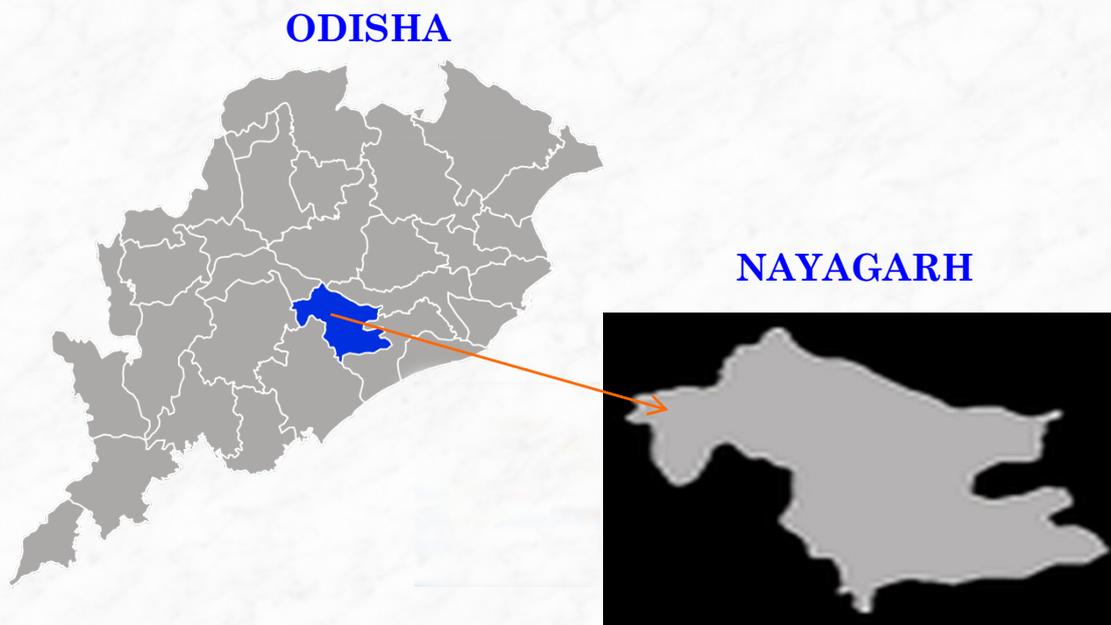




**DRAFT DISTRICT SURVEY REPORT (DSR)**  
**OF**  
**NAYAGARH DISTRICT, ODISHA**  
**FOR**  
**RIVER SAND**

**(FOR PLANNING & EXPLOITING OF MINOR  
MINERAL RESOURCES)**



As per Notification No. S.O. 3611(E) New Delhi,  
25<sup>th</sup> July, 2018  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
(MoEF & CC)

**COLLECTORATE, NAYAGARH**

## CONTENT

SL NO	DESCRIPTION	PAGE NO
1	INTRODUCTION	1
2	OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT	2
3	LIST OF LEASES WITH LOCATION, AREA AND PERIOD OF VALIDITY	2
4	DETAILS OF ROYALTY COLLECTED	2
5	DETAILS OF PRODUCTION OF SAND	3
6	PROCESS OF DEPOSIT OF SEDIMENTS IN THE RIVERS	3
7	GENERAL PROFILE	4
8	LAND UTILISATION PATTERN	5
9	PHYSIOGRAPHY	6
10	RAINFALL	6
11	GEOLOGY AND MINERAL WALTH	7

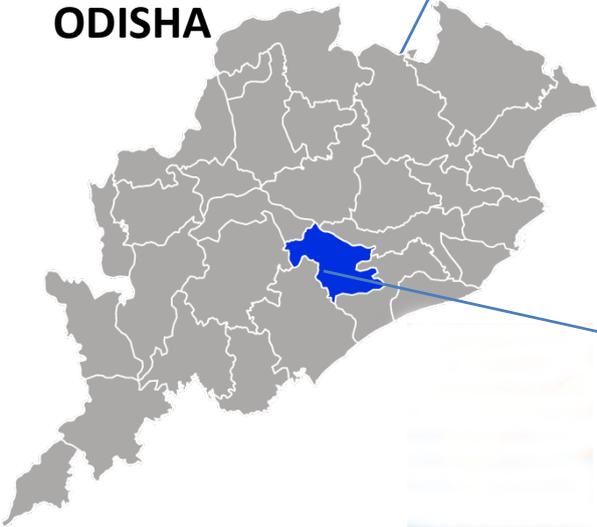
## LIST OF PLATES

DESCRIPTION	PLATE NO
INDEX MAP OF THE DISTRICT	1
MAP SHOWING TAHASILS	2
ROAD MAP OF THE DISTRICT	3
MINERAL MAP OF THE DISTRICT	4

# INDEX MAP



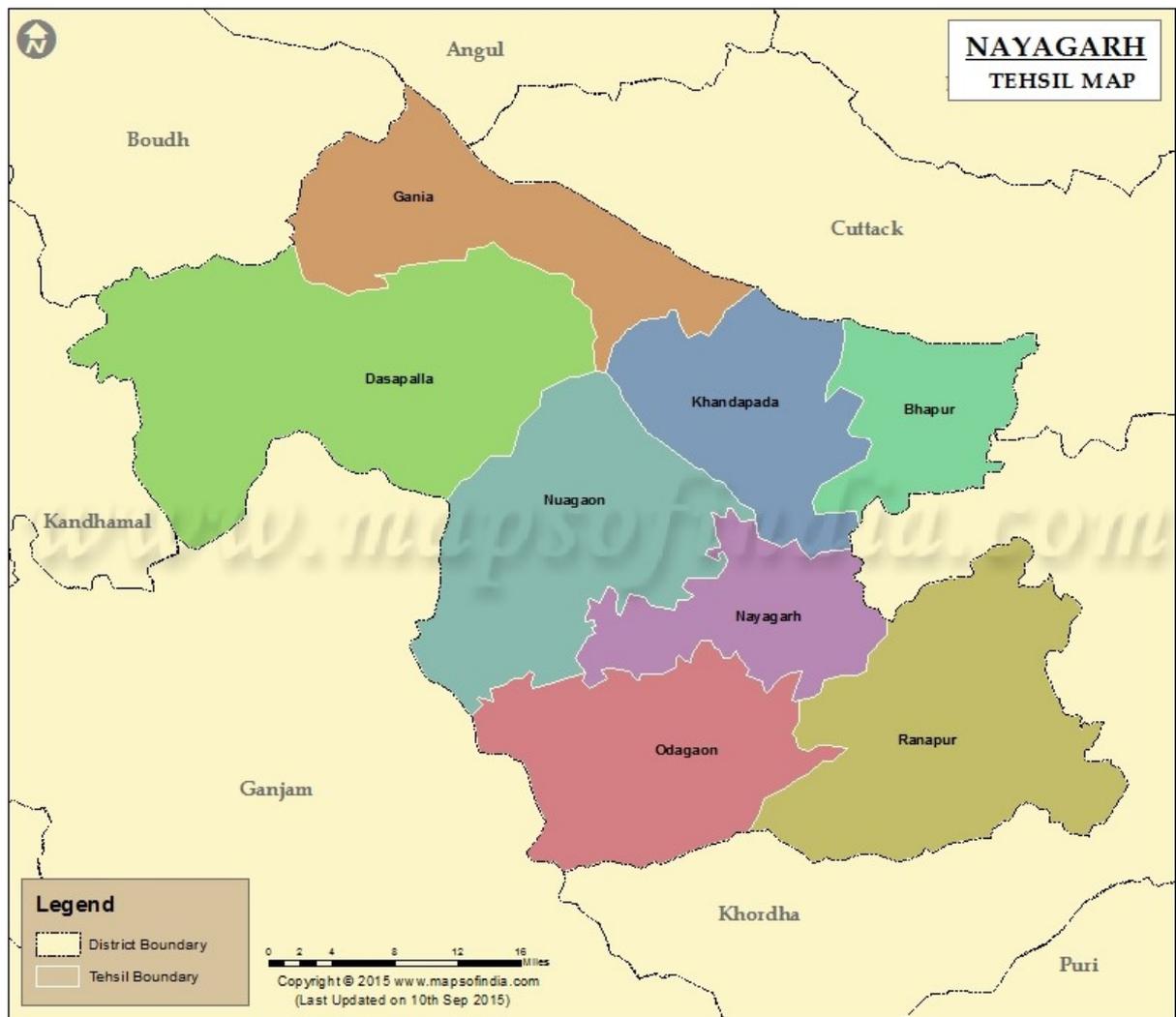
**ODISHA**



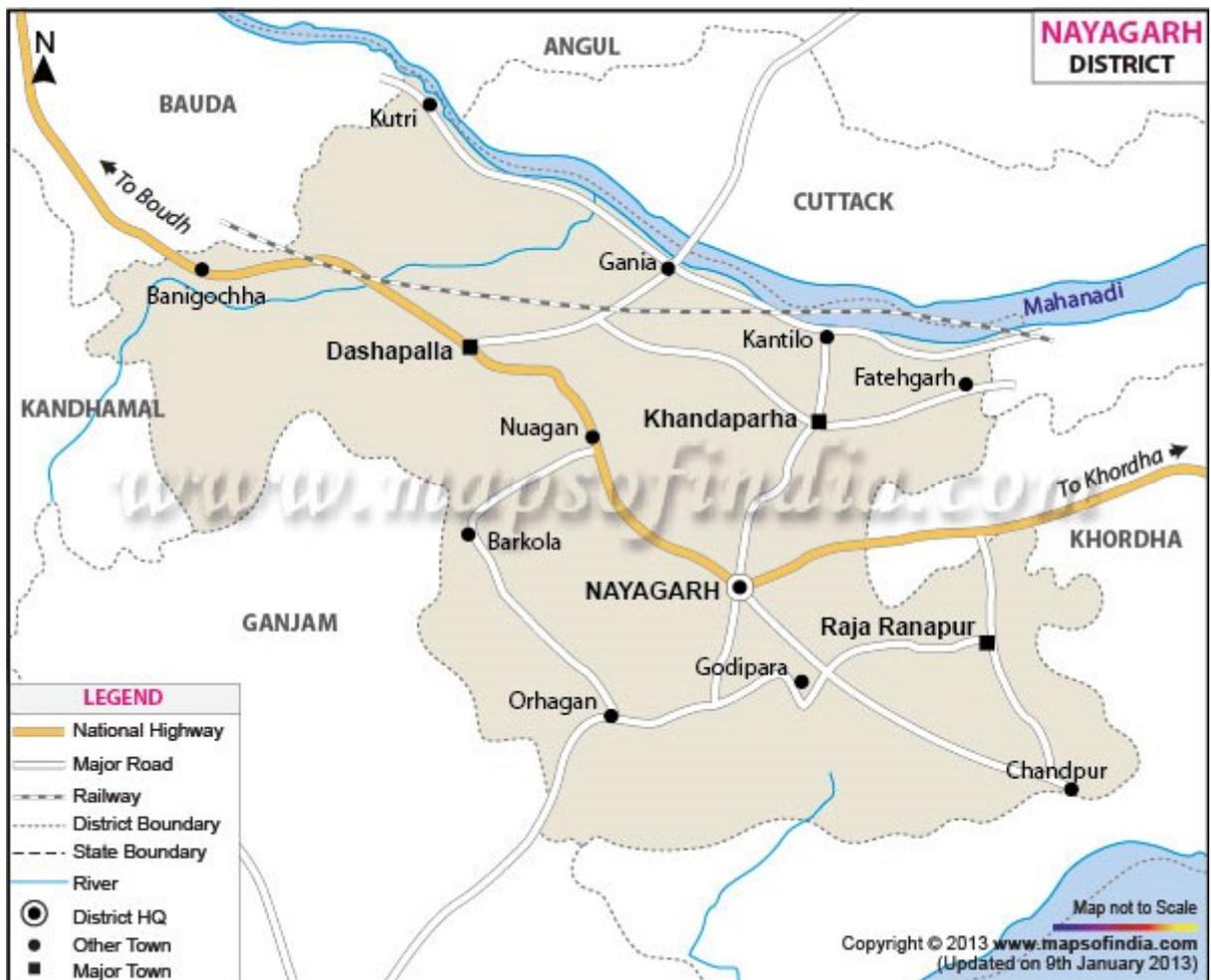
**NAYAGARH**



### MAP SHOWING THE TAHASILS OF NAYAGARH DISTRICT



### MAP SHOWING THE MAJOR ROADS OF NAYAGARH DISTRICT



## PREFACE

In compliance to the notification issued by the Ministry of Environment and Forest and Climate Change Notification no. S.O.3611 (E) NEW DELHI dated 25-07-2018 the preparation of district survey report of river sand mining has been prepared in accordance with Clause II of Appendix X of the notification. Every effort has been made to cover river sand mining locations, future potential areas and overview of sand mining activities in the district with all its relevant features pertaining to geology and mineral wealth. This report will act as a compendium of available mineral resources, geological set up, environmental and ecological set up of the district and based on data of various departments like Revenue, Water Resources, Forest, Geology and Mining in the district as well as statistical data uploaded by various state Government departments for preparation for district survey report. The main purpose of preparation of District Survey Report is to identify the mineral resources and developing the mining activities along with other relevant data of the District.

### 1. INTRODUCTION

The Nayagarh district is located towards the west of Puri district surrounded by Cuttack district in the North, Phulbani district in the West, Ganjam district in the South and Khurda district in the East. It lies between 19°54' to 20°32' North latitude and between 84° 29' to 85° 27' East longitude. It has an average elevation of 178 meters (583 feet). This town has Rukhi mountain to the South and Balaram mountain in North. These mountains mitigated the effects of the 1999 Odisha Cyclone on Nayagarh. This district is situated in the hilly ranges in the West and its North Eastern part has formed a small well cultivated fertile valleys intersected by small streams. It's in the higher altitude than the sea level and above flood level. The River Mahanadi flows in the Eastern boundary.

From the history of Nayagarh district it reveals that the district was founded by Suryamani of Baghela dynasty who had came to Puri on a pilgrimage from "Rewa" of Madhya Pradesh. He had built his fort here and adopted Tiger Head as a state symbol. Ninth king of this dynasty "Bagel Singh" (1480–1510) shifted his capital to the district. As per his name this place was known as "Baghua Nayagarh". He was a Vaishnavite and is known to have made small

icons of Shree Vighraha Chaturdha Murty and installed the deities in a mudaltar on the foot hill of Balarama for the first time in the history of Nayagarh district.

During the rule of 12th King of Nayagarh District, Raghunath Singh (1565–1595) had already captured Odisha and the king Mukunda Dev (1565) was defeated in Gohritikira and died. Taking advantage of the flaccid political situation, Raghunath Singh attacked Ranapur and captured Odgaon, Sarankul and Baunsiapara area from Ranapur estate and took control of the Nayagarh–Dasapalla border area from the King of Boudh and Sunamuhin area of Odgaon from the King of Ghumusar. He also captured a portion from Banpur.

Just before his death, the King Ragunath Singh divided his estate between his three sons. Harihar Singh got Nayagarh and Jadunath Singh got four Khandagrams (large area of land) which was known as Khandapara later. It was his heirs from here on that ruled Nayagarh until it was captured by the Britishers.

## **2. OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT.**

As per Schedule-IV of OMMC Rules'2016, the Mining Officer, Cuttack is the competent authority of Specified Minor Minerals of the district. In Nayagarh district, presently there is existence of one no. of Specified Minor Mineral i.e. Decorative Stone. There are 2 nos. of Decorative Stone Mining Lease (ML) and one no. of Prospecting License (PL) of Decorative Stone. Out of the said 2 nos. of Mining Leases, one Mining Lease is in village Dimeritadi under Dasapalla Tahasil of Nayagarh district which has been executed in favour of Maa Chandeswari Granites over an area of 5.504 hecets. for a period of 30 years i.e. from 29.01.2018 to 28.01.2048 which has started its operation since January'2019 .

Another Mining Lease is in village Bhatagada under Dasapalla Tahasil of Nayagarh district which has been executed in favour of Maa Chandeswari Granites over an area of 15.766 hecets. for a period of 30 years i.e. from

13.11.2018 to 12.11.2048 in which mining operation has not been commenced till date.

There is also a Prospecting license in this district which is located at Kudabadi village over an area of 38.077 hecets granted in favour of SGS Mines & Industries Pvt. Ltd. for a period of 2years i.e.from 14.02.2019 to 13.02.2021. The said Prospecting License is in operative condition.

(b) Other than the above mentioned minerals, minor minerals such as river sand, laterite slabs, building stone/black stone/road metals, morrum etc. are also available in the district.

### 3. LIST OF LEASES WITH LOCATION, AREA AND PERIOD OF VALIDITY

Enclosed as Annexure I

### 4. DETAILS OF ROYALTY COLLECTED

Sl.No	Name Of Tahasil	2015-16	2016-17	2017-18	2018-19
1	Bhapur	382020	0	1757042	2245804
2	Gania	0	262000	303000	306000
3	Khandapada	0	0	0	0
4	Nayagarh	50,670	61,571	371,406	383,911
5	Dasapalla	0	308854	383991	399878
6	Nuagaon	0	539000	667000	628000
7	Odagaon	0	0	0	0
	<b>TOTAL</b>	<b>432690</b>	<b>1171425</b>	<b>3482439</b>	<b>3963593</b>

### 5. DETAILS OF PRODUCTION OF SAND

Sl.No	Name Of Tahasil	2015-16	2016-17	2017-18	2018-19
1	Bhapur	1500	1700	7222	11314
2	Gania	0	5373	5445	5547
3	Khandapada	0	0	0	0
4	Nayagarh	2150	2300	2450	3500
5	Dasapalla	0	6700	6800	6900
6	Nuagaon	12900	14100	15400	16600
7	Odagaon	0	0	0	0
	<b>TOTAL</b>	<b>16550</b>	<b>30173</b>	<b>37317</b>	<b>43861</b>

## 6. PROCESS OF DEPOSIT OF SEDIMENTS IN THE RIVERS

The drainage of the district is mainly controlled by rivers like Mahanadi, Brutanga, Ardei, Kuanria, Dahuka, Baghamari, Lunijhara, Duanto, Sulia, Kusumi, Kamei, Kaligiri, Mandakini etc. During rainy season the river water carries sand which is formed due to disintegration of rock bodies along with other suspensions. After recession of the water flow the sand gets deposited in the locations where there is less energy.

## 7. GENERAL PROFILE

### a. Administrative set up:

SI No	Item	Unit	Magnitude
1	Location		
	Longitude	Degree	84 <sup>o</sup> 29' to 85 <sup>o</sup> 27' East
	Latitude	Degree	19 <sup>o</sup> 54' to 20 <sup>o</sup> 32' North
2	Geographical area	Sq.Km.	3890
3	Sub-division	Numbers	1
4	Tahasils	Numbers	8
5	C D Blocks	Numbers	8
6	Municipalities	Numbers	-
7	NACs	Numbers	5
8	Police Stations	Numbers	14
9	Gram Panchayats	Numbers	194
10	Villages	Numbers	1692
	Inhabited	Numbers	1541
	Uninhabited	Numbers	151
11	Assembly constituencies	Numbers	4

### b. Area and Population:

The district has an area 3890 Sq. Kms and 9.63 lakh of population as per 2011 Census. The district accounts for 2.50 percent of the State's territory and shares 2.29 percent of the State population. The density of population in this district is 248 person Per Sq. Km as against 270 person Per Sq. km of the State.

As per 2011 Census the Schedule Caste population was 136399 (14.20 %) and Schedule Tribe population was 58691 (6.10 %). The literacy percentage of the district covers 80.42 against 72.90 of the State. The decennial growth rate as per 2001-2011 was 11.40% as against 14.00% of the State.

**c. Climate :**

The climate condition of the district is generally hot and high humidity during April to May and cold during November to December. The monsoon generally breaks during the month of July, Average annual rainfall of the district was 1219.7 mm during 2017, which is lower than the normal rainfall 1354.3 mm.

**d. Agriculture:**

During the year 2017-18 the net area sown was 119 thousand hectares against 5356 thousand hectares of the state. The production of was as below:

Name	Pad dy	Whe at	Maiz e	Mun g	Biri	Kulth i	Till	Grou ndnu t	Musta rd	Potato es	Jute	Suga rcan e
Producti on in 000 MT	189.56	0.19	12.85	24.50	6.89	2.87	0.64	1.70	0.71	2.40	0.00	106.04

During 2017-18, the total fertilizers used in the district was about

Type of fertiliser	Nitrogenous	Phosphatic	Pottasic	Total	Consumption per Ha
Quantity in MT	5684	2307	1184	9175	44.48

**e. Transport & Communication:**

Railway route length (14-15) km	-
No of Rly stations and PH(14-15)	-
Forest road (17-18) km	370.11
National Highway (16-17) km	98.93
State Highway (17-18) km	92.62

Major district road (17-18) km	40.33
Other dist road (17-18) km	555.74
Rural road(17-18) km	648.71
Inter village road (16-17) km	2596.92
Intra village road (16-17) km	1784.83

**f. Health:**

The medical facilities are provided by different agencies like Govt., Private individuals and voluntary organizations in the district.

Sub divisional hospitals including mobile	0 No
Beds facilities	650 No
Homoeopathic dispensaries	15 No
Ayurvedic dispensaries	20 No

**g. Tourist places:**

There are 8 nos. of tourist centres such as Nilamadhava ( Kantilo ), Baramul, Tarabalo, Raghunath Jew (Odagaon), Ladubaba (Sarankul), Nayagarh, Jamupatna, Maa Maninaga Devi (Ranapur), Deer Park (Near Kuanria Dam, Dasapalla), Kuturi, Udayapur, Gokulananda Ashram, Sidhamula Panchupalli pragana and Jogi-jogiani. During 2015 the numbers of Domestic tourists were 1371035 who visited the tourists spots of the district.

**h. Forest areas:**

Category of forest	Area in sq km
Reserve Forest	1301.99
Unclassified Forest	0.25
Demarcated Protected Forest (DRF)	188.03
Undemarcated Protected Forest	135.58
Other forest under Revenue Dept	455.12
<b>Total</b>	<b>2080.97</b>

**i. Education:**

Primary School (2017-18)	No. of Schools	762
	Enrolment (No)	71025
	Pupil Teacher Ratio	16.44
Upper Primary School 2017-18	No. of Schools	477
	Enrolment (No)	43867
	Pupil Teacher Ratio	16.87
General College 2017-18	Junior	41
	Degree	26
Secondary School	No. of Schools	245
	Enrolment (No)	30345
	Pupil Teacher Ratio	23.41
Literacy Rate, 2011	Male	88.2
	Female	72.0
	Total	80.4

**j. Culture & Heritage:**

The culture of Nayagarh is a composite culture of heterogeneous faiths, with the presence of a good number of Semitic and Islamic followers. The aboriginal 'Savaras' and Kandhas are the indigenous people of Nayagarh District. The Aryans came later. The Brahmins are mostly the outsiders, invited by the Khatriya rulers to be engaged as priests in the temples and for other holy rites. The archeological remains with their inscriptions, temples, churches, mosques, forts, folk dances, art, sculptures, handicrafts and festivals of this district displays its rich cultural heritage. In 2003, seven copper plates dating back to early 9th and 10th Century A.D were discovered while excavating an old well in the village Dhanchengada in Bhapur Block of Khandapara Assembly Constituency and they have inscriptions on them. The Somanth Temple complex at Govindpur near Nayagarh has also stone inscriptions.

The right side entrance door of Kauri Thakurani and the front entrance door (inner side) of Beleswar Mahadev, have two inscriptions which are yet to be deciphered. Another inscription is found on the foot-post of Goddess Sita in Raghunath Temple at Odagaon that reads "Shakabda Saramangalya Rutusya Odanayak".

Buddhist shrine at Anala Patta, Nilamadhaba Temple at Kantilo, Raghunath and Jagannath Temples throughout the District and other Vaishnavite, Shaiva and Shakta shrines are also the symbols of the art and culture of the District. Also are present many forts and buildings in this District that symbolizes its rich art and cultural heritage. The important folk dances of this District are Ghantakalasa (Similisahi, Nayagarh), Danda Nrutya (Itamati), Dhena Koila (Similisahi), Khanjani (Balugaon), Singi Baza (Daspalla), Dhumpa (Khandapara), Ghuduki (Ranapur), Dholamahuri (Lathipada), Paika Akhada (Lathipada, Olasa), Adivasi-Nritya (Banigochha) and Janu-Ghanta. Kantilo is famous for its brass works. It is to mention here that, Millennium Talent Cup, the first of this kind in the world has the distinction of becoming the world's tallest cup and was made by the Kansaries of Kantilo for Odisha Institute of Educational Research, Bhubaneswar. Kantilo is also famous for brass works.

Odagaon is famous for stone sculptures. It may be noted here that all most all the temple architects of Odisha hail from Odagaon. Govind Chandra Sur Deo of Nayagarh was an eminent mural painter. All the mural and wall paintings in the temple of Lord Jagannath at Nayagarh is his works. Khandapara is famous for jute handicrafts and Situlia communities of Gania are eminent sculptors of Terracotta. Ravanapodi at Daspalla, festival of Dakhinakali at Nayagarh, Shivaratri of Ladukeswar at Saranakul, Sriram Navamai at Odagaon, Pana Sanakranti, , Kantilo Mela and Car Festival at Nayagarh, Khandapara, Daspalla and Ranpur are the important festivals celebrated in this District. It needs special mention here that the Chariots of Lord Jagannath, Balabhadra and Subhadra of Ranpur are 2nd in height only next to the Chariots of Puri Car Festival.

## 8. LAND UTILISATION PATTERN

SI No	Landuse	Area in '000Ha
1	Forest Area	208
2	Misc. trees & Grooves	6
3	Permanent Pasture	4

4	Culturable Waste	5
5	Land put to Non Agril Use	25
6	Barren & Unculturable Land	5
7	Current Fallow	15
8	Other Fallow	1
9	Net Area Sown	119
10	Mining	1
	Geographical Area	389

## 9. PHYSIOGRAPHY

The different hydrogeomorphological units of the district have been briefly summarized below:

1. Structural Hills: Structural Hills occupy major portions of the district and are controlled by folding, faulting and incised by numerous criss-cross joints and fractures, which facilitate infiltration.
2. Residual Hills: Residual Hills are scattered in pediment zone. This unit has poor infiltration characteristics and it behaves as run off zones.
3. Denudational Hills: Denudational Hills have restricted occurrence and are mostly seen in Nuagaon, Nayagarh & Daspalla blocks. These generally act as run off zones
4. Lateritic uplands: Ground water potential in this zone is moderately good having moderate infiltration. These are mostly found in Ranapur & Nayagarh block.
5. Intermontane valleys: Intermontane valleys are mostly structurally controlled and are found in the mountainous Western & North Western track of the district. Springs are generally found in this region. Ground water is moderately good.
6. Surface water bodies: Surface water bodies represent reservoirs of medium & minor irrigation projects.
7. Valley fills: Valley fills are promising zones for ground water occurrence that behave mainly as ground water discharge zones.

8. Shallow Buried Pediments: Shallow buried pediments are found along the periphery of hills & hillocks. Ground water occurs at moderate to deeper levels.

9. Moderate Buried Pediments: The thickness of the weathered mantle generally varies from 5 to 15m in moderate buried pediments. Infiltration is moderately good.

10. Deep Buried Pediment: The thickness of the weathered mantle varies from 10-20m in deep buried pediment.

11. Alluvial plain: Alluvial plain is the most potential hydrogeomorphic unit. It occurs in the eastern part of the district along the courses of the Kusumi, Dahuka, Kamai rivers and constitutes the ground water discharge zones.

12. Lineaments: Lineaments are structurally weak features, which allow ground water to percolate to the deeper horizons forming potential aquifers.

## 10. RAINFALL

The district is generally hot with high humidity during April and May and cold during December and January. The monsoon generally breaks during the month of July and continues till end of October. The temperature goes as high as up to 45°C in the summer and up to 7<sup>o</sup>-8<sup>o</sup> C during peak winter.

The rainfall statistics of the district for last four years is given below:

Year/ Month	April	May	June	July	August	September	October	November	December	January	February	March	Total
2015-16	627.2	343	1248.7	1594.9	2141	2029.1	298.66	43.5	261.76	82.4	129.6	133.2	<b>8932.97</b>
2016-17	76.7	869.5	1158.4	2193.9	1859.8	2004.3	686.56	22.2	0	2	0	476.4	<b>9349.68</b>
2017-18	67.2	246.9	1063.5	2539.5	2038	1465	1453.2	395.71	9.8	0	0	0	<b>9278.79</b>
2018-19	483.3	852.8	809.85	3182.4	1505.4	2102.4	1875.9	0	394.1	37.1	238.3	0	<b>11481.61</b>
<b>Average</b>	<b>156.80</b>	<b>578</b>	<b>535.05</b>	<b>1188.8</b>	<b>943.04</b>	<b>930.11</b>	<b>539.29</b>	<b>115.36</b>	<b>125.73</b>	<b>15.19</b>	<b>45.99</b>	<b>76.2</b>	<b>5249.64</b>

## 11. GEOLOGY AND MINERAL WALTH

In the district, the oldest rocks are represented by Eastern Ghat Supergroup of Archaean age. The Eastern Ghat Supergroup comprises of khondalites and charnockites (acid, intermediate and basic). Khondalites

and charnockites occur as isolated residual hills throughout the district. Khondalite group of rocks comprise garnet-quartz-feldspar-graphite schist, gneiss, granetiferous and sillimanite quartzite and leptynite. Granite gneiss and biotite granite of Archaean age represent major country rock of the district. In the eastern part of the district, residual soil is widespread, while laterite occurs as patches in the southern part. A shear zone trending WNW-ESE, identified by the presence of mylonite and crushed zone stretches for 24 Km. along the southern bank of Mahanadi.

### STRATIGRAPHY:

The geological succession in the district is as follows:

Age	Supergroup	Group	Litho
Pleistocene to Recent			Residual Soil
Cainozoic			Laterite
			Granite Gneiss/ Biotite Granite
	Eastern Ghat		Quartz Vein
		Charnockite	Charnockite (Acid & Intermediate)
Archaean			Charnockite (Basic)
		Khondalite	Quartz-Garnet-Sillimanite Gneiss/ Schist
			Leptynite

### Minerals:

**Graphite:** Graphite deposits are located around Sanaperi, Gochhabari(Dungiastaila), Gochhabari(Makastaila) and Sanasilinga, Takara and Narachipara area of the district. The Fixed Carbon in these graphite deposits ranges from 7.83% to 16.4%.

**Semiprecious stone:** Occurrences of semiprecious stone are reported around Dimiripat, Malaspadar and Sagarbhanga area of the district.

**Dimension and Decorative stone:** Occurrences of Decorative & Dimension stone around Chaupalli, Mardarajpur, Khunta bandh, Singhpada, Khandapada, Sunamundhi, Kantilo, Laxmiprasad, Bebartapur, Malisahi, Bhandarparbat, Damasahi, Kabti hill and Kailama etc. are note worthy. A total resource of 2.2836 million cubic meter has been estimated in the district. Apart from this, Berhampur blue (Granetiferous granite gneiss) at Bhalumundia with recoverable reserve of 0.9 million cubic meter and multi colour granite (Granetiferous granite gneiss) at Bedangi with recoverable reserve of 0.108 million cubic meter has been reported in the district.

Other than the above mentioned minerals, minor minerals such as river sand, laterite slabs, building stone/black stone/road metals, morrum, brick earth etc. are also available in the district.

- a. Detail of river/stream/other sand source- Sand mining in the district is confined to rivers like Mahanadi, Brutanga, Ardei, Kuanria, Dahuka, Baghamari, Lunijhara, Duanto, Sulia, Kusumi, Kamei, Kaligiri, Mandakini etc.
- b. Availability of sand or gravel or aggregate resources- sand- 8,36,963 cum (Annexure II), Gravel- Nil, Aggregate- Nil
- c. Detail of existing mining leases of sand and aggregates- For sand pl refer Annexure I. Aggregate- Nil

#### **DRAINAGE SYSTEM AND DESCRIPTION OF SALIENT FEATURES OF MAIN RIVERS AND STREAMS**

The Mahanadi, Burtanga, Kaunria, Kamai, Budha nadi constitute the major drainage system of the district. The drainage is mainly dendritic, radial & centripetal in nature. Hot springs have been reported at Tarabalo near the village Nilakantha prasad. At Tarabalo, the patches of warm water (mud pool) in an elevated area cover about 1,500 Sq.m through which hot water oozes out. The temperature is about 57 degree centigrade and has a feebly sulphurous odour. The discharge is found to be 0.3 lps.

Details of the drainage of the district is as below:

<b>SI No</b>	<b>Name of the River</b>	<b>Place of Origin</b>	<b>Altitude at Origin</b>	<b>Total length in the district ( In KM)</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
1	Mahanadi	Badmul	NA	57.00
2	Brutanga	Kujamendhi	NA	71.00
3	Kuanria	Bhogabadi	NA	55.00
4	Dahuka	bahadajhola	NA	41.00
5	Baghamari	Kanigiri	NA	12.00
6	Lunijhara	Dhamanei	NA	14.00
7	Duanto	Bhobasara	NA	40.00
8	Sulia	Jiripada	NA	15.00
9	Kusumi	Raghunathpur	NA	45.00
10	Kamei	Pathardwar	NA	3.50
11	Kaligiri	Jagannathpur	NA	22.00
12	Mandakini	Gochha Hill	NA	31.00
	<b>Total</b>			<b>406.50</b>

Detail of the potential of river sand of the district is submitted as Annexure II.





8	Nayagarh	Krushnprasad Sand Quarry Vill.Krushn aprasad Sunanati Dt. 07.10.2016	Running	Kh. 451 Plot. 1714 Kh. 263 Plot. 960						1.077 Km.	0.052 W	56,004 Sqm.	8850 cm.	140000	150000	170000	200000	220000	220000	220000	-	61,571	1,66,651	1,67,924	
9	Dasapalla	Kunjaban garh Sand	Running	Khata No.-1064 Plot No.1491,2250 Area-8.300						0	0	8.300	0	0	420000	430000	440000	0	420000	430000	440000	0	19,2954	21,024	25,404
10	Dasapalla	Gunduribari Sand	Running	Khata No.-39 Plot No.502,01 Area-5.082						0	0	5.082	0	0	250000	250000	250000	0	250000	250000	250000	0	15,900	14,734	11,444
11	Nuagaoan	River-Dahuka Village-Dakadhola Date of Regd. Of Lease Deed-16.06.16	Running	Mouza-Dakadhola, Khata No.-66 Plot No.-422,423,324 & 447 Area-5.176 Hect.						0.862	0.06	0.05172	60000 (for 5 years)	100000	110000	120000	130000	Nil	7418	8608	12366	Nil	3.85	4.8	5.2
12	Nuagaoan	River-Sagdia Nala Village-Bahadajhola Date of Regd. Of Lease Deed-16.06.16	Running	Mouza-Bahadajhola Khata No.-883 Plot No.-1567,1851, 1874,2297,2298,2201 Area-5.864 Hect.						2.932	0.02	0.05864	12400 (for 5 years)	200000	220000	250000	270000	Nil	1275	1011	2188	Nil	0.77	1.00	1.08



## ANNEXURE II

## POTENTIAL OF SAND IN THE DISTRICT

Sl. No.	Name of Tahasil	Status	River or stream	Portion of the River or Stream recommended for mineral concession (GPS co-ordinates or Khata & Plot No) (Sketch map to be attached)	Longitude			Latitude			Name of village	Length of area recommended for mineral concession (in km)	Average width of area recommended for mineral concession (in km)	Area recommended for mineral concession (in sq m)	Maximum Mineable sand (in cum) (60% of total potential)
					D	M	S	D	M	S					
6	7	8	9	10	11	12	13	14	15						
1	Bhapur		Kusumi River, Vill-Betakholi Regn-date 21.02.19	Kh.No-124, Plot No-1/548, 1/549						BETA KHOLA	1057 M	118 MTR	Ac=14.81	35961.15	
2	Bhapur		Mahanadi River, Vill-Pathar chakada Reg-dt 15.02.2018	Kh. No.454, Plot No. 30/2233 Map to attach to hard copy .						PATH ARCHAKADA	483M 0.483KM	104.60 M= 0.1046 KM	Ac=12.50 OUT OF AC 23.12 DEC	30352.09	
3	Bhapur		Mahanadi River, Vill-Badabar Reg-30.10.2015	Kh. No.163, Plot No. 2/1714 Copy of map to attached to Hard copy						BADABAR	249 KM	219MTR	Ac=13.50 out of Ac=46.44 dec.	32780.25	
4	Bhapur		Mahanadi	Kh.No1237 ,plot-2						MAD	251MTR	201MT	AC=12.5	30497.7	

	ur		River, Madhapur								HAPUR		R	6 DEC OUT OF AC =50.69 DEC	7
5	Khan dapa da		Kusumi		2 0	1 2	3 8 0	8 5	1 0	2 4 2	Salajh aria	0.500	0.1	5.060	30360
6	Khan dapa da		Kusumi		2 0	1 6	3 2 1 7 0	8 5	1 2	4 9 8 5	Khan dapa da	0.500	0.1	5.060	30360
7	Khan dapa da		Mahanadi		2 0	2 4	2 8 0	8 5	1 3	5 6	Kantil o	0.485	0.104	5.060	30360
8	Khan dapa da		Dahuka		2 0	1 9 8 8	5 5 0	8 5	1 6 7 5	2 2	Gunt huni	1.000	0.04	5.060	30360
9	Khan dapa da		Kusumi		2 0	2 1 0 5 7	5 0	8 5	1 7 7	0 3 0	Anla mada	1.000	0.04	5.060	30360
10	Khan dapa da		Kuanria		2 0	2 1	5 3 1 2 2	8 5	1 5	5 1 7 8	Kumb harap ada	0.500	0.05	5.060	30360
11	Khan dapa		Kuanria		2 0	2 1	3 5	8 5	0 3	3 3	Jakala	0.300	0.05	5.060	30360

	da						0 0 7			. 1 8 4					
12	Khan dapa da		Kuanria		2 0	2 0	1 8 0	8 5	7 1	1 8 . 2 5 5	Kiajha r	1.860	0.035	5.060	30360
13	Khan dapa da		Kusumi		2 0	1 8	2 1 . 7	8 5	1 1	5 1 . 2	Bodas a	1.000	0.05	5.060	30360
14	Khan dapa da		Kusumi		2 0 2 0	1 5 1 5	3 . 8 2 6 . 4	8 5 8 5	1 1 1 1	1 . 7 9 . 7	Khan dapa da	0.500	0.1	5.060	30360
15	Khan dapa da		Kuanria		2 0 2 0	1 9 1 9	3 . 3 8 . 2	8 5 5 0	0 9 8 8	4 8 . 8 9 . 2	Benag adia	1.000	0.05	5.080	30480
16	Khan dapa da		Mahanadi		2 0 2 0	2 3 . 8 3 7	8 0 8 5	0 5 0 7	9 . 3 3 . 9	Sidha mula	0.700	0.07	5.060	30360	



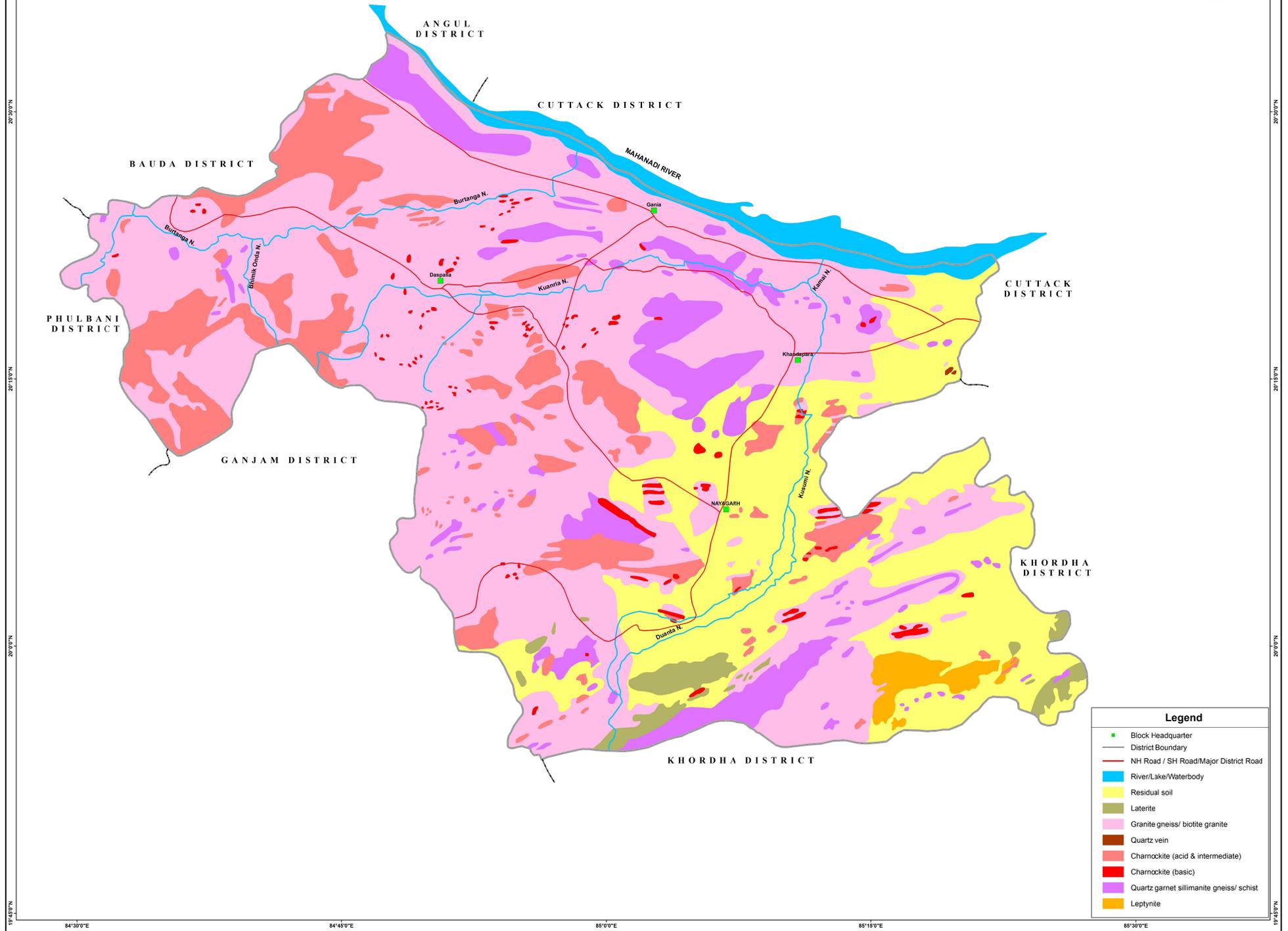
24	Nuag aon	New	River - Belapa	Mouza- Krushnaprasad Khata No.-309 Plot No.-406, 296								Krush napra sad			Area- 6.153 Hect.	14940.5 1
25	Nuag aon	LOI Issue d	River	Mz- Krushnaprasad Khata No.-309 Plot No.404 , 296  Kisam - River								Krush napra sad			Area - Ac.6.15H ect	14933.2 3
26	Odag aon	New	Kusumi	Mz-Hariharpur, Khata No. 535, Plot No. 158, Area 6.632 Ha.								Harih ar pur	2.00	0.005	66320	39792
27	Odag aon	New	Duanto	Mz- Dimisar, Khata No. 869, Plot No. 3687 & 4039, Area ,6.340 Ha.								Dimis ar	2.00	0.005	63400	38040
28	Odag aon	New	Kusumi	Mz-Patulisahi, Khata No. 143 Plot No. 1, Mz-Sanagorada Khata No. 248 Plot No. 254 Total Area 8.126 Ha								Patuli sahi & Sanag orada	3.00	0.005	81260	48756

# MINERAL MAP OF NAYAGARH DISTRICT

SCALE :- 1:130,000



PLATE NO-4



### Legend

- Block Headquarter
- District Boundary
- NH Road / SH Road/Major District Road
- River/Lake/Waterbody
- Residual soil
- Laterite
- Granite gneiss/ biotite granite
- Quartz vein
- Charnockite (acid & intermediate)
- Charnockite (basic)
- Quartz garnet sillimanite gneiss/ schist
- Leptynite