# Indian Minerals Yearbook 2015

## (Part- I)

## 54th Edition

## STATE REVIEWS
## (Telangana)

### (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

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# TELANGANA

The write up for this State is being presented for the first time in the Yearbook. The State is carved out from Andhra Pradesh State and efforts have been made to give a clear picture about the areas/districts falling under the state, however, there are chances of intermixing of data among the State of Andhra Pradesh and Telangana, it will be sorted out in next issue.

Telangana is the 29th State of India, formed on the 2nd of June 2014 with ten districts, namely, Hyderabad, Adilabad, Khammam, Karimnagar, Mahbubnagar, Medak, Nalgonda, Nizamabad, Rangareddy and Warangal. Telangana is surrounded by Maharashtra and Chhattisgarh in the North, Karnataka in the West and Andhra Pradesh in the South and East directions.

## Mineral Resources

Telangana is the leading producer of barytes, dolomite, feldspar, laterite, limestone, quartz and sand (others). It accounts for 47% kyanite, 29% corundum, 10% fuller's earth and 9% limestone resources of the country. Telangana is endowed with the internationally known black, pink, blue and multicoloured varieties of granites.

Important minerals occurring in Telangana are: **barytes** in Khammam, district; **china clay** in Adilabad, Mahabubnagar, Nalgonda, Rangareddi, and Warangal districts; **coal** in Adilabad, Karimnagar, Khammam and Warangal districts; **corundum** in Khammam district; **dolomite** in Khammam and Warangal districts; **felspar** in Hyderabad, Khammam, Mahabubnagar, Medak, and Rangareddy districts; **fireclay** in Adilabad, and Nalgonda districts; **garnet** in Khammam district; **granite** in Karimnagar, Khammam, Mahabubnagar, Medak, Nalgonda, Rangareddy, and Warangal districts; **iron ore (haematite)** in Khammam district; **iron ore (magnetite)** in Adilabad and Warangal districts; **limestone** in Adilabad, Hyderabad, Karimnagar, Mahabubnagar, Nalgonda, Rangareddy districts; **manganese ore** in Adilabad district; **mica** in Khammam districts; **quartz/silica sand** in Hyderabad, Khammam, Mahabubnagar, Medak, Nalgonda, Rangareddy and Warangal districts; and **talc/soapstone/steatite** in Khammam district.

Other minerals that occur in the State are **chromite, copper, graphite and kyanite** in Khammam district; **fuller's earth** in Medak and Rangareddy districts; and **marble** in Khammam district (Tables - 1 and 2).

## Exploration & Development

The details of exploration activities conducted by GSI for coal and other minerals during 2014-15 are furnished in Table - 3.

**Table – 2: Reserves/Resources of Coal as on 1.4.2015 : Telangana**

(In million tonnes)

| Coalfield | Proved | Indicated | Inferred | Total |
|---|---|---|---|---|
| Total/Godavari Valley | 9806.52 | 8807.92 | 2596.91 | 21211.35 |

***Source:*** *Coal Directory of India, 2014-15.*

## Table –1: Reserves/Resources of Minerals as on 01.04.2010/01.04.2013* : Telangana

| 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 | | | | | | |
| Barytes# | tonnes | 1386120 | - | 445005 | 1831125 | - | 45400 | 88476 | - | 12940 | 711239 | - | 858055 | 2689180 |
| China clay# | '000 tonnes | 240 | - | - | 240 | 397 | 700 | 152 | - | 22 | 10505 | - | 11775 | 12015 |
| Chromite* | '000 tonnes | - | - | - | - | - | - | - | - | 15 | 171 | - | 186 | 186 |
| Copper* | | | | | | | | | | | | | | |
| Ore | '000 tonnes | - | - | - | - | - | 666 | - | - | - | - | - | 666 | 666 |
| Metal | '000 tonnes | - | - | - | - | - | 9.12 | - | - | - | - | - | 9.12 | 9.12 |
| Corundum*# | tonnes | - | - | - | - | 5824 | - | 9282 | - | - | 62007 | - | 77113 | 77113 |
| Dolomite*# | '000 tonnes | 53938 | 1044 | 829 | 55811 | 1352 | 550 | 1765 | - | 132511 | 6380 | - | 142557 | 198369 |
| Felspar# | tonnes | 1118885 | 115370 | 422958 | 1657214 | 2079950 | 153711 | 1480263 | - | 3832370 | 1611099 | 145995 | 9303388 | 10960602 |
| Fireclay# | '000 tonnes | 114 | 647 | - | 760 | 42 | 79 | 55 | - | 908 | 8566 | - | 9650 | 10410 |
| Fullers Earth | tonnes | - | - | - | - | - | - | - | - | - | 25523983 | - | 25523983 | 25523983 |
| Garnet | tonnes | - | - | - | - | 9051 | 42033 | - | - | - | 1855976 | - | 1907060 | 1907060 |
| Granite (Dim. stone) | '000 cu m | - | - | - | - | - | - | - | - | - | 45494 | - | 45494 | 45494 |
| Graphite* | tonnes | - | - | - | - | - | - | - | - | 123636 | 95818 | - | 219455 | 219455 |
| Iron ore* (haematite) | '000 tonnes | 81 | 102 | - | 183 | 1402 | 381 | 500 | - | - | 23477 | - | 25760 | 25942 |
| Iron ore* (magnetite) | '000 tonnes | - | - | - | - | - | - | - | - | - | 71500 | 14 | 71514 | 71514 |
| Kyanite | tonnes | - | - | - | - | - | - | - | - | - | 48350000 | - | 48350000 | 48350000 |
| Laterite* | '000 tonnes | 24001 | 5377 | 3307 | 32686 | 2061 | 965 | 2164 | - | - | 4832 | 277 | 10299 | 42985 |
| Limestone | '000 tonnes | 1057097 | 347383 | 391504 | 1795984 | 139869 | 11475 | 73412 | 156972 | 885847 | 11144634 | 3025277 | 15437488 | 17233472 |
| Manganese ore* | '000 tonnes | 136 | 3 | 223 | 362 | 2 | 1 | 45 | - | 886 | 203 | 118 | 1256 | 1618 |
| Marble | '000 tonnes | - | - | - | - | - | - | - | - | - | 3 | - | 3 | 3 |
| Mica# | kilograms | - | - | 584885 | 584885 | - | - | - | - | - | - | - | - | 584885 |
| Quartz-silica sand# | '000 tonnes | 5394 | 387 | 6124 | 11904 | 7170 | 4464 | 9810 | 159 | 2651 | 30352 | 367 | 54973 | 66877 |
| Talc/soapstone/ steatite# | '000 tonnes | - | - | - | - | - | - | - | - | - | 20 | - | 20 | 20 |

*Figures rounded off.*

** Reserves/Resources as on 1.4.2013.*

*#:Declared as minor mineral vide Gazette notification dated 10.02.2015.*

**Table – 3 : Details of Exploration Activities in Telangana, 2014-15**

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| **GSI** | | | | | | | |
| **Chromite** | | | | | | | |
| Khammam | Chimalpahad Ultramafic Complex | - | - | - | - | - | LSM has been carried out with a two fold objective of i) to carry out investigation for chromite and ii) PGE along with other mineralisation. The area mainly constitutes the lithounits of the Chimalpahad ultramafic complex represented by anorthosite, leuco-gabbro, gabbro, pyroxenite which are intruded within amphibolites of Khammam schist belt. The chromite occurs as podiform lenses within the ultramafic unit viz. dunite, pyroxenite, websterite, talc-tremolite schist and form thickened sheaths within the layered sequence. These Ultramafic units may be emplaced along the shear zones trending in N-S, NE-SW direction. Leucogabbro is the predominant rock type with 70-80% of plagioclase and 20-30% of mafic minerals. On the basis of percentage of mafic minerals this leucogabbro classified megascopically into gabbroic anorthosite and anorthositic gabbro with mafic and felsic layering. The thickness of layering ranges from few mm to 2-3 cm. The layered portion has been sampled for Chromite & PGE analysis. Few discontinuous lenses of pyroxenite having dimension 4-5 m in length and 1-2 m in width have been noticed around Vinobanagar, Himamnagar and Rangapuram villages. The pyroxenite is blackish green in colour with fine to medium grained texture. Float chromite mineralisation is noticed in Shriramgiri, Jannaram, Linganpeta, Yenkur areas. The chromite mineralisation occurs within talc tremolite schist which is the alteration product of pyroxenite. Talc-tremolite schist with disseminations of chromite is associated with innumerable calcareous material/caliche along the shear zone as observed near Konnayapalem, Yenkur and Linganpeta village. Potential zones for chromite mineralisation was identified within ultramafic units around known mineralised area/old chromite quarries on the basis of abandoned mines, float ores and scattered ultramafic assemblages. During pitting and trenching, the weathered anorthosite along with leucogabbro in trench T3 and T4 and weathered talc-tremolite schist in T5 & T6 were encountered. This weathered talc-tremolite schist (Contd.) |

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | may contain chromite mineralisation. Trenching was carried out in intervening areas between known mineralised zones near Nacharam, Vinobanagar and Himmamnagar area on the basis of exposed in situ pyroxenite bodies. These bodies seemed to be lensoidal and of very small dimension. Seven to eight zones of Ti-V magnetite have been traced near Rampuram Tanda, Ramanapalem, Vinobanagar, Rangapuram, Bajumallayagudem and Burdaraghavpuram villages which may be favourable locale for PGE mineralisation. These bodies are associated with pyroxenite and leucogabbro of Chimalpahad ultramafic complex which indicates that magnetite may be formed as cumulates during fractional crystallisation of basic magma forming layered complex. These zones are having extension over a strike length of approx. 200-300 m and have lumpy, bouldery in nature and sporadic occurrences. The V-Ti magnetite layers at the surface are partially oxidised and broken into rectangular to triangular fragments due to weathering and spread as float-ore covering a large area in the cultivated land. The EPMA analysis of chromite shows $Cr_2O_3$ content ranges from 50.319 to 51.841%, FeO ranges from 29.663% to 30.993%, $Al_2O_3$ ranges from 14.235% to 15.05%, MgO ranges from 2.523 to 10.21%. As per the data so far received from chemical laboratory, the layered anorthosite and massive anorthosite from Chimalpahad ultramafic complex shows Cr% values ranging from 100 -3807 ppm to 10-389 ppm copper and 10-1540 ppm nickel while float chromite ore from the quarry shows 41.09 % of Cr. Whole rock analysis of ultramafics in the area shows low PGE –concentration: Ir = 21 ppb, Ru = 96 ppb, Rh=5 ppb, Pt = 12 ppb and Pd =23 ppb. The chemical analysis of V-Ti magnetite shows FeO up to 46.94%, $TiO_2$ up to 49.06% and $Cr_2O_3$ up to 0.81% and Vanadium up to 6990 ppm. |
| **Coal** | | | | | | | |
| Adilabad (Godavari Valley Coalfield) | Sirpur-Kagaznagar Blocks | - | - | - | - | - | The Sirpur-Sitanagar area is located in the main basin of Godavari Valley Coalfield in Adilabad district. The area comprises of major hill ranges of sandstone and limestone. The altitude varies from 150 m to 450 m. The Sirpur-Kagaznagar exploration block area is covered by the rocks of Upper and Lower Gondwana formations. The overall regional strike of the lithologies is trending NW direction & dip towards NE with varying dip amount but southern side of block gives the NW dip direction. On the basis of borehole drilled by MECL earlier, (Contd.) |

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | borehole in GSS- 1 at elevation 200 m was finalised towards dip section from MECL boreholes MK-13, 22. Drilling commenced on 1st December 2014. Drilling & logging data give the clear picture of lithological variation of formation. Megascopically, Kamthi Formation exposed on surface to approximately 50- 60 m depth. It is brownish coloured, ferruginous in nature with altered feldspar. Grey coloured micaceous sandstone was also observed. Thinly laminated siltstone, Grey shale, Carbonaceous material with plant leaf impression at the depth 64 m gives the indication of presence of organic material. It may be Barren Measure Formation. Borehole encountered Kamthi Formation as well as Barren Measure Formation with < 30 cm carbonaceous bands/coaly bands at depth of 102 m, 118 m, 170 m & 173 m. |
| **Coal** | | | | | | | |
| Adilabad (Godavari Valley Coalfield) | Mangrud Village, Bela Mandal | 1:12500 | 100 | - | - | - | An area of 100 sq km area adjacent to Telangana-Maharasthra border is taken up for large scale mapping in 1:125000. A sandstone body has been identified as well as it's surfacial extension delineated on the field. The body is located south of the Mangrud village and most of the exposures are identified in a nala section (E-W trending). There is reported occurrence of coal in an agricultural borewell dug by locals at a very shallow depth of 15 m. Moreover, in a place called Mukutban in Maharashtra around 4 km North-east from the present area, there are 3 operative open cast mines. One coal seam of around 2 m thickness at a very shallow depth is being mined in that mine. So, this sandstone area (appx 1.5 km) mapped can be taken for drilling of scout borehole around 100 m ± 50 m. The sandstone unit showing faulted contact with adjoining limestone (in the eastern direction and western diresction) resulting in an isolated small basin-like feature where the sandstone and shale of Talchir got deposited. Along with sandstone a thin patch of khaki green coloured siltstone is observed north of the sandstone body. This lithounit is fine grained shale with asorted clast of shale, siltstone of random orientation and random size observed. This can be placed under Talchir formation of Lower Gondwana. An interesting observation is made at the contact between the sandstone of Barakar Formation and shale of Talchir Formation. An exposure of sandstone resembling Pillow has been observed near the Mangrud village (19°44´51.3" and 78°49´51.24"). The structure is elliptical to subrounded in nature, red in colour with |

(Contd.)

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | layering (may be due to exfoliation). This structure is called sand pseudomorph structure. This is for the first time sand pseudomorph structure reported from Godavari Valley Coalfield. Previously, this structure has also been reported from IB-River Coalfield. The limestone of the Mangrud formation has been mapped and samples (13 nos.) for chemical analysis were taken to access the potentiality of the limestone for various industrial use. This is done in view of presence of dolomite mine (M/S Electrosteel Mine, Govindpur) just 1 km east of the limestone area mapped in the present mapping block. The similar limestone is mined in the Maharasthra side for industrial use. Apart from this, in certain exposures mainly near the Penganga river occurrence of manganese is also observed and samples for chemical analysis were taken. The red shale is mostly been exposed along the nala section and a dominant lithology of the entire mapping block. The red shale in the area is mostly very low dipping (1-5°) towards NE. They are also at places showing two sets of joints (350,040). The red shale formation showing alternate thick red coloured and thin pale green coloured shale bands. An area of aprox. 15 sq km previously mapped as red shale has been remapped as recent deposit from areas north of Kapsi village. The areas are showing black coloured soil with few isolated exposure on nala section north of Kapsi (E-W trending nala joining Penganga river) to Maniyarpur village. The recent deposit rests over the red shale of Bela formation. |
| **Coal** | | | | | | | |
| Godavari Valley Coalfield | Rudrakshapalli-Ganugalapalli area | LSM 1:10000 | 25<br>4 | - | - | 21 | On the basis of current study, an area of 25 sq km was delineated for taking up LSM and to initiate mapping on (1: 10000) around 4 sq km. During the mapping (Reconnaitory Survey) and LSM, mainly four Formational units were identified in the area. Gangapur Formation-Whitish colour, fine grained sandstone composed mainly quartz and feldspar (feldspar is mainly kaolonised). This Formation is well exposed in and around Lingalapally village, north of Ganugalapally village (2 km towards north), west of Jamedarbunjara and Nallvarigudem village. It is also exposed to north of Appraopeta village area. Gangpur Formation exposed around Lingalapally village area is bestowed with fossil impression which has been submitted to paleontology division for detailed study. Kota Formation is composed of grayish white to variegated colour sandstone with clay gall/siltstone of varying (Contd.) |

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | size (5 mm to 150 mm). In few places sandstone is marked with mega ripples, scouring structures. It is well exposed in and around Ankapalem, Arlapenta, Kodisalagudem villages, south of Patta Gangaram and in and around Togugudem village area. Kamthi Formation-Brownish colour, hard compact, cross bedded sandstone composed mainly of quartz and feldspar. It is ferruginous in nature. North of High way connecting the Vinayakpuram and Kotta Gangaram Kamthi can be well traced. In and around Pusukunta, Kuturu and east and north of Jinnalegudem village Kamthi is exposed in the form of hills. Maler Formation-Brownish to Light chocolate colour medium to coarse grained, unsorted lithic sandstone composed mainly of quartz as a primary constituent, very less amount of feldspar and some lithic fragment. It is at places very coarse, pebbly to conglomeratic in nature and highly weathered. It is matrix supported sandstone. A total 21 rock samples were collected and 6 samples submitted to petrology division and their results are awaited. Some of the samples from Gangpur Formation is suspected to contain fossil impression were collected and submitted to Paleontology division, GSI, SR, Hyderabad for further study. During the course of mapping fossil wood (>1 mt) is also encountered in the mapping area within the Kota Formation. |
| **Coal** | | | | | | | |
| Godavari Valley Coalfield | Pagaderu (East) sector | - | 6 | 3 | 1848 | - | The regional exploration in Pagaderu (East) sector covering an area of about 6 sq km located to the north of Manuguru Mining block. The exploration area is mostly covered by soil and alluvium. The area composed of the lithounits of Upper, Middle and Lower Kamthi formations. The general strike of the area is N70E-S70W and dipping 10° North westerly. A total of 1848 m drilling was achieved from three boreholes (GPDE- 1, 2 and 3), GPDE-1 borehole drilled from 294.50 m to 631.00 m (drilled depth is 336.50 m) passed through Barakar Formation which is characterised by greyish white, coarse to very coarse grained, massive, micaceous, feldspathic, garnetiferous sandstone with bands/ seams of coal and carbonaceous shale sequence and grey, massive shale. In GPDE-1 borehole, a cumulative thickness of 9.15 m (pre-analysis by CIMFR) of coal intersected within the Lower Kamthi Formation ranging its thickness from 0.50 m to 1.20 m in 12 split sections. It also intersected coal bands/seams of Barakar Formation with a cumulative thickness 38.02 m (Contd.) |

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | (pre-analysis by CIMFR) ranging its thickness from 0.50 m to 11.64 m in 28 split sections. GPDE-1 borehole intersected hot water artesian aquifer at 340.00 m depth having an average temperature of 60°C at surface. GPDE-1 borehole closed at a depth of 631.00 m after intersecting Talchir Formation at 624.99 m depth. GPDE-2 borehole drilled in the down dip side of Pagaderu (East) sector. GPDE-2 borehole drilled up to 770.00 m (drilled depth is 770.00 m), it initiated within Upper Kamthi Formation which is characterised by brownish to yellowish brown, coarse to very coarse grained, massive to occasionally laminated, micaceous sandstone with mainly ferruginous cement also subrounded pebbles of quartzite. GPDE-2 intersected Middle Kamthi Formation at 76.96 m depth, which is characterised by grey to greenish grey, variegated shale and siltstone with occasional bands of red clay and grey, fine grained, micaceous sandstone. It intersected Lower Kamthi Formation at 155.50 m depth which consist of greyish white, coarse grained, massive, micaceous, feldspathic (fully kaolinised) sandstone, grey to dark grey massive shale and siltstone with bands of coal and carbonaceous shale. Intersected Barren Measures at 283.50 m depth. It is of greenish grey to grey, massive shale and siltstone with bands of siderite devoid of coal and carbonaceous shale bands. GPDE-2 intersected Barakar Formation at 356.00 m and still continuing through the same Formation. In GPDE- 2 borehole a cumulative thickness of 5.78 m (pre-analysis by CIMFR) of coal intersected within the Lower Kamthi Formation ranging its thickness from 0.50 m to 1.00 m in 9 split sections. It also intersected coal bands/seams of Barakar Formation with a cumulative thickness 22.36 m (pre-analysis by CIMFR) ranging its thickness from 0.50 m to 4.34 m in 19 split sections. GPDE-3 borehole drilled in the same strike direction of GPDE-1 borheole in Pagaderu (East) sector. GPDE-3 borehole drilled up to 447.00 m (drilled depth is 447.00 m), it initiated within Lower Kamthi Formation which consist of greyish white, coarse grained, massive, micaceous, feldspathic (fully kaolinised) sandstone, grey to dark grey massive shale and siltstone with bands of coal and carbonaceous shale. Intersected Barren Measures at 237.91 m depth. It is of greenish grey to grey, massive shale and siltstone with bands of siderite devoid of (Contd.) |

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | coal and carbonaceous shale bands. GPDE-3 intersected Barakar Formation at 320.00 m and still continuing through the same Formation. In GPDE- 3 borehole, a cumulative thickness of 10.64 m (pre-analysis by CIMFR) of coal intersected within the Lower Kamthi Formation ranging its thickness from 0.50 m to 1.20 m in 14 split sections. It also intersected coal bands/seams of Barakar Formation with a cumulative thickness 2.32 m (pre-analysis by CIMFR) ranging its thickness from 0.55 m to 1.22 m in 3 split sections. In this sector a total of 896 m was geophysically logged in GPDE-1 and GPDE-2 boreholes. |
| **Coal** | | | | | | | |
| Godavari Valley Coalfield | Bayyaramcherla area | - | - | - | - | - | Petrified wood is reported about 2.5 km NW of Janampeta in old building stone quarry (Max. Size 0.90 m length and 0.65 m width). The study area is covered by the rocks of Upper Kamthi, Maleri and Kota Formations. Rocks of Upper Kamthi are very well exposed in the southernmost boundary of the study area occupying the highlands/hills and are characterised by reddish brown color, coarse to very coarse grained, ferruginous, pebbly, trough cross bedded sandstone and pebble beds. The clasts are comprised of quartz and quartzite. Kota sandstone is exposed in the northern part of study area mostly in eastwest trending hills and it is characterised by milky white to pale brown color, coarse to very coarse grained, pebbly, cross bedded sandstone. Pebbles are comprised to quartz, quartzite and occasionally siltstone. Also, this sandstone contains two types of clay galls i.e. white & lilac color vary in size from few centimetres to several meters. Contact between Upper Kamthi Formation and Maleri Formation was refined. The rocks of Upper Kamthi Formation in the southernmost boundary of the study area were mapped previously as Maleri Formation. The drilling of Borehole GBC-1 commenced on 22.08.14 and progressed to a depth of 403.3 m passing through Maleri, and Kamthi. The 1st coal seam of 0.25 m was intersected within lower Kamthi Formation at 295.92 m depth. Several coal seams were intersected in the Lower Kamthi Formation between 295 m and 356 m with a maximum thickness of 1 m for an individual coal seam. A cumulative thickness of 4.05 m coal was obtained in 06 splits ranging in thickness from 0.50 m to 1.00 m, within Lower Kamthi Formation. |
| **Diamond** | | | | | | | |
| Mahabubnagar and Kurnool | Somasila area | - | - | - | - | 95 | A G4 stage investigation was taken up. In addition to field traverses, stream sediment sampling was carried out and 95 numbers of |

(Contd.)

Table – 3 ( Contd.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | samples have been collected. A total of 78 numbers of heavy mineral concentrates are examined under binocular microscope to identify KIMs. Few suspected KIMs (spinel) are confirmed as Cr-spinel by EPMA studies showing their kimberlite affinity. Two new lamproite clusters were located for first time near Somasila village, Kollapur Mandal, Mahabubnagar district, at the NW margin of the Cuddapah basin. The ultrapotassic rocks are emplaced into the lower Cuddapah sedimentary sequences along WNW-ESE trend. So far seven numbers of lamproite bodies are discovered in Somasila area. The lamproite bodies are intersected in the hills of Cuddapah sedimentary sequences and found up to the height of 320 m in the Vempalle dolomite. The lamproite bodies are covered by Banganapalli conglomerate and quartzite of Kurnool Group in many places. Besides Somasila lamproites, one more lamproite cluster is identified to the south of Kollapur village where lamproite dykes emplaced in the margin of Cuddapah basin and PGC basement following a WNW-ESE trend. Megascopically, the lamproites are altered, brownish grey to greenish grey, hard, compact, vesicular (due to the removal of primary minerals) contain pseudomorphs of megacrystic to macrocrystic olivine, serpentine and secondary calcites. In addition, disseminated sulphides are also seen occurring as rim or necklace. Limited petrological studies revealed that the rock is made up of microphenocrysts of altered olivine, pyroxene, phlogopite, and translucent to opaque minerals set in a groundmass rich in carbonate, phlogopite, serpentine, and chlorite. At the first outlook this exotic rock seems very fresh among their rock clan in South India. The investigation will be continued in FS 2015-16. |
| Mahabubnagar and Kurnool | Gurakonda, Koilsagar, Chinnamungalchedu, Manikonda and Komreddipalli | - | - | - | - | 150 | A G4 stage investigation was taken up in five sub blocks. Detailed ground traverses were conducted in all five sub blocks to explore kimberlites. Numerous calcrete zones were observed and examined for their kimberlite affinity. A total of 150 nos. of stream sediment samples were collected from five sub blocks namely Gurakonda, Koilsagar, Chinnamungalchedu, Manikonda and Komreddipalli. The samples were processed and examined to locate kimberlites. Suspected kimberlite zones identified in Gurakonda sub block after the recovery of fresh and coarser kimberlite indicator minerals. The calcrete chemistry of Gorakonda sub block matches with Wajrakarur calcretes (Chigicherla cluster). (Contd.) |

Table – 3 ( Concld.)

| Agency/ Mineral/ District | Location | Mapping | | Drilling | | Sampling (No.) | Remarks Reserves/Resources estimated |
|---|---|---|---|---|---|---|---|
| | | Scale | Area (sq km) | No. of boreholes | Meterage | | |
| | | | | | | | Those calcrete zones which have kimberlitic affinity were identified for pitting/auger drilling. The investigation is completed. |
| Rangareddy, Mahabubnagar and Hyderabad | - | - | 515 | - | - | 120 | G4 stage investigation was taken up. Eight blocks have been identified in structurally interpreted lineament map. A total of 515 sq km area has been covered by taking traverses. Dolerite dykes are emplaced along some of the lineaments. A total of 30 numbers of regional stream sediment samples (covering 25 to 30 sq km) and 90 numbers of detailed stream sediment samples (5 sq km) from appropriate trap sites have been collected and processed to recover heavies. One hundred samples were scanned under binocular microscope to identify kimberlite indicator minerals (KIMs). A lamprophyre dyke (16°56´6.8" N:78°6´36.7" E), located 1.5 km north of Raghavapuram, trending N-S direction and approximately 50 m length and 30 cm width. A hornblendite, located 3 km SE of Bodijanampeta (16°54´38.6" N: 78°14´8.1" E) trending N40°W with 150 m × 80 m dimension, is noticed. It consists of phenocrysts of 2 cm to 3 cm size euhedral crystals of amphiboles and feldspars form the groundmass. A lamproite dyke, located 1.5 km southwest of Chintalapalli, trending E-W direction and approximately 1 km long (as inferred from stray boulders lying in agricultural field). Megascopically, these lamproites are grey coloured, fine grained and highly altered. In thin section, these lamproites are highly altered mostly into carbonate and chlorites. At places pseudomorph of leucite is also observed. A hornblendite, located 700 m NW of Emulnaram village is trending N-S and extends for 200 m with a width of 120 m. It consists of phenocrysts of 2 cm to 3 cm size euhedral crystals of amphiboles and amphiboles and feldspars in groundmass as well. The investigation is completed. |
| **Iron ore** | | | | | | | |
| Karimnagar | Yerrabali area | - | 515 | - | - | 120 | G4 stage investigation was carried out to search for iron ore. Large Scale Mapping helped in delineation of a NW-SE trending banded magnetite/haematite quartzite band for a strike length of 4.5 km with width varying from 50 m to 70 m. Another band trending NNW to SSE for a strike length of 2 km with a width of 30 m is recorded to the east of the above band. $Fe_2O_3$ values within the banded magnetite/haematite quartzite range from 30.94 to 80.22%. The investigation has been completed. |

## Production

Though the State is formed on 2nd June 2014, figures for the current year and previous years i.e. 2012-13 and 2013-14 for the state are given for comparison purpose by clubbing the mineral production in the districts of Telangana which were the part of erstwhile Andhra Pradesh in the previous year. The value of mineral production (excludes atomic mineral and value for February and March in respect of 31 minerals declared as minor mineral vide Gazette notification dated 10.02.2015) in Telangana at ₹ 11,439 crore in 2014-15 increased by 45% as compared to the previous year. Coal and limestone were the principal minerals produced in the State which together accounted for about 99% of the total value of the mineral production during 2014-15. The other minerals produced in the State were iron ore, manganese ore, barytes, clay (others), dolomite, felspar, laterite, quartz, sand (others) and shale.

Telangana claims 9th position among the states in the country with a contribution of about 4% to the total value of the mineral production in the country. Among the minerals produced in the state, the output of shale increased by 47% while that of barytes increased 30%, laterite 11% and coal 4%. However, a decline in production was observed for limestone and sand (others) 5% each, quartz 7%, iron ore 12%, dolomite 15%, clay (others) 29% and manganese ore 32% as compared to the output in the previous year (Table-5).

Since the information on value of minor minerals for 2013-14 is not available, the estimated value of minor minerals production is included in the estimate for Andhra Pradesh.

The number of reporting mines in Telangana during 2014-15 was 201 as against 231 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 -6.

**Table – 5: Mineral Production in Telangana, 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** | | **238** | | **96830482** | **231** | | **78976294** | **201** | | **114393060** |
| Coal | '000t | 50 | 53200 | 91695800 | 49 | 50500 | 73998000 | 48 | 52500 | 109642600 |
| Iron Ore | '000t | 3 | 27 | 16755 | 2 | 42 | 24704 | 3 | 37 | 21950 |
| Manganese Ore | t | 10 | 14143 | 50410 | 5 | 10921 | 38415 | 4 | 7435 | 22470 |
| Barytes# | t | 2 | 12139 | 17809 | 1 | 15881 | 37130 | 2 | 20654 | 51635 |
| Clay (others)# | t | 2 | 82100 | 8381 | 2 | 73225 | 7584 | 2 | 51915 | 5348 |
| Corundum# | kg | 1 | - | - | - | - | - | - | - | - |
| Dolomite# | t | 4 | 691283 | 357571 | 4 | 573152 | 280146 | 4 | 485222 | 260007 |
| Felspar# | t | 25 | 430993 | 136963 | 26 | 401021 | 106307 | 21 | 401072 | 107680 |
| Kaolin# | t | - | - | - | 1 | - | - | - | - | - |
| Laterite# | t | 33 | 1565821 | 185545 | 41 | 1712374 | 201482 | 33 | 1900673 | 218751 |
| Limestone | '000t | 33 | 26894 | 4112018 | 33 | 25120 | 3986981 | 31 | 23956 | 3747633 |
| Quartz# | t | 65 | 378317 | 93368 | 57 | 394733 | 96494 | 43 | 367467 | 96146 |
| Sand (others)# | t | 7 | 1865275 | 149641 | 7 | 1876421 | 194988 | 7 | 1778118 | 212561 |
| Shale# | t | 3 | 89000 | 6221 | 3 | 59100 | 4063 | 3 | 87000 | 6279 |

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

*(1) The figures reported for 2012-13 & 2013-14 are for comparative purpose only by considering the corresponding districts under the newly formed states.*

*(2) Due to non-availability of district-wise minor mineral data the figures reported against Andhra Pradesh includes that of districts falling under Telangana for 2012-13 to 2014-15.*

*#:Declared as minor mineral vide Gazette notification dated 10.02.2015.*

## Table – 6 : Principal Mineral-based Industries in Telangana

| Industry/plant | Capacity ('000 tpy) |
|---|---|
| **Aluminium Foil** | |
| Hindalco, Kollur, Medak. | 4 |
| **Asbestos Products** | |
| Bhagyanagar Wood Plast Ltd, Nandikandi, Distt. Medak. | 60 |
| Hyderabad Industries Ltd, Sanathnagar, Distt. Rangareddy. | 160 |
| Hyderabad Industries Ltd, Thimmapur. | 230 |
| J.J. Spun Pipe Industries, Arsapalli, Distt. Nizamabad. | 4.5 |
| Visaka Industries Ltd, Medak. | 36 |
| **Bleaching Clay** | |
| Ashapura Clay Tech. Ltd, Dharur, Distt. Rangareddy. | 20 (Fuller's earth granules)<br>15 (Bentonite granules) |
| **Cement** | |
| Anjani Portland Cements Ltd (Subs. of Chettinad Cement), Anjanipuram, Distt. Nalgonda. | 1160 |
| CCI Ltd, Adilabad, Distt. Adilabad. | 400 |
| CCI Ltd, Tandur, Distt. Rangareddy. | 1000 |
| Deccan Cements Ltd, Bhavanipuram, Distt. Nalgonda. | 2300 |
| India Cements Ltd, Malkapur, Distt. Rangareddy. | 2400 |
| India Cement (Raasi Cements), Wadapally, Distt. Nalgonda. | 2500 |
| Keerthi Industries Ltd, Mellacheruvu, Distt. Nalgonda. | 620 |
| Kesoram Cement, Basantnagar, Distt. Karimnagar. | 1750 |
| Mancherial Cement Co. (P) Ltd, Mancherial, Distt. Adilabad. | 330 |
| My Home Cement Industries Ltd, Mellacheruruvu, Distt. Nalgonda. | 3200 |
| NCL Industries Ltd, Simhapuri, Distt. Nalgonda. | 990 |
| Orient Cement, Devapur, Distt. Adilabad. | 3000 |
| Penna Cement Industries Ltd, Tandur, Distt. Rangareddy. | 2000 |
| Penna Cement Industries Ltd, Ganeshpahad, Distt. Nalgonda. | 1200 |
| Rain Commodities Ltd (Rain Cements), Ramapuram, Distt. Nalgonda. | 1500 |

(Contd.)

Table - 6 (Concld.)

| Industry/plant | Capacity ('000 tpy) |
|---|---|
| Sagar Cements Ltd, Mattampally, Distt. Nalgonda. | 2350 |
| Zuari Cements Ltd (Sri Vishnu Cements Works), Dondapadu, Sitapuram, Distt. Nalgonda. | 3600 (tpd) |
| **Ceramic/Sanitaryware** | |
| Hindustan Sanitaryware & Industries Ltd, Bibinagar, Distt. Nalgonda. | 1.8 |
| Montana International Ltd, Faralwadi, Distt. Medak. | 3.6 |
| Restile Ceramics Ltd, Malkapur. Distt. Medak. | 1.4 (mill. sq m) |
| **Fertilizer** | |
| Chemtech Fertilizers Ltd, Kazipalli, Medak. | 33 (SSP) |
| **Glass** | |
| Ceat Ltd, Thimmapur, Distt. Mahabubnagar. | 10 |
| **Sponge Iron** | |
| Ashirwad Steels & Ind. Ltd, Veliminedu, Distt. Nalgonda. | 60 |
| Anand Metallics & Power Pvt. Ltd, Kodi Cherla, Distt. Mahabubnagar. | NA |
| Bright Star Iron & Steel Ltd, Mekaguda, Distt. Mahabubnagar | NA |
| Binjusaria Sponge & Power Pvt. Ltd, Farooq Nagar, Distt. Mahabubnagar. | 30 |
| Kumar Metallurgical Corpn. Ltd, Nalgonda. | 60 |
| Lakshmi Gayatri Iron & Steel, Kethepally Distt. Nalgonda. | NA |
| NMDC (Sponge Iron Division), Paloncha, Khammam. | 60 |
| Reactive Metals of India Ltd, Appajipally Distt. Mahabubnagar. | 100 (TPD) |
| Sunder Steels Ltd, S.D. Road, Secunderabad. | 24 |
| **Ferro-alloys** | |
| Nav Bharat Ferro Ventures Ltd, Paloncha, Distt. Khammam. | 125 |
| Shree Raghvendra Ferro alloys Pvt Ltd, Nalgonda. | 15 |
| VBC Ferro Alloys Ltd, Rudraram, Distt. Medak. | 48 |
| **Refractory** | |
| MPR Refractories Ltd, Medak. | 9.5 |
| Raasi Refractories, Narketapally, Distt. Nalgonda. | 35 |

***Note:*** *Data, not readily available for fertilizer and cement Industries on respective websites, hence it has been taken from FAI Statistics, 2014-15 and Survey of Cement Industry & Directory, 2015 respectively.*