

STATE REVIEWS



Indian Minerals Yearbook 2017

(Part- I)

56th Edition

STATE REVIEWS
(Assam)

(FINAL RELEASE)

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ASSAM

Mineral Resources

Coal, petroleum & natural gas, limestone, fuller's earth, sillimanite and minor minerals are the chief mineral resources of the State. **Coal** occurs in Mikirs Hills, Dilli-Jeypore, Makum and Singrimari coalfields. Coal extracted from the State is friable and contains high sulphur. **Petroleum & natural gas** occurs in Digboi oilfields, Lakhimpur district and Moran and Rudrasagar oilfields in Sivasagar district located in Assam Arakan Fold Belt (AAFB), Upper Assam and Assam basins. **Limestone** occurs in Karbi Anglong, North Cachar Hills and Nowgaon districts. Besides, **china clay** occurs in Karbi

Anglong and North Lakhimpur districts; **fireclay** in Dibrugarh, Karbi Anglong, North Cachar Hills and North Lakhimpur districts; **fuller's earth** in Nalbari district; **granite** in Goalpara, Kamrup and Karbi Anglong districts, **iron ore (hematite)** in Kokrajhar district; **iron ore (magnetite)** in Dhubri, Goalpara & Kokrajhar districts; **quartz/silica sand** in Nowgaon district, and **sillimanite** in Karbi Anglong & Nowgaon districts. The reserve / resources of minerals and coal are given in (Tables - 1 and 2).

Exploration & Development

GSI carried out exploration for iron ore, glass sand, quartzite and coal in Assam during 2016-17. Details of its activities are furnished in Table-3.

Table – 1: Reserves/Resources of Coal as on 1.4.2017 : Assam

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	464.78	57.21	3.02	525.01
Singrimari	-	14.49	-	14.49
Makum	432.09	20.70	-	452.79
Dilli-Jeypore	32.00	22.02	-	54.02
Mikir Hills	0.69	-	3.02	3.71

Source: Coal Directory of India, 2016-17.

Table – 2 : Reserves/Resources of Minerals as on 1.4.2015 : Assam

Mineral	Unit	Reserves				Remaining resources					Total Resources (A+B)		
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Indicated STD332	Inferred STD333		Reconnaissance STD334	Total (B)
			STD121	STD122			STD221	STD222					
China Clay#	'000 tonnes	-	-	-	-	131	-	-	3520	-	4043	4043	
Fireclay#	'000 tonnes	-	-	-	-	-	-	-	3161	-	3161	3161	
Fuller's earth##	tonne	-	-	-	-	-	-	18860000	-	-	18860000	18860000	
Granite (Dim. stone)##	'000 cum	-	-	-	-	-	800	-	583150	-	583950	583950	
Iron Ore (Hematite)	'000 tonnes	-	-	-	-	-	8600	-	4000	-	12600	12600	
Iron Ore (Magnetite)	'000 tonnes	-	-	-	-	-	-	-	15380	-	15380	15380	
Limestone	'000 tonnes	25542	152546	178088	167902	21973	4257	39859	901623	-	1290258	1468346	
Quartz-silica sand#	'000 tonnes	-	-	-	-	-	-	-	1790	-	1790	1790	
Sillimanite	tonne	-	-	-	-	-	-	850000	6700	3748000	4604700	4604700	

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Figures rounded off.

Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

Minor Minerals before vide Gazette Notification dated 10.02.2015.

Note: The proved and indicated balance recoverable reserves of crude oil and natural gas as on 1.4.2016 are 160.79 million tonnes and 153.76 billion cu m, respectively.

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

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Coal							
Dhubri (Singrimari coal field)	In and around Khopati area	1: 10000	2.5	2	600.50	-	G3 stage preliminary exploration was carried out for Gondwana Coal at the border of Assam and Meghalaya. An area of 2.5 sq. km around Bhordoba area was mapped on 1:10000 scale. A total of 600.50 m has been drilled in two boreholes in Khopati area. Coal/ carbonaceous zone of 0.34 m thickness was intersected within the borehole at 213.78 m depth in first borehole. The second borehole has progressed up to 327.50 m.
Iron Ore							
Goalpara	In and around Chandrdinga area	-	3	9	500	300	G3 stage preliminary exploration was carried out for low grade iron ore. Banded iron formation (BIF) in Chandrdinga area is primarily banded magnetite quartzite and banded haematite quartzite which occur as scree/talus boulders along with few outcrops. Amphibolite forms the basement rock for iron ore. Fe(T) in iron ore varies from 48.26% to 63.01% as analysed of 11 petrochemical samples. In Chandrdinga block, drilling of 500 m in 200 m X 200 m grid pattern has been completed in nine boreholes. The thickness of ore zone encountered in different boreholes varies from 9.5 to 96 m. In some boreholes a sulphide rich zone has also been recorded below iron ore. A total of 300 samples from the iron ore zone have been submitted for analysis. Results are awaited.
	Kumri area (Paglatek- khutmari Hills)	1:12500 1:2000	50 1.5	- -	- -	- -	G4 stage search was carried out for Iron ore in Kumri area (Paglatek-Khutamari hills). The mapped area is occupied by the Precambrian basement gneissic complex and Quaternary alluvial sediments of Brahmaputra valley. The Precambrian basement gneissic complexes are exposed in the isolated hillocks and comprises of calc granulite, banded magnetite quartzite (BMQ), amphibolites, muscovite quartz schist, granite gneiss, granite, pegmatite and quartz veins. Banded magnetite quartzite has been observed at Khutamari hill which has strike length

(Contd.)

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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		
GSI							
Coal							
Dhubri (Singrimari coal field)	In and around Khopati area	1: 10000	2.5	2	600.50	-	of about 750-800 m and 220-260 m in width app. Out of 28 BRS samples collected, the analytical data for 20 BRS samples have been received which shows FeO(T) from 47.29 to 64.48%. Total 26 pit & trench soil samples collected from the 8 trenches of Iron ore bearing area shows FeO(T) maximum value of 21.56% and minimum value of 7.53 percent.
Glass sand/Quartzite							
Nagaon and Karbi Anglong	Silpata- Bamuni and Chapanala- Bohola	-	150.0	4	235.5	-	G3 stage preliminary exploration has been carried out in this block. The colour of the quartzite is variable as gray, pale yellowish gray and milky white. Presence of discrete hematite rich layers is present at places. The quartzite commonly shows tabular and trough cross bedding. In Jiyajuri block, the quartzite is mainly loose or less compact in nature with minor content of biotite and sericite, in other words they are little phyllitic in nature at places. Under microscope, microcline shows alteration to sericite as well as kaolin. It has been observed that near the surface, the quartzite is weathered due to presence of K- feldspar. In NJ-I, loose buff coloured quartzite is encountered comprising mainly fine to medium grained quartz and minor clay from 4.5 to 29.0 m, however, quartz rich off-white fine to medium grained quartzite continues from 51.1 to 65.0 m. In NJ-3, loose buff coloured quartzite is encountered comprising mainly fine to medium grained quartz and minor clay from 5 to 24.5 m, however, quartz rich off-white fine to medium grained quartzite continues from 48.5 to 71.5 m. In NJ-4, loose buff coloured quartzite is encountered comprising mainly fine to medium grained quartz and minor clay from 3 to 18.5 m. In NJ-6, loose buff coloured quartzite comprising mainly fine to medium grained quartz, however, pale brownish coloured quartzite continues all through. The chemical data received for 104 samples indicate SiO ₂ ranging from 70 - 93.68%, Al ₂ O ₃ ranging from 3.68 to 24.09% and Fe ₂ O ₃ ranging from 0.51 to 13.73 percent.

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Production

Petroleum (crude), natural gas (ut.), coal and limestone were the principal minerals produced in Assam state in 2016-17.

The value of minor minerals' production was estimated at ` 31 crore for the year 2016-17.

There were 3 reporting mines in 2016-17 in Assam in case of MCDR minerals. (Table-4.)

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

(Value in `'000)										
Mineral	Unit	2014-15			2015-16			2016-17 (p)		
		No. of mines	Quantity	Value ^{\$}	No. of mines	Quantity	Value ^{\$}	No. of mines	Quantity	Value ^{\$\$}
All Minerals		6		4306667	7		2255520	7		757856
Coal	'000t	4	779	3819900	4	487	1711300	4	600	-
Natural Gas (ut.)	m c m	-	2958	-	-	3025	-	-	3128	-
Petroleum(crude)	'000t	-	4466	-	-	4185	-	-	4203	-
Limestone	'000t	2	665	172962	3	777	230415	3	1594	444051
Sulphur [#]	t	-	5803	-	-	4312	-	-	6559	-
Minor Minerals [@]		-	-	313805	-	-	313805	-	-	313805

Note : The number of mines excludes petroleum (crude), natural gas (utilised) and minor minerals.

\$ Excludes the value of Petroleum (crude) & Natural Gas (ut.) \$\$ Excluding fuel minerals.

Recovered as by-product from oil refinery.

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

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, as per the

available information, the principal mineral-based industries in the organised sector in the State are furnished in Table - 5.

Table – 5 : Principal Mineral-based Industries in Assam

Industry/plant	Capacity ('000 tpy)
Asbestos Products	
Assam Roofing Ltd, Bonda, Distt. Kamrup.	58
Cement	
Barak Valley Cements Ltd, Jhoom basti, Badarpurghat, Distt. Karimganj.	330
Calcom Cement (Dalmia Subsidiary), Distt. Nagaon.	1720
CCI Ltd, Bokajan, Distt. Karbi Anglong.	200
Cement Manufacturing Co. Ltd, Chamata Pathar, P. O. Sonapur, Distt. Kamrup (G).	1800
Purbanchal Cement, Vill. Sarutari, Distt. Kamrup.	360
Fertilizer	
Assam State Fertilizer & Chemicals Ltd, Chandrapur, Distt. Kamrup.	33 (SSP) 16.5 (H ₂ SO ₄) (Contd.)

Table – 5 (Concltd.)

Industry/plant	Capacity ('000 tpy)
Brahmaputra Valley Fertilizers Corpn. Ltd, Namrup (Namrup II & III), Distt. Dibrugarh.	510 (Urea)
Progressive Fertichem Pvt. Ltd, Topatoli, Kamrup.	45 (SSP)
Iron & Steel	
Shri Ganapati Ispat Pvt Ltd, Tinsukia.	NA
Petroleum Refinery	
Indian Oil Corporation, Bongaigaon.	2350
Indian Oil Corporation, Moonmati, Guwahati.	1000
Indian Oil Corporation, Digboi.	650
NRL, Numaligarh, Golaghat.	3000

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