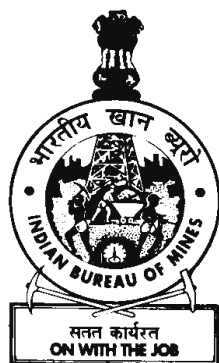


STATE REVIEWS



Indian Minerals Yearbook 2012

(Part- I)

51st Edition

STATE REVIEWS
(Andhra Pradesh)

(FINAL RELEASE)

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ANDHRA PRADESH

Mineral Resources

Andhra Pradesh is the sole holder of country's resources of shale & slate and is the leading producer of apatite, barytes, ball clay, dolomite, garnet, laterite, mica, limestone and vermiculite. The state is the sole producer of asbestos. The State accounts for 94% barytes, 78% kyanite, 70% corundum, 61% ball clay, 21% limestone, 41% mica and 33% garnet resources of the country. The State is endowed with the internationally known black, pink, blue and multicoloured varieties of granites. Krishna-Godavari basin areas of the State have emerged as new promising areas for hydrocarbons, especially natural gas.

Important minerals occurring in the State are **apatite** in Visakhapatnam district; **asbestos** in Cuddapah district; **ball clay** in West Godavari district; **barytes** in Anantapur, Cuddapah, Khammam, Krishna, Kurnool, Nellore and Prakasam districts; **calcite** in Anantapur, Cuddapah, Kurnool and Visakhapatnam districts; **china clay** in Adilabad, Anantapur, Chittoor, Cuddapah, East Godavari, West Godavari, Guntur, Kurnool, Mahbubnagar, Nalgonda, Nellore, Rangareddi, Visakhapatnam and Warangal districts; **coal** in Adilabad, East and West Godavari, Karimnagar, Khammam and Warangal districts; **corundum** in Anantapur and Khammam districts; **dolomite** in Anantapur, Khammam, Kurnool and Warangal districts; **felspar** in Anantapur, Cuddapah, West Godavari, Hyderabad, Khammam, Mahbubnagar, Medak, Nellore, Rangareddi and Vizianagaram districts; **fireclay** in Adilabad, Chittoor, Cuddapah, East Godavari, West Godavari, Kurnool, Nalgonda and Srikakulam districts; **garnet** in East Godavari, Khammam and Nellore districts; **granite** in Anantapur, Chittoor, Cuddapah, Guntur, Karimnagar, Khammam, Krishna, Mahbubnagar, Medak, Nalgonda, Nellore, Prakasam, Rangareddi, Srikakulam, Vizianagaram and Warangal districts; **iron ore (hematite)** in Anantapur, Cuddapah, Guntur, Khammam, Krishna, Kurnool and Nellore districts; **iron ore (magnetite)** in Adilabad, Prakasam and Warangal districts; **lead-zinc** in Cuddapah, Guntur and Prakasam districts; **limestone** in Adilabad, Anantapur, Cuddapah, East Godavari, West Godavari, Guntur, Hyderabad, Karimnagar, Krishna,

Kurnool, Mahbubnagar, Nalgonda, Nellore, Rangareddi, Srikakulam, Visakhapatnam and Vizianagaram districts; **manganese ore** in Adilabad, Srikakulam and Vizianagaram districts; **mica** in Khammam and Nellore districts; **ochre** in Cuddapah, West Godavari, Guntur, Kurnool and Visakhapatnam districts; **pyrophyllite** in Anantapur district; **quartz/silica sand** in Anantapur, Chittoor, Cuddapah, West Godavari, Guntur, Hyderabad, Khammam, Krishna, Kurnool, Mahbubnagar, Medak, Nalgonda, Nellore, Prakasam, Rangareddi, Srikakulam, Visakhapatnam, Vizianagaram and Warangal districts; **quartzite** in Kurnool, Srikakulam, Visakhapatnam and Vizianagaram districts; **talc/soapstone/steatite** in Anantapur, Chittoor, Cuddapah, Khammam and Kurnool districts and **vermiculite** in Nellore and Visakhapatnam districts. **Petroleum & natural gas** deposits of importance are located in the onshore and offshore areas of Krishna-Godavari basin of the State.

Other minerals that occur in the State are **bauxite** in East Godavari and Visakhapatnam districts; **chromite** in Khammam and Krishna districts; **copper** in Guntur, Khammam, Kurnool and Prakasam districts; **diamond** in Anantapur, Krishna and Kurnool districts; **fuller's earth** in Medak and Rangareddi districts; **gold** in Anantapur, Chittoor and Kurnool districts; **graphite** in East Godavari, West Godavari, Khammam, Srikakulam, Visakhapatnam and Vizianagaram districts; **gypsum** in Guntur, Nellore and Prakasam districts; **kyanite** in Khammam, Nellore and Prakasam districts; **magnesite** in Cuddapah district; **marble** in Khammam district; **pyrite** in Kurnool district; **sillimanite** in West Godavari district; **silver** in Guntur district; **titanium minerals** in East Godavari, Krishna, Nellore, Srikakulam and Visakhapatnam districts; and **tungsten** in East Godavari district (Tables - 1 and 2).

Exploration & Development

The details of exploration activities conducted by various agencies for coal and other minerals during 2011-12 are furnished in Table - 3.

ONGC continued its seismic survey and drilling for exploration of petroleum & natural gas in KG onland basin. In 2011-12, two new oil and three gas prospects were discovered in East Godavari, West Godavari & Krishna districts. Details of exploration activities are furnished in Table - 4.

Table -1: Reserves/Resources of Minerals as on 1.4.2010 : Andhra Pradesh

Mineral	Unit	Reserves				Remaining resources				Total resources (A+B)			
		Proved STD 111	Probable STD121	Probable STD122	Total (A)	Feasibility STD211	Pre-feasibility STD221	Measured STD331	Indicated STD332		Inferred STD333	Reconnaissance STD334	Total (B)
Apatite	tonne	36019	-	1680	37699	-	-	-	-	200163	-	200163	237862
Asbestos	tonne	5754	-	9028	14782	856	3117	9191	1500	27085	-	41749	56531
Ball clay	tonne	6017412	-	1288720	7306132	1821233	2806267	9512513	2279330	27555824	-	43975167	51281299
Barytes	tonne	29396236	79736	1845270	31321242	173429	4252061	2500159	387394	29632557	105721	37157193	68478435
Bauxite	'000 tonnes	-	-	-	-	-	-	-	188971	138120	288176	-	615267
Calcite	tonne	3267	500	-	3767	-	-	104970	5200	122148	-	8795018	8798785
China clay	'000 tonnes	2524	339	2205	5068	683	1490	1147	691	61883	3088	69108	74176
Chromite	'000 tonnes	-	-	-	-	-	-	-	15	172	-	187	187
Copper													
Ore	'000 tonnes	-	-	-	-	686	666	105	5791	1000	-	8248	8248
Metal	'000 tonnes	-	-	-	-	6.88	9.12	1.05	97.45	8.32	-	122.82	122.82
Corundum	tonne	-	-	-	-	5824	7	9282	-	62008	-	77121	77121
Diamond	carat	-	-	-	-	-	-	-	200483	1524317	98155	1822955	1822955
Dolomite	'000 tonnes	55507	2082	10708	68296	50324	2851	29135	132589	896855	1848	1114156	1182452
Felspar	tonne	5469094	408487	2301765	8179346	2504362	274566	2181547	5476671	2975298	145995	13619215	21798561
Fireclay	'000 tonnes	548	647	381	1576	50	735	1314	908	18444	132	21638	23214
Fuller's earth	tonne	-	-	-	-	-	-	-	-	25523983	-	25523983	25523983
Garnet	tonne	2911387	4500	710000	3625887	9051	42033	-	8800000	6587776	-	15438860	19064747

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(Contd.)

Table - 1 (contd.)

Mineral	Unit	Reserves										Remaining resources				Total resources (A+B)
		Proved		Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)		
		STD 111	STD121	STD122	STD221			STD222								
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Gold																
Ore (primary) tonne		-	-	-	-	655133	-	889515	8059000	55000	2616699	-	12275347	12275347		
Metal(primary)/tonne		-	-	-	-	2.45	-	3.57	16.93	0.17	12.60	-	35.72	35.72		
Granite																
(Dim. stone) '000 cu m		-	-	-	-	-	-	-	-	-	2405890	-	2405890	2405890		
Graphite tonne		-	-	-	-	-	-	1135	-	124759	301306	-	427199	427199		
Gypsum '000 tonnes		-	-	-	-	-	-	-	-	-	404	-	404	404		
Iron ore (hematite) '000 tonnes		60038	58011	34167	152217	551	20988	32475	377	4624	169955	291	229261	381478		
Iron ore (magnetite) '000 tonnes		-	-	-	-	43034	-	-	13800	1266666	140027	14	1463541	1463541		
Kyanite tonne		-	-	-	-	-	-	399	-	-	80353829	-	80354228	80354228		
Laterite '000 tonnes		4349	2172	6942	13463	1830	60	2625	-	1107	6895	277	12794	26257		
Lead-zinc																
Ore '000 tonnes		-	-	-	-	-	-	-	1000	4159	17530	-	22689	22689		
Lead metal '000 tonnes		-	-	-	-	-	-	-	28.70	119.53	688.65	-	836.88	836.88		
Zinc metal '000 tonnes		-	-	-	-	-	-	-	12.40	43.57	7.19	-	63.16	63.16		
Limestone '000 tonnes		2483095	581935	983048	4048078	311682	64645	460685	215847	1075504	28112011	3147926	33388299	37436377		
Magnesite '000 tonnes		-	-	-	-	-	-	-	-	-	80	-	80	80		
Manganese ore '000 tonnes		1719	596	1841	4155	412	130	251	188	4176	7877	410	13443	17598		
Marble '000 tonnes		-	-	-	-	-	-	-	-	-	3	-	3	3		
Mica tonnes		162325	15247	2790	180362	7794	5101	-	3750	5502	18277	-	40424	220786		

(Contd.)

Table - 1 (concl.d.)

Mineral	Unit	Reserves				Remaining resources					Total resources (A+B)			
		Proved STD 111	Probable		Feasibility STD211	Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)				
			STD121	STD122								Total (A)	Pre-feasibility STD221	STD222
Ochre	tonne	1692839	344121	631277	2668237	-	97810	1199762	347681	-	6569575	-	8214828	10883065
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	-	880	-	880	880
Pyrophyllite	tonne	245019	41841	171143	458003	121475	33360	-	-	75201	662193	-	892229	1350232
Quartz-silica sand	'000 tonnes	33590	3320	35772	72682	16664	6242	25109	5404	10965	65867	6099	136349	209031
Quartzite	'000 tonnes	2114	406	2131	4651	548	1009	7481	-	4390	5209	295	18931	23583
Sillimanite	tonne	518000	-	170000	688000	-	-	-	-	7430300	1526200	-	8956500	9644500
Shale	'000 tonnes	14992	76	263	15331	-	-	245	-	-	252	83	580	15911
Slate	'000 tonnes	-	-	-	-	-	113	1187	-	-	1069	-	2369	2369
Silver														
Ore	tonne	-	-	-	-	-	-	-	-	-	16950000	-	16950000	16950000
Metal	tonne	-	-	-	-	-	-	-	-	-	128.13	-	128.13	128.13
Talc/soapstone														
steatite	'000 tonnes	1031	1044	3060	5135	71	168	1187	-	369	3777	537	6109	11243
Titanium minerals	tonne	-	-	-	-	-	-	-	-	-	76702509	-	76702509	76702509
Tungsten Ore	tonne	-	-	-	-	-	-	-	3640000	4700800	5952500	509000	14802300	14802300
Contained WO ₃	tonne	-	-	-	-	-	-	-	5096.00	6574.64	8273.65	318.28	20262.57	20262.57
Vermiculite	tonne	102058	24593	50939	177590	1912	3981	2750	35195	9878	119270	3600	176586	354176

Figures rounded off.

* Resources of ilmenite, rutile, leucosene and zircon as per Department of Atomic Energy are provided in the respective Mineral Reviews.

The proved and indicated balance recoverable reserves of crude oil and natural gas as on 1.4.2012 in the State are 5.59 million tonnes and 42.30 billion cu m, respectively.

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Table – 2: Reserves/Resources of Coal as on 1.4.2012 : Andhra Pradesh

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total/Godavari Valley	9566.61	9553.91	3034.34	22154.86

*Source: Coal Directory of India, 2011-12.***Table – 3 : Details of Exploration Activities in Andhra Pradesh, 2011-12**

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Chromite Krishna & Khammam	Kondapalli & Gangineni	-	-	-	-	215	Reconnaissance stage investigation (G-4) was taken up during FS 2010-12 between Kondapalli and Gangineni area to assess the potential of the area for chromite mineralisation. The rock types encountered in Kondapalli and surrounding areas are pyroxene granulite and charnockite with enclaves of pyroxenite. To the north of Village Koduru, a mappable pyroxenite body, which is 28 m in length and 17 m in width, is delineated and it shows chromite mineralisation. The chromite mineralisation occurs as lenses, bands, pockets and disseminations within steeply dipping lenticular bodies of pyroxenite. Chromiferous pyroxenite bodies are small in size and exposed as discontinuous bands having maximum dimensions 25 m in length and 17 m in width. In situ chromite mineralisation was recorded in all old chromite opencast quarries present in the area. The distribution of chromite is highly variable and irregular in the pyroxenite. The chromite ore is massive in character, black in color with sub-metallic to metallic luster. It shows granular texture with high specific gravity. At places stringers of chromite with 5 cm in length and 1cm in width are also observed within charnockite unit. Bedrock samples generated from old workings varying in length from 30 m to 75 m and width of 0.5 m to 2.5 m around Village Kondapalli indicated Cr ₂ O ₃ value ranging from 20.82% - 43.04%. EPMA study of pyroxenite and chromitite reveals presence of Cr ₂ O ₃ in a range of 30% with higher % of FeO and MgO. Also EPMA studies of two chromite samples show presence of PGE grains of Rb & Os (Rubidium & Osmium). Monazite grains are also present within the

(Contd.)

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Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Chromite Krishna & Khammam (contd.)							Chromitite. These monazites are mainly cerium (Ce) rich with very less concentration of lead (Pb). Analysis of 191 chromite bedrock samples assayed Cr % values ranging from 6.66% to 29.44%. Analytical results of 7 chromite samples for PGE indicate values Pt 30 ppb, Pd 65 ppb, Ir 15 ppb, Ru 185 ppb and Rh 135 ppb. The investigation will be continued.
GSI Coal (Godavari valley coal field) Khammam & West Godavari	Vutasamudram- Venkatapuram	-	-	03	-	-	Reconnaissance stage (G-4) exploration was taken up to explore and evaluate coal potentiality of Barakar and Lower Kamthi Formations already established in northern adjoining Naraynapuram-Pattayagudem and Sitanagaram areas. The uppermost coal/carbonaceous shale zone, viz. C zone of Lower Kamthi Formation containing 3 to 8 split sections varying in individual thickness from 0.60 m to 1.80 m and cumulative thickness from 3.14 m to 8.98 m was intersected in boreholes BH-1 and BH-3. The middle coal/carbonaceous shale zone, viz. B zone of Lower Kamthi Formation containing 12 split sections having individual thickness varying from 0.50 m to 1.45 m with cumulative thickness of 10.04 m was intersected between 379.25 m and 435.75 m depths in borehole BH-3. The work is in progress.
-do- Khammam	Bugga- Khamamtogu	-	-	-	-	-	Prospecting stage (G-3) regional exploration was taken up during FS 2010-12 in Southern Part of main basin of Godavari Valley Coalfield to explore and evaluate coal resource potentiality of Barakar coal seams already established in the adjoining Manuguru Mining Block located to the northeast. In BH-2 a total of 12 nos of thin coal/carbonaceous shale seams/bands were intersected within Lower Kamthi Formation between 43.79 m and 187.35 m depths having individual thickness varying from 0.55 m to 1.60 m with cumulative thickness of 9.48 m. The coal/ carbonaceous shale zone recorded within Barakar Formation between 280.30 m and 481.37 m depths containing 4 split sections varying in individual thickness from 0.51 m to 1.25 m with cumulative thickness of 3.36 m. The work is in progress.

(Contd.)

STATE REVIEWS

Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Diamond Mahaboobnagar, Nalgonda and Rangareddy	Amangal and Bhimanapali	1:50,000	550.0	-	-	112	Reconnaissance stage investigation (G-4) was taken up in this blocks for kimberlite rock, the host rock for diamond. The study area is a part of the Eastern Dharwar Craton known for emplacements of several kimberlite pipes and forms the catchment for the ancient alluvial diamond workings of the river Krishna and therefore is a suitable target area for indicator mineral surveys. In this block exposes rocks of the Peninsular Gneissic Complex comprising of granodiorite-granite suite which includes remnants of supracrustals belonging to Dharwar Supergroup which are later intruded by pegmatite, quartz veins and basic dykes of dolerite, gabbro and pyroxenite composition. Search for kimberlites / lamproite in Paluvayi block in District Nalgonda, (G-4) has been undertaken with an objective to locate kimberlite lamproite in Paluvayi Block in District Nalgonda. The Paluvayi block exposes rocks of the Peninsular Gneissic Complex which comprises granodiorite and granite. This granodiorite-granite suite includes remnants of supracrustals belonging to Dharwar Super group. The gneiss and granites are later intruded by pegmatite, quartz veins and basic dykes of dolerite, gabbro and pyroxenite composition. The area is basically drained by River Halia, a tributary of River Krishna. Systematic stream sediment sampling was carried out and the heavy mineral concentrates are being examined for kimberlite indicator minerals.

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Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Fullerene Cuddapah	Cuddapah basin	-	-	-	-	-	Reconnaissance stage (3-4) investigation was taken up during FS 2010-12 at the request of DGM, to search for possible occurrence of fullerene within carbonaceous tuff of Magampet barite prospects. The Mangampet is known for world-class single largest deposit of barites. Geologically the rocks belong to the Pullampet Formation (time equivalent of Cumbum Formation) of Nallamalai Sub-basin, Cuddapah Basin of Mesa Proterozoic age. The carbon spherules and tubules within the dolomite and Stromatolitic dolomite was observed for the first time during the connoitre fieldwork. Pseudotachylites are observed within the dolomites in the Mangampet barite mines in the vicinity of the breccia zone. The Pseudo-tachylites are characterised by glassy black colour, aphanitic nature, and a few mm thickness. The glassy carbon mineralisation observed within the dolomites is occurring as spherules and tubules showing conchoidal fracture, black streak, low specific gravity and not soiling the finger (as like coal or graphite). It shows resemblance to the shungites of Proterozoic rocks of Karelian Province, Russia (where natural fullerenes were reported by Dr.Peter R Buseck) in its physical properties and XRD peaks. Mapping and sampling of the carbonaceous tuff / shale has been carried out and sent for chemical analysis. Analytical results so far received have not indicated any significant values for fullerene. The work has been completed.

(Contd.)

STATE REVIEWS

Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Gold Cuddapah	Tellakonda	1:1200	13	04	-	-	Prospecting stage investigation (G-3) was carried out during FS 2010-12 for gold on the basis of encouraging results of earlier geochemical studies. The litho-units exposed comprise of granite gneiss, quartz-muscovite-sericite schist, metabasalt, amphibolite, quartz reef and gabbro dykes. The quartz reef is sheared and brecciated and contains sulphide mineralisation. Exploration by drilling was carried out with an objective to test the subsurface behaviour of the mineralised zone of 550 m strike length at 60 m vertical depth. The four boreholes have intersected feeble to moderate mineralised zones in the form sheared quartz veins within the amphibolite and granite. The analytical results of drill core samples have indicated feeble to moderate gold values with the weighted average ranging from 0.11 g/t. - 1.05 g/t. The highest gold value of 1.05 g/t has been noted in sulphide bearing quartz vein over a true width of 0.48 cm, intersected in borehole BH-1 from 86.45 m to 86.95 m depth. The exploration has been completed.
GSI Gold Mahaboobnagar and Kurnool	West of Remta	1:12,500	68.0	-	-	164	Reconnaissance stage investigation (G-4) was carried out during FS 2010-12 for gold and other associated elements in the area. The Gadwal Schist Belt is one of the potential belts in the eastern part of Dharwar craton and it is a hook shaped belt with two arms, the eastern arm considered as the main Gadwal Schist Belt and the Western arm joins the Raichur Schist belt in Karnataka. In the western arm, the schist belt consists of meta acid and intermediate volcanics and granites & granodiorites further intruded by dolerite dykes, pegmatite and quartz veins. Near Nagaladinne, occurrence of mylonite was noticed. Samples were analysed for gold content, out of 164 samples only one stream sediment sample analysed gold content of 150 ppb. No significant gold mineralised zone could be delineated.

(Contd.)

STATE REVIEWS

Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI PGE	Western block Ramgiri Schist Belt	-	-	-	-	-	Reconnaissance stage (G-4) investigation for PGE mineralisation has been carried out during FS 2010-12. The western block of the Ramagiri Schist Belt comprises of meta-sedimentary as well as meta-volcanic rocks in association with granitoids and meta ultramafic rocks. Effects of shearing are evident in schist as well as in granite. About 14 Km long, NNW-SSE trending narrow linear ultramafic bodies were traced. The bands are not continuous, they are showing pinching and swelling nature. Litho variants of ultramafic rocks are: i) serpentinite dunite ii) talc – tremolite schist iii) talc –chlorite schist. EPMA study of ultramafic rock shows that the core of the magnesite grains is rich in Mg and the rim is rich in Fe. The opaque are magnetite and chrom-spinel. XRF study shows that the Ni value in the ultramafic rocks ranges from 443ppm to 3001ppm and the Cr value ranges from 458 ppm to 6973 ppm. The PGE values ranges from < 5 ppb to 55 ppb in case of platinum and that of palladium ranges from 10 ppb to 80 ppb. Exploration has been completed.
GSI Limestone Kurnool	West of Nandi Kotkur	-	-	-	-	-	Reconnaissance stage investigation (G-4) initiated during 2009-10 was continued for limestone. The Cuddapah and Kurnool basins are well known for their potential mineral resources. The Kurnool and Cuddapah group of rocks are represented by Vempalle dolomites which are stromatolitic. The Kurnool group is represented by Banaganapalle, Narji and Owk Formations. Analysis of different coloured limestone samples collected from the area indicated that:

(Contd.)

STATE REVIEWS

Table - 3 (Concl.d.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Limestone Kurnool (Contd.)	West of Nandi Kotkur	-	-	-	-	-	Light pinkish colour limestone exposed in a small stream South of Alluru is high grade with CaO 51.10% and silica 3.04%. The Dark grey massive Narji limestone exposed in the HNSS canal between Voddamanu and Bollavaram and between Alluru and Bollavaram are of very good cement grade limestone with CaO 44 to 46% and SiO ₂ % 10 to 18% MgO is 0.5%. Dark brownish limestone exposed in the HNSS canal between Brahmanakotkur and Gargeyapuram near the K.G.Road Bridge crossing the HNSS canal is of poor cement grade limestone with CaO 35.70% and SiO ₂ 30.68%. The Light greenish massive limestone between Gargeyapuram and Diguwapadu with CaO 44.80 - 45.57 and SiO ₂ 13.69 - 15.08 is a good cement grade. Exploration has been completed.
MECL Coal Godavari Valley Coalfield	Tadilalaipudi	-	-	-	1264.10	-	Contractual drilling on behalf of NMDC was carried out.
-do-	Somavaram	-	-	-	6288.90	-	Contractual drilling on behalf of NMDC was carried out.
-do-	Dip. side of Venkatapuram	-	-	-	4791.20	-	Contractual drilling on behalf of NMDC was carried out.
-do-	Jangareddy- gudam	-	-	-	2386.30	-	Contractual drilling on behalf of NMDC was carried out.

Table – 4: Exploration for Petroleum & Natural Gas in Andhra Pradesh during, 2011-12

Agency	Drilling					
	Seismic Survey		Exploratory		Development	
	2D(GLKM)	3D(SQKM)	Wells	Meterage (Km)	Wells	Meterage (Km)
ONGC	-	127.85	10	37.99	10	30.05
OIL	-	72.76	-	-	-	-

Production

The value of mineral production in Andhra Pradesh at ₹ 22,657 crore in 2011-12 was 4% higher as compared to that in the previous year. Almost all important minerals are produced in Andhra Pradesh. The principal minerals produced in the State were coal, natural gas (utilised), limestone, petroleum (crude), barytes and iron ore which together accounted for 50% of total value of mineral production in the State during 2011-12. Coal alone contributed about 40% and minor minerals accounted for about 49% of the total value of mineral production in the State.

Andhra Pradesh claims the third position among the States in the country with a contribution of 9% to the total value of the mineral production. It is the sole producer of asbestos in India and also contributes almost entire out put of apatite, barytes and mica (crude). In addition, it is the leading producer of vermiculite, sand (others), laterite, sillimanite, quartz, quartzite and limestone contributing 85%, 82%, 61%, 55%, 46%, 34% and 21% in the total production of the country of respective

minerals. It is the second leading producer in the country and accounts for 30% in felspar, 29% in silica sand and 16% in ball clay.

Among the important minerals produced in the State, the output of quartzite and kaolin increased manifolds and that of sillimanite increase 79%, laterite by 62%, sand (others) and mica (crude) 29% each, steatite 28%, ochre 20% , quartz 12% and manganese ore 11 percent. However, a decline in production was observed in felspar 6%, dolomite 19%, shale 21%, barytes 26%, vermiculite 52% and garnet (abrasive) 59% as compared to the output of previous year (Table-5).

The production value of minor minerals was estimated at ₹ 11,079 crore for the year 2011-12.

The number of reporting mines in the state was 492 in 2011-12 as against 456 in the previous year.

The index of mineral production in Andhra Pradesh (base 2004-05=100) was 138.63 in 2011-12 as compared to 137.36 in the previous year.

STATE REVIEWS

**Table – 5 : Mineral Production in Andhra Pradesh, 2009-10 to 2011-12
(Excluding Atomic Minerals)**

(Value in ₹ '000)

Mineral	Unit	2009-10			2010-11			2011-12 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		456	179548979		456	218645465		492	226568826	
Coal	'000t	49	50429	67373100	50	51333	81106100	50*	52211	90008100
Natural Gas (utilised)	m c m	-	1479	5535078	-	1386	8871786	-	1363	8724563
Petroleum (crude)	'000t	-	304	5485306	-	305	5568745	-	305	5568745
Iron Ore	'000t	35	6246	8101303	34	1560	478212	39	1714	571872
Manganese Ore	t	35	260628	332916	38	290785	526834	36	322087	535816
Apatite	t	1	3882	9212	1	2585	6134	1	2917	6163
Asbestos	t	3	243	12268	3	268	13341	3	280	12827
Ball Clay	t	12	202796	26700	12	259380	70384	13	252892	51277
Barytes	t	9	2146460	2599224	7	2332701	2695846	6	1714749	1647156
Clay (others)	t	10	237220	26240	6	84875	8402	10	84127	6478
Dolomite	t	15	1577072	317824	20	1216373	363958	29	981800	282084
Felspar	t	16	214406	51429	20	208740	57878	14	196928	54018
Fireclay	t	7	24540	5516	9	26423	5871	9	29754	5713
Garnet (abrasive)	t	3	124756	48255	2	153574	183821	2	62325	263256
Kaolin	t	10	108395	9937	8	10431	1440	8	72371	11287
Sillimanite	t	-	2025	12454	-	17849	136438	-	31992	280136
Laterite	t	7	596318	60449	9	633253	70005	16	1022873	133828
Limestone	'000t	84	49560	6419110	82	52633	7375266	84	53882	7190524
Lime Kankar	t	2	780	254	1	615	215	2	830	355
Mica (crude)	t	29	1057	39817	28	1317	44124	28	1694	59101
Mica (waste & Scrap)**	t	-	4394	-	-	4648	-	-	6918	-
Ochre	t	3	34093	4690	3	39376	6194	5	47407	6607
Pyrophyllite	t	1	26	4	-	-	-	-	-	-
Quartz	t	26	182040	29642	32	214626	40845	39	239325	44895
Quartzite	t	2	122	18	4	7717	4275	3	61599	39531
Silica Sand	t	50	958934	64205	45	1239896	82650	54	1270309	98804
Sand (others)	t	10	1763495	75083	11	1673153	91014	7	2156059	133823
Shale	t	3	130425	7092	2	123106	7941	2	97574	6427
Talc/soapstone/steatite	t	30	77064	24389	25	59336	25684	28	75831	28027
Vermiculite	t	4	10060	4095	4	17081	8314	4	8239	3665
Minor Minerals @		-	-	82873369	-	-	110793748	-	-	110793748

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

** Relates to coal mines as on 31.03.2011.*

*** Includes mine waste obtained while dressing of crude mica.*

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

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Mineral-based Industry

The principal large and medium-scale mineral-based industries in the organised sector in the State are given in Table - 6.

Table - 6 : Principal Mineral-based Industries in Andhra Pradesh

Industry/plant	Capacity ('000 tpy)
Abrasives	
Grindwell Norton Ltd, Renigunta, Dist. Chittoor	5
Aluminium Foil	
Indal, Kollur.	3
Asbestos Products	
Bhagyanagar Wood Plast Ltd, Nandikandi, Dist. Medak.	60
Hyderabad Industries Ltd, Sanathnagar, Dist. Rangareddi.	160
Hyderabad Industries Ltd, Thimmapur.	230
Hyderabad Industries Ltd, Ibrahimpatnam, Dist. Krishna.	45
J.J. Spun Pipe Industries, Arsapalli, Dist. Nizamabad.	4.5
Ramco Industries, Ibrahimpatnam, Dist. Krishna.	225
Visaka Industries Ltd, Medak.	36
Bleaching Clay	
Ashapura Clay Tech. Ltd, Dharur, Dist. Rangareddi.	20 (Fuller's earth granules) 15 (Bentonite granules)
Cement	
ACC Ltd, Mancherial, Dist. Adilabad.	325
Andhra Cements Ltd, Gandhi Nagar, Vijayawada (G).	240
Andhra Cements Ltd (Visaka Cement Works), Durga Nagar, Dist. Visakhapatnam (G).	1120
Andhra Cements Ltd : Durga Cement Works, Dacheipalli, Dist. Guntur.	800
Anjani Portland Cements Ltd, Anjanipuram, Dist. Nalgonda.	297
Bhagya Lakshmi Cement Ltd, Vajinapalli, Dist. Nalgonda.	99

(Contd.)

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
CCI Ltd, Adilabad, Dist. Adilabad.	400
CCI Ltd, Tandur, Dist. Rangareddi.	1000
Chanakya Cements Ltd, Wadapalli, Dist. Nalgonda.	400
Dalmia Cement (Bharat) Ltd, Cuddapah.	2660
Deccan Cements Ltd, Bhavanipuram, Dist. Nalgonda.	797
Grey Gold Cements Ltd, Mattampally, Dist. Nalgonda.	50
Hemadri Cements Ltd, Vedadri, Dist. Krishna.	181
Kesoram Cement, Basantnagar, Dist. Karimnagar.	1500
Koramandal Cements Ltd, Ramapuram, Dist. Nalgonda.	66
Kakatiya Cement and Sugar Industries Ltd, Dondapadu, Dist. Nalgonda.	302
Keerthi Industries Ltd, Mellacheruvu, Dist. Nalgonda.	297
Lanco Industries Ltd, Chittoor.	80
Madras Cements Ltd, Jayantipuram, Dist. Krishna.	2800
Maata Cements Ltd, Dopperla, Dist. Visakhapatnam.	99
Mancherial Cement Co. (P) Ltd, Mancherial, Dist. Adilabad.	335
My Home Cement Industries Ltd, Mellacherur, Dist. Nalgonda.	3200
Nagarjuna Construction Co. Ltd, Rachorla, Dist. Kurnool.	198
Orient Cement, Devapur, Dist. Adilabad.	2400
Panyam Cements & Mineral Industries Ltd, Cement Nagar, Dist. Kurnool.	531
Penna Cement Industries Ltd, Talaricheruvu, Dist. Anantapur.	1500
Penna Cement Industries Ltd, Boyareddy Palli, Dist. Anantapur.	2000

(Contd.)

STATE REVIEWS

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Penna Cement Industries Ltd, Ganeshpahad, Dist. Nalgonda.	1000
Rain Commodities Ltd (Priyadarshini Cements), Ramapuram, Dist. Nalgonda.	1 0 0 0
Sagar Cements Ltd, Mallapally, Dist. Nalgonda.	198
Shri Chakra Cements Ltd, Guntur.	698
Shez Cements Ltd, Chintalapalem, Dist. Nalgonda.	200
The India Cements Ltd, Chilamkur, Dist. Cuddapah.	1550
The India Cements Ltd, Malkapur, Dist. Rangareddi.	2100
The India Cements Ltd, Yeraguntla 35002856.	520
Raasi Cements, Wadapally, Dist. Nalgonda.	
The KCP Ltd., Macherla, Dist. Guntur.	660
Toshali Cement Ltd, Visakhapatnam.	132
Ultra-Tech Cements Ltd, Tadipatri, Dist. Anantapur.	5600
Visaka Cement Industries Ltd, Malkapur, Dist. Rangareddi.	1120
Zuari Cements Ltd (Sri Vishnu Cements Works), Dondapadu, Dist. Nalgonda.	1679
Zuari Cement, Krishnanagar, Dist. Cuddapah.	2079
Chemical	
A.P. Carbides Ltd, Kurnool.	23 (calcium carbide)
Andhra Sugars Ltd, Saggonda, Dist. West Godavari.	132 (caustic soda) 99 (H ₂ SO ₄)
Shree Rayalseema Alkalies & Allied Chem. Ltd, Gondiparla, Dist. Kurnool.	69.5 (caustic soda) 49.8 (Cl) 24.7 (HCl) 23.1 (KOH)
Shree Rayalseema High Strength Hypo Ltd, Gondiparla, Dist. Kurnool.	9 (bleaching powder) 45 (H ₂ SO ₄) 15 (Oleum)
Ceramic	
Hindustan Sanitaryware & Industries Ltd, Bibinagar, Dist. Nalgonda.	18

(Contd.)

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Montana International Ltd, Faralwadi, Dist. Medak.	3.6
RAK Ceramics India Pvt Ltd, Jaggammagaripeta, Dist. East Godavari.	NA
Restile Ceramics Ltd, Mikapur.	1.4 (mill. sq m)
Sentini Ceramics Pvt Ltd, Kanukollu, Dist. Krishna.	75
Spartek Ceramics India Ltd, Narsingapuram, Dist. Chittoor.	NA
Fertilizer	
Coramandal Fertilizer Ltd, Vizag.	124.00 (N ₂) 166.00 (P ₂ O ₅)
Coromondal Fertilizers Ltd, (Formerly Godavari Fertilizers & Chemicals Ltd), Kakinada, Dist. East Godavari.	1000 (NPK)
Krishna Industrial Corpn. Ltd, Nidavolve, Dist. West Godavari.	66.00 (SSP) 33.5 (H ₂ SO ₄)
Nagarjuna Fertilizers & Chemicals Ltd, Kakinada, Dist. East Godavari.	549.60 (N ₂)
Subhodaya Chemicals, Govaripatnam, Dist. West Godavari	100 (SSP)
The Andhra Sugars Ltd, Kovvur, Dist. West Godavari.	66 (SSP) 45 (H ₂ SO ₄)
Pesticides	
Jayalakshmi Fertilizers, Tanuku, Dist. West Godavari.	2.4
Glass	
Ceat Ltd, Thimmapur, Dist. Mahaboobnagar.	10
Triveni Glass Ltd, Kondagudem, Dist. West Godavari.	10 (mill. sq m)
Iron & Steel	
Visakhapatnam Steel Project, Visakhapatnam.	5256 (sinter) 3400 (pig iron) 2656 (saleable steel) 3000 (crude/liquid steel) 42 (amm. sulphate)
Pig Iron	
Lanco Industries Ltd, Rachaguneri, Dist. Chittoor.	165
Mid-west Iron & Steel Co Ltd, Dusi, Dist. Srikakulam.	90

(Contd.)

STATE REVIEWS

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Sathavahana Ispat Ltd, Haresamudram, Dist. Anantapur.	120
Pellets	
Essar Steel Ltd, Visakhapatnam.	8000
Sponge Iron	
Ashirwad Steels & Ind. Ltd, Veliminedu, Dist. Nalgonda.	60
Anand Metallics & Power Pvt. Ltd, Kodi Cherla, Dist. Mahbubnagar.	NA
Bright Star Iron & Steel Ltd, Mekaguda, Dist. Mahbubnagar	NA
Binjusaria Sponge & Power Pvt. Ltd, Farooq Nagar, Dist. Mahbubnagar.	30
GSAL (India) Ltd, Srirampuram, Dist. Vizianagaram.	220
Kumar Metallurgical Corp. Ltd, Nalgonda	60
Lakshmi Gayatri Iron & Steel, Kethepally Dist. Nalgonda.	NA
Reactive Metals of India Ltd, Appajipally Dist. Mahbubnagar.	100 (TPD)
Sunder Steels Ltd, S.D. Road, Secunderabad.	24
Sponge Iron India Ltd, Paloncha, Dist. Khammam.	60
Sree Rayalseema Green Steloy Ltd, Gooty, Dist. Anantapur.	36
Sri Venkateshwara Sponge & Power Pvt Ltd, Merlapaka, Dist. Chittoor.	90
Maa Mahamaya Industries Pvt Ltd, Relligaurampeta, Dist. Vizianagaram.	NA
Ferro-alloys	
Andhra Ferro Alloys Ltd, Kothavalasa, Dist. Vizianagaram.	20

(Contd.)

Table - 6 (Concl.)

Industry/plant	Capacity ('000 tpy)
FACOR, Ltd, Shreeramnagar, Dist. Vizianagaram.	72.5
GMR Technologies & Ind, Ltd, Ravivalasa, Dist. Srikakulam.	25
Jindal Strips Ltd, Kothavalasa, Dist. Vizianagaram.	40
Nav Bharat Ferro Alloys Ltd, Paloncha, Dist. Khammam.	125
Shree Sarda Alloys Ltd, Ravivalasa.	6
VBC Ferro Alloys Ltd, Rudraram, Dist. Medak.	37
Refractory	
Carborandum Universal Ltd, Visakhapatnam.	3.6
MPR Refractories Ltd, Medak.	9.5
RHI Clasil Ltd, Venkatapuram, Visakhapatnam.	50
Raasi Refractories, Narketapally, Dist. Nalgonda.	35
Vesuvisindia Ltd, Visakhapatnam.	24
Sea Water Magnesia	
Birla Periclase, Visakhapatnam	50
Indian Rayon & Industries Ltd, Visakhapatnam.	NA
Lead-zinc	
HZL, Vizag Zinc Smelter, Visakhapatnam.	56 (Zn)
Petroleum Refinery	
HPCL, Vizag.	8300
ONGC, Tatipaka	70

Note: As per All India Graphite Crucible Manufacturers Association, Rajahmundry, about 44 graphite crucible plants operate in the region in small and medium scale. However, information on installed capacity is not available.