

STATE REVIEWS



Indian Minerals Yearbook 2017

(Part- I)

56th Edition

**STATE REVIEWS
(Uttar Pradesh)**

(FINAL RELEASE)

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

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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 (hematite)** 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 2016-17, National Oil Companies (NOC) continued their operations for exploration of oil and gas in the State. GSI also carried out exploration in Sonbhadra, Jhansi & Hamirpur districts. The details of exploration carried out by GSI in the State are furnished in Table-3.

Production

Coal, limestone and sulphur were the mineral items produced in Uttar Pradesh during 2016-17.

The value of minor minerals' production was estimated at ` 5,614 crore for the year 2016-17.

The number of reporting mines in Uttar Pradesh was 2 in 2016-17 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 mineral-based industries in the organised sector in the State are given in Table - 5.

Table -2 : Reserves/Resources of Coal as on 1.4.2017 : Uttar Pradesh

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

Source: Coal Directory of India, 2016-17.

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Table – 1 : Reserves/Resources of Minerals as on 1.4.2015: Uttar 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						
Andalusite	'000 tonnes	-	-	-	-	-	-	-	-	-	24200	24200	24200	
Bauxite	'000 tonnes	-	-	-	-	-	-	10390	500	8018	-	18908	18908	
Calcite [#]	tonne	-	-	-	-	-	-	-	-	11000	-	11000	11000	
China clay [#]	'000 tonnes	-	-	-	-	-	-	11600	3447	10018	-	25065	25065	
Diaspore [#]	tonne	861653	543478	940945	2346076	18548	10662	19855	545	234566	-	284175	2630251	
Dolomite [#]	'000 tonnes	-	-	-	-	-	12622	-	3500	66230	-	82352	82352	
Felspar [#]	tonne	-	-	-	-	-	-	-	-	200000	-	200000	200000	
Fireclay [#]	'000 tonnes	-	-	-	-	-	-	-	-	3221	-	3221	3221	
Granite [#]														
(Dimension Stone)	'000 cum	-	-	-	-	-	-	-	-	494819	-	494819	494819	
Iron ore (Haematite)	'000 tonnes	-	20000	-	20000	-	-	-	-	38000	-	58000	58000	
Limestone	'000 tonnes	-	12849	12849	33360	129180	38375	142763	40000	31200	-	414878	427727	
Ochre [#]	tonne	-	-	-	-	-	-	25000	35000	10000	-	70000	70000	
Potash	million tonnes	-	-	-	-	-	-	-	-	198	685	883	883	
Platinum Group of metals	tonne	-	-	-	-	-	-	-	0.01	-	-	0.01	0.01	
Pyrophyllite [#]	tonne	3598112	770113	1233511	5601736	132189	213979	378450	66512	1070930	43200	2118782	7720518	
Quartz-														
Silica sand [#]	'000 tonnes	445	19825	15144	35413	9415	30012.83	7048.4	6290	51590	-	105314	140727	
Rock														
Phosphate	tonne	-	-	-	-	-	432898	3118586	740000	21481960	-	25773444	25773444	
Sillimanite	tonne	-	-	-	-	-	-	-	2100000	9350000	-	11450000	11450000	

Figures rounded off.

Declared as Minor Minerals vide Gazette Notification dated 10.02.2015

Minor Mineral before Gazette Notification dated 10.02.2015

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Table – 3: Details of Exploration Activities in Uttar Pradesh, 2016-17

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Andalusite Sonbhadra	Pulwar block North of Pulwar village	1:2000	1	-	1082.15	-	General exploration for andalusite was carried out in segment 'A' of Pulwar block. The litho units exposed in the area are andalusite bearing phyllite, granite, intrusive andalusite bearing quartz vein, milky white quartz vein and minor pegmatites. The andalusite crystals are seen as disseminated porphyroblasts within phyllite. The andalusite crystals are long slender, prismatic in shape, with vitreous lusture. The most of the andalusites are of "chiastolite" variety. The andalusites are of "chiastolite" variety. There is no zonation in the area. The andalusite crystal variation is noted from top to bottom of the boreholes. There is not much variation in the concentration of andalusite crystals. Analytical values of Al ₂ O ₃ and SiO ₂ in 10 bedrock samples ranging from 7.81 to 31.01% and 50.36 to 77.02%, respectively. Analytical values of Al ₂ O ₃ and SiO ₂ in 05 pitting-trenching samples range from 33.26 to 38.55% and 50.84 to 52.49%, respectively.
	Pulwar block North of Pulwar Village.	1:2000	1.5	-	500	-	G3 level preliminary exploration for andalusite was carried out in segment 'B' of Pulwar block by detailed mapping. Andalusite bearing phyllite is the major litho unit in the area. The most of the andalusites are of "chiastolite" variety. Analytical values of Al ₂ O ₃ and SiO ₂ in 5 bedrock samples range from 22.74 to 27.28% and 47.42 to 56.85%, respectively. Analytical values of Al ₂ O ₃ and SiO ₂ in 5 pitting-trenching samples range from 29.80 to 35.80% and 47.95 to 52.49%, respectively. Analytical result of 12 core samples shows Al ₂ O ₃ and SiO ₂ values from 21.50 to 28.62% and 52.34 to 58.70%, respectively.

(Contd.)

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Table – 3 (Concl.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
REE Jhansi- Hamirpur	Bahadur Kalan Sijara Buzurg area	1:12500	130.0	-	-	-	G4 level reconnaissance survey for REE mineralisation was taken up in Bundelkhand Granitoid complex Bahadur Kalan Sijara Buzurg area. Systematic sampling had been carried out along with pitting and trenching and channel sampling at places. Older metamorphic and granitoids belonging to the Bundelkhand Granitoid complex (BGC) are exposed in the mapped area. Some of the pegmatites from Lilwa area are magnetite bearing. The maximum total REE in bed rock sample is 731 ppm. Soil samples from the area has indicated REE of 854 ppm.
Sonbhadra	Deorhi- Barwatola area	1:12500	130.0	-	1082.15	-	G4 level reconnaissance survey for tungsten and REE mineralisation was taken up in Dudhi Gneissic Complex, Deorhi-Barwatola area. Investigation for tungsten and REE mineralisation was carried out by large scale mapping of 130 sqkm along with bedrock sampling, pitting – trenching. REE mineralisation in the area is mainly associated with magnetite bearing pegmatite vein which intruded into granite and gneiss. Analytical results indicate total REE ranging from 681 to 1710.55 ppm. Tungsten value up to 25.26 ppm had been observed in pegmatite samples from Deorhi area.

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**Table – 4 : Mineral Production in Uttar Pradesh, 2014-15 to 2016-17
(Excluding Atomic Minerals)**

(Value in ` '000)

Mineral	Unit	2014-15			2015-16			2016-17 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value ⁵
All Minerals		17		72881985	6		70596982	6		56553200
Coal	'000t	4	14957	16186900	4	12689	14028100	4	16056	-
Diaspore [#]	t	*	7490	15828	-	-	-	-	-	-
Limestone	'000t	2	2952	528484	2	2596	428321	2	2656	412639
Pyrophyllite [#]	t	11	25755	10207	-	-	-	-	-	-
Quartz [#]	t	-	50	5	-	-	-	-	-	-
Sulphur [*]	t	-	48782	-	-	47836	-	-	46618	-
Minor Minerals [@]		-	-	56140561	-	-	56140561	-	-	56140561

*Note: The number of mines excludes minor minerals.**\$Excluding Fuel 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 Minerals 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, Raibareli.	NA
Uttar Pradesh Asbestos Product Ltd, Mohanlalganj, Lucknow.	NA
Cement	
ACC Ltd, Tikaria, Distt. Sultanpur (G).	3000
Ambuja Cement, Dadri, Gautam Budh Nagar (G).	1800
Raebareli Cement Works, Birla Corporation (G).	1300
Heidelberg Cement (Diamond Cement), Madora Jhansi (G).	2100

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Jaypee Cement, Sadvakhurd (Blending Unit).	600
Ultratech Cement, Sikandarabad (G).	1000
Ultratech Cement, Dalla Cement Factory, Dalla Distt. Sonbhadra.	500
Jaypee Cement, Chunar Cement Factory, Chunar, Distt. Mirzapur (G).	2500
Jaypee Cement, Tanda, Ayodhya, Distt. Faizabad (G).	1000
Jaypee Cement, Churk Mirzapur (G)	1500
Reliance Cement, Kundanganj, Distt. Raebareli.	2000
Ultra Tech Cement, Dadri (G).	1300
Ultra Tech Cement, Aligarh (G).	1300
Mangalam Cement, Aligarh (G)	750
Fertilizer	
Asian Fertilizers Ltd, Deokahia, Gorakhpur	66 (SSP)

(Contd.)

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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 Chemicsls 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)

(Contd.)

Table - 5 (Concl.)

Industry/plant	Capacity ('000 tpy)
Madan Madhav Fertilizers & Chems Pvt. Ltd, Fetehtarh.	24 (SSP)
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)
Petroleum Refinery	
IOCL, Mathura.	8000

(G); Grinding Unit

Note: Data, not readily available for fertilizer and cement industries on respective websites, is taken from Indian Fertilizer Scenario, 2015/FAI Statistics, 2015-16 and Survey of Cement Industry & Directory, 2016, respectively.