Indian Minerals Yearbook 2020

(Part- I)

59th Edition

STATE REVIEWS (Uttarakhand)

(ADVANCE RELEASE)

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UTTARAKHAND

Mineral Resources

Important minerals that are found to occur in the State are high-grade **limestone** in Almora, Bageshwar, Dehradun, Nainital, Pauri-Garhwal, Pithoragarh & Tehri-Garhwal districts; **magnesite** & **steatite** in Almora, Bageshwar, Chamoli & Pithoragarh districts; and **tungsten** in Almora district.

Other minerals that occur in the State are: **asbestos** in Chamoli district; **barytes** & **marble** in Dehradun district; **copper** in Almora, Dehradun & Pithoragarh districts; **dolomite** in Dehradun, Nainital & Tehri-Garhwal districts; **graphite** in Almora district; **gypsum** in Dehradun, Pauri-Garhwal & Tehri-Garhwal districts; **lead-zinc** & **silver** in Dehradun & Pithoragarh districts; and **rock phosphate** in Dehradun & Tehri-Garhwal districts (Table - 1).

Exploration and Development

GSI carried out exploration for base metal in District Rudraprayag in the State of Uttarakhand during 2019-20. Details of exploration are furnished in Table-2.

Production

Magnesite was the only important mineral item produced in Uttarakhand during 2019-20. The value of production of minor minerals was estimated at ₹ 64 crore for the year 2019-20 (Table-3).

Mineral-based Industry

The present status of each Mineral-based Industry is not readily available. However, the important medium and large-scale mineral-based industries in the Organised Sector in the State are furnished in Table - 4.

Table –2 : Details of Exploration Activities in Uttarakhand, 2019-20

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Base Metal							
Pithoragarh	Ajera-Pasma area	1:12500	50.0	-	-	-	Reconnaissance survey (G4) for Base metal mineralisation in this area has out by LSM. The field work included LSM of 50 sq km area on 1: 12500 scale along with sample collection. The rock types of the mapped area could be broadly classified into two formations, namely, the Askot crystallines and Berinag Formation. In field, no potential zone of mineralisation was found but based on replacement of actinolite by biotite in petrological studies of mafic tuff, a 300 m long and 30 m wide alteration zone was inferred. To identify possible extension of Askot deposit based on adsorption of metal ions in clay minerals,91 Soil/Slope Wash samples were also collected from the eastern part of the area. The received analysis of BRS samples does not give any encouraging values for potentiality of base metal mineralisation in the area.
Rudraprayag	Bamera-Gwar-Dhanpur area	1:12500	50.0	-	-	-	Reconnaissance survey (G4) for Base metal mineralisation in this area was carried out by LSM,which involved an area of 50 sq km on 1:12500 scale. Geologically, the study area was found to be constituted by the rocks of Berinag and Lameri formations of the Garhwal Group of Mesoproterozoic Age. The sulphide mineralisation was also

(contd)

Table –2 (concld)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							observed in Dobri area within dolomite. An area of about 1 sq km between Gwanagarh peak (east), Dhuya (west), Dhanpur (north) and Dobri (south), has been identified as the most prospective area from the mineralisation point of view. Based on the geological mapping, the control on mineralisation was established, which is remobilisation and concentration of mineralisation along F2 axial planes.
REE,Sn, W, Mo, Rare Metal							
Uttarkashi	Gangotri Granite	1:25000	-	-	-	-	Reconnaissance survey (G4) for REE, Sn, W, Mo, Rare Metals mineralisation in this area was carried out by mapping Traverse mapping was carried out for 85-line km on 1:25000 scale in the study area. Different phases/ variants of granite bodies were delineated by means of modal variation. Two potential mineral blocks have been identified. First block is Nelong-Naga-Jadhang-Nilapani block which is intensely hydrothermally altered granite which host pyrite, chalcopyrite, galena with molybdenite flakes. Contact of altered granite with adjacent quartzite of Tethyan sequence was sheared and quartzite was brecciated along the contact with sulphide mineralisation. Another block is Harsil-Mukhaba-Jhala block which defines occurrence of highly fertile rare metal pegmatite complex. These pegmatites were spatially zoned and extended over 8-10 km from source granite and was observed to be have been intruded into the garnetiferous mica schist of Tethyan sequence. Both parent granite and pegmatites contain rare metal minerals, such as, beryl, cassiterite, ferrocolumbite and ferrotapiolite. Geochemically, the biotite muscovite granite and leucogranite are peraluminous in composition. The occurrences of complex crystals of cassiterite, ferrocolumbite, ferrotapiolite with beryl and traces of pollucite within the Jhala pegmatite/ layered aplite pegmatite indicated volatile rich, geochemically evolved peraluminous melt by process of extended fractional crystallisation of volatile rich parent granite pluton.

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

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						
Asbestos#	tonne	-	-	-	-	-	-	-	-	311	-	-	311	311
Barytes#	tonne	-	-	-	-	-	-	-	-	-	25000	-	25000	25000
Copper														
Ore	'000 tonnes	-	-	-	-	-	-	-	3170	390	660	-	4220	4220
Metal	'000 tonnes	-	-	-	-	-	-	-	53.45	1.44	5.15	-	60.04	60.04
Dolomite#	'000 tonnes	1570	594	-	2165	36	721	371	1946	981	199834	-	203888	206053
Graphite	tonne	-	-	-		-	-	-	10700	-	-	-	10700	10700
Gypsum#	'000 tonnes	-	-	-	-	-	-	35	-	-	2012	-	2047	2047
Lead-Zinc														
Ore	'000 tonnes	-	-	-	-	-	-	-	3170	1790	660	-	5620	5620
Lead metal	'000 tonnes	-	-	-	-	-	-	-	138.85	34.25	9.5	-	182.60	182.60
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	151.21	87.99	27.63	-	266.83	266.83
Limestone	'000 tonnes	-	-	-	-	5035	91872	60429	29486	164879	1191059	-	1542760	1542760
Magnesite	'000 tonnes	3104	-	4206	7310	1023	602	31534	58902	58756	73287	-	224103	231413
Marble##	'000 tonnes	-	-	-	-	-	-	-	-	-	6000	-	6000	6000
Rock														
Phosphate	tonne	-	-	-	-	3063503	-	1734370	2760000	-	16620513	-	24178386	24178386
Silver														
Ore	tonne	-	-	-	-	-	-	-	1600000	1400000	390000	-	3390000	3390000
Metal	tonne	-	-	-	-	-	-	-	134	4.2	0.39	-	138.59	138.59
Talc-Steatite-Soapstone#	'000 tonnes	16896	4521	2698	24115	5831	5353	8982	978	2372	24388	5860	53765	77881
Tungsten														
Ore	tonne	-	-	-	-	-	-	-	-	138000	-	520000	658000	658000
Contained WO_3	tonne	-	-	-	-	-	-	-	-	25	-	680	705	705

Figures rounded off.

 # Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

##: Minor Minerals before Gazette Notification dated 10.02.2015.

Table-3 : Mineral Production in Uttarakhand, 2017-18 to 2019-20 (Excluding Atomic Minerals)

(Value in ₹ '000)

Mineral	Unit	2017-18			2018-19			2019-20 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value
All Minerals		**3**		**742564**	**3**		**789931**	**3**		**741479**
Magnesite	t	3	64206	106197	3	87123	153564	3	44210	105112
Minor Minerals @		-	-	636367	-	-	636367	-	-	636367

Note: *The number of mines excludes Minor minerals.*
@ Figures for earlier years have been repeated as estimates because of non-receipt of data.

Table – 4: Principal Mineral-based Industries

Industry/plant	Capacity ('000 tpy)
Abrasives	
Tirupati Microns, Bhagwantpur, Kashipur, Udham Singh Nagar	0.15 (Abrasives Powder)
Cement	
The KCP Ltd, Distt Haridwar (G)	1100
Ambuja Cement, Roorkee, Distt Haridwar (G)	1000
Shree Cement, Roorkee, Distt Haridwar (G)	1800
Shree Cement, Laskar Grinding unit Akbarpur-OUD, Laskar	1800
DBM	
Almora Magnesite Ltd, Village-Matela Distt. Bageshwar	24 (DBM, calcined & semi calcined magnesite)
Minerals & Refractories. Haldwani Pithoragarh	3 (DBM)
Ramesh Chandra Binjola, Kumaon Refractories, Narsingh Talla, Haldwani	8(DBM, calcined magnesite)
Glass	
Hindustan National Glass & Industries Ltd, Rishikesh	4395 TPD

G: Grinding Unit