# Indian Minerals Yearbook 2020

## (Part- I)

## 59th Edition

# STATE REVIEWS (Manipur)

### (ADVANCE RELEASE)

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**February, 2023**

# MANIPUR

## Production

No mineral production (except minor minerals) was reported from Manipur in 2019-20. The value of minor minerals' production was estimated at ₹ 29 lakh for the year 2019-20.

## Exploration & Development

The details of exploration activities conducted by GSI for Chromite and Nickel during the year 2019-20 are furnished in Table - 2.

**Table– 1: Reserves/Resources of Mineral as on 1.4.2015 : Manipur**

| 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 | | | | | | |
| China clay# | '000 tonnes | - | - | - | - | - | - | - | 2520 | - | - | - | 2520 | 2520 |
| Chromite | '000 tonnes | - | - | - | - | 3 | 21 | 52 | - | 504 | 6077 | - | 6657 | 6657 |
| Limestone | '000 tonnes | - | - | - | - | - | - | - | 10197 | 2138 | 33718 | - | 46053 | 46053 |

*Figures rounded off*
*# Declared as Minor Mineral vide Gazette Notification dated 10.02.2015*

## Table –2 : Details of Exploration Activities in Manipur, 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** | | | | | | | |
| **Chromium, Nickel & Base metal** | | | | | | | |
| Ukhrul | Gamnom - Yentem area | 1:12500 | 60 | - | - | - | Reconnaissance survey (G4) was taken up for chromium, nickel and base-metal mineralisation in this area. A total of 60.0sq km area was mapped on 1:12500 scale. Chromitites were found to occur in cluster in the form of pods of dimensions ranging from 0.25 to 2.0 m. Chromite were also found to occurr as isolated bodies at Gamnom, south of Khangkui Khullen and Pushing. The chemical analysis of chromitite sample indicated $Cr_2O_3$ (31.1% to 47.51%) which was of metallurgical grade and occured in cluster within a very limited area which are not significant from the economic mineralisation point of view $Cr_2O_3$ (0 to 47.51%). The analytical result of peridotites from pitting/ trenching showed $Cr_2O_3$ (0-47.51%), Ni (924-18,580 ppm), Co (151-329 ppm), Cu (<4- 33 ppm), Pb (2-3 ppm), Zn (35-297 ppm). |
| **Nickel-Cr-PGE & associated basemetal** | | | | | | | |
| Tengnougpal | Khudengthabi-Yangoupokpi | - | 50 | - | - | - | Reconnaissance survey (G4) for Ni-Cr-PGE and associated base-metal in this area was carried out Large-scale mapping of 50.0 sq km area and 50 cu. m of pitting/ trenching. The analytical result indicated Cr (541 to 6,644 ppm), Ni (900-16,600 ppm), Cu (5-95 ppm), Pb (15-70 ppm), Zn (20-130 ppm), Co (50-330 ppm), V (14-484 ppm) from peridotites and its altered derivative, serpentinites. Although, Ni-sulphide mineralisation is not observed, it is intriguing to note the high concentration of Ni in the peridotites. In the limonitic zone of laterite, high concentrations of $Fe_2O_3$ (up to 55.03%) were recorded. Typical |

(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 | | |
| | | | | | | | concretionary type of laterite analyzed $TiO_2$ (0.49%), $SiO_2$ (24.69%),$Al_2O_3$ (9.93%), $Fe_2O_3$ (43.66 %) MgO (1.97%), MnO (0.82%), CaO (0.01%), $Na_2O$ (0.05%), $K_2O$ (0.4%), $P_2O_5$ (0.07%). |
| **Base Metal** | | | | | | | |
| Tengnougpal | Kwatha Namjet Lok area | 1:12500 | 50 | - | - | - | Reconnaissance survey for Cu, Ni, PGE and associated minerals around Kwatha-Namjet Lok area, Manipur Ophiolite Belt, Tengnougpal District, Manipur (G4): LSM of 50 sq km on 1:12500 scale along with 50 cu. m of pitting/trenching with bed rock sampling has been carried out. The peridotite shows higher concentration of Ni (1476-5819 ppm), Co (53-536 ppm) and Cr (1264 ppm-1.16%). The chromite mineralised prospect block measuring 0.8 x 4 km area was delineated trending NNW-SSE located east of Kwatha village, which exposes four lodes of massive chromite hosted by cumulate peridotite. The massive steel black chromite shows encouraging values of $Cr_2O_3$ 42.71-49.66%, Ni 940-1180 ppm and Co 163-224 ppm. Two supergene Ni-Co lateritic mineralized blocks were demarcated as Chalwa and Sadangching block. The lateritic soil samples showing relative enrichment of $Fe_2O_3$ (8.24-48.34%), $Al_2O_3$ (1.25-18.3%) and are depleted in MgO, CaO, MnO and Na2O. The encouraging values of Ni are seen within the lateritic soil (2000- 8000 ppm). The high values of Ni correspond to the saprolite lateritic soil horizon. The other associated mineral commodities in the mapped area include rhodingite hosting precious/ semi-precious stones (moonstone, bluesapphire and jadeite) and talcose magnesite. |