradesh was 17 as against 19 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 -2 : Reserves/Resources of Coal as on 1.4.2015 : Uttar Pradesh

(In million tonnes)				
Coalfield	Proved	Indicated	Inferred	Total
Total/Singrauli	884.04	177.76	-	1061.80

Source: Coal Directory of India, 2014-15.

Table – 1 : Reserves/Resources of Minerals as on 1.4.2010/1.4.2013* : Uttar Pradesh

Mineral	Unit	Reserves				Remaining Resources						Total Resources (A+B)		
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333		Reconnaissance STD334	Total (B)
			STD121	STD122			STD221	STD222						
Andalusite	'000 tonnes	-	-	-	-	-	-	-	-	14450	-	14450	14450	
Bauxite*	'000 tonnes	-	-	-	-	-	-	10390	500	8018	-	18908	18908	
Calcite#	tonne	-	-	-	-	-	-	-	-	11000	-	11000	11000	
China clay#	'000 tonnes	-	-	-	-	-	-	11600	3447	10018	-	25065	25065	
Diaspore#	tonne	750078	543478	109215	1402771	136057	328230	545	-	224183	-	827921	2230692	
Dolomite*#	'000 tonnes	-	-	-	-	-	12622	3500	-	66230	-	82352	82352	
Felspar#	tonne	-	-	-	-	-	-	-	-	200000	-	200000	200000	
Fireclay#	'000 tonnes	-	-	-	-	-	-	-	-	3221	-	3221	3221	
Granite (Dim. stone)	'000 cu m	-	-	-	-	-	-	-	-	494819	-	494819	494819	
Iron ore*														
(Haematite)	'000 tonnes	-	-	-	-	-	-	-	-	38000	-	38000	38000	
Limestone	'000 tonnes	-	-	-	45130	135590	21050	142763	40000	31200	-	415733	415733	
Ochre#	tonne	-	-	-	-	-	-	25000	35000	10000	-	70000	70000	
Potash million tonnes		-	-	-	-	-	-	-	-	190	-	190	190	
Pyrophyllite#	tonne	948617	605071	454154	2007842	522104	1201221	378450	66512	911508	43200	3625241	5633083	
Quartz- silica sand#	'000 tonnes	8042	14530	3977	26549	1946	15482	957	6290	51590	-	79336	105885	
Phosphorite/Rock phosphate*	tonne	-	-	-	-	-	432898	-	740000	21481960	-	25773444	25773444	
Sillimanite tonne		-	-	-	-	-	-	2100000	9350000	-	-	11450000	11450000	

Figures rounded off.

* Reserves/Resources as on 1.4.2013.

Declared as minor mineral vide Gazette Notification dated 10.02.2015.

STATE REVIEWS

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

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Andalusite							
Sonbhadra	Banwarjharia- Mairpur area	-	-	-	-	-	G4 stage investigation for andalusite was taken up in Mahakoshal Group. The area of investigation is occupied mainly by meta-sediments of Parsoi Formation and younger acid and basic intrusives as well as granitoids of Dudhi Granitoid Complex. Two andalusite occurrences viz. Rantola-Katauli in west and Banwarjharia-Kurgi on east were mapped. Andalusite occurs as porphyroblasts within phyllite and schists of Parsoi Formation of Mahakoshal Group. Andalusite is also noted within pegmatite and quartz veins intruding phyllite. The andalusite bearing phyllite and schist forms a linear ridge in ENE-WSW direction occupying an area of 33.59 sq km. The andalusite noted here is mainly “chiastolite” variety (Al_2SiO_5). The resource estimated per metre depth for 33.59 sq km is 7.7 million tonnes approximately with grade- 8.43% (Wt%) by weighted average method. The resource estimated for placer andalusite is 0.03 million tonnes approximately for average thickness of gravel beds- 1.00 m for an area of 0.15 sq km.
Glaucanite							
Sonbhadra	Newari-Semiyan area	-	-	-	802.35	40	G4 stage investigation was taken up. Barawadih, Semiyan and Kurcha blocks were covered by Detailed Mapping and scout drilling and Kanachh, Kandhura and Kajrahat area was covered by Large Scale Mapping. 802.35 m scout drilling has been carried out in Semiyan block and South of Manib ki Pahari block. Glaucanite occurrence was recorded in bedded and pellet form in Bashuhari Formation of Semri group. Study of drilled cores together with borehole geophysical data of Semiyan block reveals glaucanite mineralisation is occurring at three different levels in depth. 1.33 million tonnes of resource was estimated on the basis of data of boreholes NSH-1, 2 & 3 in Semiyan block with an average grade of K_2O -4.86%. Glaucanite bearing zone with a strike length of 650 m and average

(Contd.)

STATE REVIEWS

Table – 3 (Concl.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							width of 30-50 m was delineated in the Barawadih area. Analytical results of 40 nos. bed rock samples of Barawadih area show K ₂ O value ranges 0.61% to 6.56 % with an average value of 4.31%. Analytical results of some spot samples of Kurcha block show maximum value for K ₂ O is 11.09%.
Iron ore							
Sonbhadra	Bharhari area	-	-	-	-	-	G4 stage investigation was carried out for resource evaluation of iron ore in Mahakoshal Group. The area is characterised by Son Narmada North Fault (SNNF), trending ENE–WSW and other sympathetic faults in phyllitic country rock. In the mapped area, five BIF bands parallel to each other are observed trending N70E- S70W over a strike length of 20 km with width ranging from 170 m to 450 m. The BIF bands are interbanded with phyllite. Apart from this major BIF zone, several other banded haematite jasper (BHJ), banded haematite chert (BHC) occur. Analytical results of grab samples from BIF yielded Fe ₂ O ₃ value ranges from 40.63% to 62.51%. The investigation has been completed.
Pyrophyllite							
Lalitpur	Dongrakhurd- Gatholikalan area	1:2000	-	5	518.22	-	G4 stage investigation for pyrophyllite-Diaspore was taken up. Large scale mapping has been carried out in Gatholikalan, Pyasa, Kusmar, Dongrakhurd, Baron, Gona, Uldana Kalan and Saidpur areas and Detailed mapping on 1:2000 scale was carried out in Tikra and Loharra areas. Scout drilling with a meterage of 518.22 m in 5 boreholes was carried out in Kherpura, Jhankar and Tikra areas. Pyrophyllite is light green with greasy lustre and occurs in association with quartz-sericite-pyrophyllite schist and quartz vein. The pyrophyllite mineralisation was not observed on the surface, but core recovered from drill holes reveals visible pyrophyllite mineralisation. Pyrophyllite mineralisation was observed in quartz-sericite-pyrophyllite schist at various depths in drill hole KH-1, KH-2, JH-1 and JH-2 at Kherpura and Jhankar areas.

STATE REVIEWS

**Table – 4: Mineral Production in Uttar Pradesh, 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		22		75209010	19		74510706	17		70429213
Coal	'000t	4	16100	35844200	4	14700	20046100	4	15000	16186900
Diaspore*#	t	-	8954	14788	-	8120	15596	-	7490	15828
Limestone	'000t	2	3214	603901	2	3144	711561	2	2952	489352
Pyrophyllite#	t	14	31613	10555	12	26240	8771	11	25755	10207
Quartz*#	t	-	-	-	-	900	90	-	50	5
Silica Sand#	t	2	42051	8326	1	8336	1667	-	-	-
Sulphur ^s	t	-	43574	-	-	35361	-	-	48782	-
Minor Minerals [@]		-	-	38727240	-	-	53726921	-	-	53726921

Note: The number of mines excludes minor minerals.

** Associated with pyrophyllite.*

\$ Recovered as by-product from oil refinery.

@ 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 Uttar Pradesh

Industry/plant	Capacity ('000 tpy)
Abrasives	
John Oakey and Mohan Ltd, Ghaziabad.	NA
Aluminium	
Hindalco Industries Ltd, Renukoot.	700 (alumina) 345 (aluminium)
Asbestos Product	
Asbestos Cement Ltd, Raebareli.	NA
Uttar Pradesh Asbestos Product Ltd, Mohanlalganj, Lucknow.	NA
Cement	
ACC Ltd, Tikaria, Distt. Sultanpur (G).	2300
Ambuja Cement, Dadri, Gautam Budh Nagar (G).	1500
Birla Cement, Raebareli (G).	800
Heidelberg Cement (Diamond Cement), Madora Jhansi (G).	500
Jaypee Cement, Sadvakhurd (Blending Unit).	600
Jaypee Cement, Sikandarabad (G).	1000
Jaypee Cement, Dalla Cement Factory, Dalla Distt. Sonbhadra.	500

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Jaypee Cement, Chunar Cement Factory, Chunar, Distt. Mirzapur (G).	2500
Jaypee Cement, Tanda, Ayodhya, Distt. Faizabad (G).	1000
Reliance Cement, Kundanganj, Distt. Raebareli.	2000
Ultra Tech Cement, Dadri (G).	1300
Ultra Tech Cement, Aligarh (G).	1300
Ceramics	
BHEL, Porcelain Insulator Division, Sultanpur.	NA
Kajaria Ceramics Ltd, Sikandrabad, Distt. Bulandshahar.	9.8 (million sq m)
Orients Ceramics & Industry Ltd, Sikandrabad.	95
UP Ceramics & Potteries Ltd, Ghaziabad.	4.8
Chemical	
Kanoriya Chemicals Ltd, Renukoot.	48 (caustic soda)
Fertilizer	
Asian Fertilizers Ltd, Deokahia, Gorakhpur	66 (SSP)

(Contd.)

STATE REVIEWS

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Coromandel International Ltd (Formerly Liberty Phosphate Ltd), Raebareli.	132 (SSP)
Jubilant Agri and Consumer Products Ltd (Formerly Vam Organic Chemicals Ltd), Bhartiagram, Gajraula.	165 (SSP)
IFFCO, Phulpur (Unit I & II), Distt. Allahabad.	1697.8 (Urea)
IFFCO, Aonla (Unit I & II).	1999.8 (Urea)
Indo Gulf Fertilizer Ltd (a unit of Aditya Birla Nuva Ltd), Jagdishpur.	1105.5 (Urea)
Kanpur Fertilizer & Cement, (formerly Duncan India Ltd), Kanpur.	722 (Urea)
Khaitan Chemicals & Fertilizers Ltd, Goramachhia, Jhansi.	132 (SSP) 52.8 (H ₂ SO ₄)
Khaitan Chemicals & Fertilizers Ltd, Malwan, Fatehpur.	115 (SSP) 52.8 (H ₂ SO ₄)
KRIBHCO Shyam Fertilizer, Piprola Shahajahanpur.	864.6 (Urea)
Madan Madhav Fertilizers & Chems Pvt. Ltd, Feteugarh.	24 (SSP)

(Contd.)

Table - 5 (Concltd.)

Industry/plant	Capacity ('000 tpy)
Natraj Organics Ltd, Muzaffarnagar.	60 (SSP)
Tata Chemicals Ltd, Babrala, Distt. Badaun.	1155 (Urea)
V. K. Phosphates Ltd, Bartara, Shahjahanpur	33 (SSP)
Ferro Alloys	
Hindustan Ferro Alloys, Hamirpur.	3.2
The India Thermit Corpn. Ltd, Kanpur.	0.3
Iron & Steel	
Malvika Steel Ltd, Jagdishpur.	511 (pig iron) 600 (saleable steel)
Glass	
Hind Lamps Ltd, Shikohabad.	NA
Mohan Crystal Glass Works, Mohan Nagar Distt. Ghaziabad.	40.9
Universal Glass Co., Ghaziabad.	60
Petroleum Refinery	
IOCL, Mathura.	8000

(G); Grinding Unit

Note: Data, not readily available 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.