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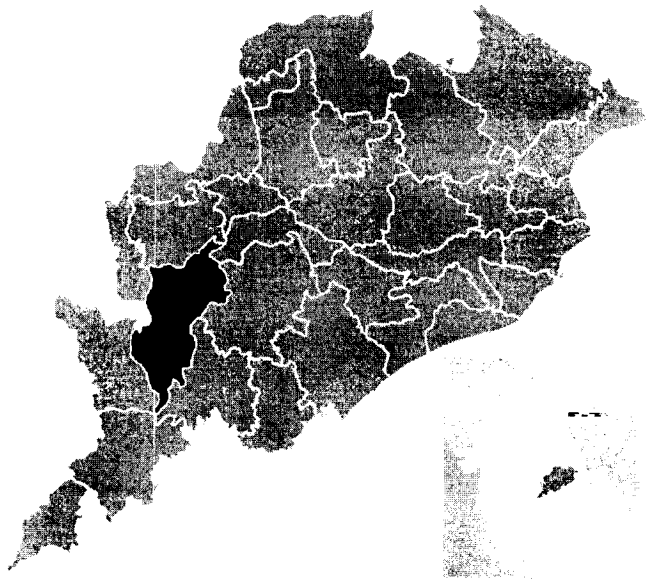
DISTRICT SURVEY REPORT (DSR) OF KALAHANDI DISTRICT, ODISHA ON STONE (ROAD METAL) MINING

As per Notification No. S.O. 141(E), 15th January, 2016 & S.O. 3611(E), 25th July, 2018, New Delhi, Ministry Of Environment, Forest & Climate Change (MoEF & CC)



COLLECTORATE OF KALAHANDI, ODISHA
FEBRUARY – 2020

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LIST OF PLATES

A survey has been carried out by the ***District Level Environment Impact Assessment Authority (DEIAA), Kalahandi*** with the assistance of Geology Department or Irrigation Department or Forest Department or Public Works Department or Mining Department etc. in the district as per the *MoEF, New Delhi, notification S.O. 141(E) dated 15th January 2016* to prepare the District survey Report (DSR) of Kalahandi District (For Stone)in the year 2019.

Forwarded by:

i. Sub-Collector cum SDM, Bhawanipatna.

ii. Sub-Collector cum SDM, Dharmagarh.

iii. CDMO, Kalahandi.

iv. Deputy Director Geology, ZS Balangir

v. Deputy Director Agriculture, Kalahandi.

vi. Deputy Director Horticulture, Kalahandi.

vii. SDO Irrigation Division, Kalahandi, Bhawanipatna.

viii. ACF North & South Division, Kalahandi.

ix. Asst. Engineer (R & B), Kalahandi, Bhawanipatna.

x. RO State Pollution Control Board, Rayagada.

xi. Mining Officer, Kalahandi.

xii. Tahasildar of concern Tahasil.

0. PREFACE

The main objective of the preparation of District Survey Report(DSR) as per the notification issued by the *Ministry of Environment and Forest and Climate Change Notification No.S.O. 141(E) dated 15/01/2016&S.O.3611 (E) New Delhi dated 25/07/2018*is for identification of areas of aggradation or deposition & areas of erosion to ensure the mining potential of the District. District Survey Report of Stone mining has been prepared in accordance with *Clause-II of Appendix X* of the said notification.

01. INTRODUCTION.

The first gazetteer (15 August 1980) of Kalahandi District says that the district comprised of the ex-State Kalahandi minus Kashipur Police Station (the Zamizari of Khariar as Nuapada Sub-division, now Nuapada District). With the merger of princely States with province of Odisha 1948, the ex-State of Kalahandi together with ex-State Patna and Sonepur formed the District of Kalahandi with headquarters at Balangir. On 1st November 1949 Patna and Sonepur areas were separated to form District Balangir; Patna (later Bolangir) Sonepur (later Subarnapur district). And ex-State of Kalahandi, together with Nuapada sub-division which formed a part of Sambalpur district since 1st April 1936, was reconstituted a separate District Kalahandi with Headquarters at Bhawanipatna. As the area comprising Kashipur Police station posed administrative difficulties due to lack of direct communications with the district headquarters , it was separated from Kalahandi on 1st August 1962. Further Nuapada Subdivision was separated on 27 March 1993 from Kalahandi to form new District as Nuapada.

On the basis of Administration Kalahandi District has been divided into 2 Sub-Divisions named as Bhawanipatna & Dharmagarh. As Per the Blocks & Tahasils are concerned the District is divided into 13 Blocks & Tahasils namely Kalahandi, Kesinga, Karlamunda, M.Rampur, Narla, Th.Rampur, Lanjigarh belongs to Bhawanipatna Sub-Division and Jaipatna, Junagarh, Koksara, Golamunda, Kalampur and Dharmagarh belongs to Dharmagarh Sub-Division. There are 310 Gram Panchayat in the District.

Kalahandi situated at a distance about 400Km from the state capital & international airport Bhubaneswar and at a distance about 500 Km from the shore line of Bay of Bengal.

Highways like NH-26, SH-16, SH-06, SH-06A, SH44 etc. passes within the district.

02. OVERVIEW OF MINING ACTIVITY IN THE DISTRICT.

A great variety of major mineral potential like Bauxite, Graphite, Galena, Ruby & Iolite and Specified Minor Minerals like Quartz, Feldspar & Decorative Stone (Granite) are available in the district.

Bauxite occurs in Karlapat-Pollingpadar, Kutrumali-Tangridongar, Lanjigarh -Niyamgiri, Keluamali, Krishanmali.

Graphite occurs in Sargipada, Gaidar, Singjharan, Lamer&Badibahal.

Galena occurs in Sisakhal.

Precious Stone (Ruby) occurs in Jhillingdhar, Hinjlibahal, Kerumurda, Sirja, Tandla, Banjipadar, Sargiguda.

Semi-Precious Stone (Iolite) occurs in Dedar, Labanyasar, Bondoguda, Kutingpadar, Ghatpada, Rengali, Dharmagarh, Golamunda and Th.Rampur Tahasils.

Quartz and Quartzite occurs in Kalahandi, Kesinga, Jaipatna, Junagarh, Dharmagarh, M.Rampur, Narla, Koksara, Golamunda, Kalampur Tahasils.

Feldspar occurs in Bhikajharan of Kalahandi Tahasil.

Decorative Stone (Granite) occurs in Lanjigarh & Kalahandi Tahasil.

(a)Major Mineral:-

In Kalahandi district, presently there are eight nos. of mining leases of semiprecious stone out of which only two nos. of mining leases are working i.e. Labanyasar Iolite Mines over an area of 2.505 hectares of Sri Debraj Meher & Bondoguda Iolite Mines over an area of 2.023 hectares of M/s Manikeswari Gems Pvt. Ltd.

(b) Specified Minor Minerals:-

(i)One Quarry lease for decorative stone (Granite) has been granted in favour of Sri Harendra Kumar Patnaik in village-Nuapada under Kalahandi Tahasil over an area of 8.575 hectares for decorative stone. Now the lease is non-working and the lessee has applied for Renewal of Mining Lease, which is under consideration of the Govt.

Besides this, three nos. of prospecting licenses for decorative stone (Granite) have been granted i.e. Karlasoda Decorative Stone (Granite) Quarry over an area of 13.464 hectares in village-Karlasoda under Kalahandi Tahasil in favour of Smt. P.Ramadevi, Chandanpur Decorative Stone (Granite) Quarry over an area of 3.602 hectares & Chandanpur Decorative Stone (Granite) Quarry over an area of 9.696 hectares in village-Chandanpur under Lanjigarh Tahasil in favour of Jay Minerals Prop. Ajay Agrawal.

(ii) There are six nos. of non-working Quartz mines in the district. Out of six, two mining leases had been granted in favour of Shreedhar Minerals, Proprietor Sri M.N. Pattjoshi at village Patharla over an area of 3.864 hectares under Kesinga Tahasil and at village Santemri over an area of 3.148 hectares under Jaipatna Tahasil.

Quartz Mines in village Sidingpadar over an area of 18.818 hectares under M-Rampur Tahasil has been granted in favour of Sri Samarendra Pratap Singh Deo. Quartz mines in village Beherakuni over an area of 3.318 hectares under Kalahandi Tahasil has been granted in favour of Sri S.K.Mund. Other two Quartz mines leases have been granted in favour of M/s Parvathi Impex , the leases are in village-Bhejiguda over an area of 22.048 hectares under Jaipatna Tahasil and at village-Karlaguda over an area of 7.292 hectares under Koksara Tahasil .

The above six Quartz Mining leases are under consideration for extension of Mining Lease by Government.

(iii)One Mining lease for Quartz and Feldspar has been granted in favour of M/s Shreedhar Minerals, Proprietor Sri M.N. Pattjoshi over an area of 5.147 hectares on Dt. 14.06.1982. Now the lease is non-working and the lessee has applied for Renewal of Mining Lease which is under consideration of Govt.

(iv) Three nos. of Prospecting Licenses (PL) have been granted for Quartz, one in favour of Sri Rabindra Kumar Lal at village-Dulkibandha under Jaipatna Tahasil over an area of 4.945 hectares and other two PLs have been granted in favour of M/s Shreedhar Minerals Proprietor Sri M.N.patjoshi at village Khinbahali over an area of 2.428 hectares under Junagarh Tahasil and at village Bhalubutra over an area of 2.873 hectares under Jaipatna Tahasil.

(v) One Prospecting License has been granted for Quartz and Feldspar in favour of M/s Shreedhar Minerals Proprietor Sri M.N.patjoshi at village Bhikajharan under Kalahandi Tahasil over an area of 12.638 hectares.

(b)Other than specified minor mineral:-

Other than specified minor minerals such as riverbed sand and ordinary stone (road metal) are also available in the district.

03. GENERAL PROFILE OF THE DISTRICT.

Present Kalahandi District covering a geographical area of 7920 sq km lies in between 19.175489^0 to 20.454517^0 North Latitude and 82.617767^0 to 83.794874^0 East Longitude having a population of total population of1,576,869 as per the Census 2011. Out of which 787,101 are males while 789,768 are females. In 2011 there were total 401,251 families residing in Kalahandi district. The District occupies the South Western portion of Odisha, bordered to the North by the Balangir District and Nuapada District, to the South by the Nabarangpur District, Koraput District and Rayagada District, and to the East by the Rayagada, Kandhamal District and Boudh District.

The climate of the Kalahandi District is of extreme type. It is dry except during monsoon. The maximum temperature of the District is 45+ degree Celsius, whereas the minimum temperature recorded is 4^{0}Celsius. The District experiences the average annual rainfall as 1378.20 mm. The monsoon starts late in June and generally lasts up to September.

Kalahandi District is largely an agriculture based Economy. The District is rich with agriculture. Dharamgarh sub division was historical known for rice production in Odisha. Since 2000s the Indravati Water Project, second biggest in the state has changed the landscape of southern Kalahandi, leading to two crops in a year. Because of this, blocks like Kalampur, Junagarh, Jaipatna, Dharmagarh are the leading producer of paddy in district. Cotton is widely cultivated in areas of Kesinga, Bhawanipatna,Golamundablocks.

Forest based products like Mahua, Kendu-Leaf, Wood, Timber and Bamboos also contribute to local economy largely. Kalahandi District supply substantial raw materials to paper mills in neighbouring Rayagada District.

Kalahandi District celebrates many festivals round the year. ChhatraJatra in Bhawanipatna, Deepawali, Rathajatra, Shivaratri, Holi,

Janmastami, Ramanabami are the famous festivals celebrated by local people with fun and fair. There are also some other local festivals like Khandabasa, Nuakhai, Amnuan, Kandulnuan, Seminuan, Dumernuan, Kalahandi Utsav, GhantaJatra that are celebrated in the District.

Many eminent personalities have taken birth on the soil of Kalahandi District. RindoMajhi (freedom fighter in Odisha), PratabKesariDeo (former MP and ex- Maharaja of Kalahandi), Chakra Bisoi (freedom fighter), Ram Chandra Patra (bureaucrat, social worker, administrator), NatyarashmiPrafullaRatha, DayanidhiNayak (former minister), Jayanta Kumar Behera (social activist and artist) and mountaineer JogabyasaBhoi (first from district to climb Mount Everest) are a few among them.

The district Kalahandi is situated at the south western part of Odisha constituting part of Western Ghat Mobile Belt normally a rugged hilly terrain. The district covers a number of new series Topo Sheets i.e. *F44W16, E44E9, E44E10, E44E11, E44E13, E44E14, E44E15, E44E16, F44X3, F44X4, F44X7,F44X8, F44X11, F44X12, F44X16, E44F1, E44F2, E44F3, E44F5 & E44F6.*

Kalahandi district is physiologically a complex terrain having numerous numbers of hills, moulds, plane lands, river beds, agricultural lands, forest growth areas etc. In the southern most part of the district there is Indravati Reservoir catchment area which is also shared byNawarangpur district. Adjacent to reservoir catchment area hilly terrain present which have an elevation range from mean sea level about 700m to 1000m. Hills and mounts are more common in the south to Bhawanipatna where as in the north part the is less hills compered to southern part possesses an elevation range between 250m to 800m from MSL. As the district is a part of Eastern Ghat Mobile Belt so the rock types are mostly homogeneous in nature, so the drainage pattern

developed in the region is dendritic pattern. The main drainage trend flows from the south-west to north-east direction within the district. There are several seasonal nala / dry nala& a few perineal natural drainage exists within the district. Main river that touches the district is *Tel River*, in addition to that a few other small rivers present within the distict namely *HatiNadi, UdantiNadi, SagadaNadi, Kamal Nadi, Ret Nadi, UtteiNadi*etcetc.

The main township that is developed in the district is Bhawanipatna also is the district head quarter, which is present in the central part of the district and connect to all parts of the district through road ways.

There are a number of reserve forests present within the district a few major RF are namely *Benakhamar RF, Udaygiri RF, Singari RF, Gopalpur RF, Indravati RF, Phatadhara RF, Machul RF, Hatisal RF, Kiding RF, Bazargarh RF, Benagurha RF, Urladani RF, Taprang RF, Telan RF, Satami RF, Sulia Block A RF*ect. In addition to the reserve forests there is a wild life sanctuary present in the district namely *Karlapat Wild life sanctuary*.

04. GEOLOGY OF THE DISTRICT.

Kalahandi District is part of Eastern Ghat Super Group, the Eastern Ghats are a discontinuous range of mountains along India's eastern coast. The Eastern Ghats run from the northern Odisha through Andhra Pradesh to Tamil Nadu in the south passing some parts of Karnataka and in the Wayanad district of Kerala. They are eroded and cut through by four major rivers of peninsular India, viz. Godavari, Mahanadi, Krishna, and Kaveri.

The mountain ranges run parallel to the Bay of Bengal. The Deccan Plateau lies to the west of the range, between the Eastern Ghats and Western Ghats. The coastal plains, including the Coromandel Coast region, lie between the Eastern Ghats and the Bay of Bengal. The Eastern Ghats are not as high as the Western Ghats. The Eastern Ghats are older than the Western Ghats, and have a complex geologic history related to the assembly and breakup of the ancient supercontinent of Rodinia and the assembly of the Gondwana supercontinent.

The Eastern Ghats on the east coast of India is a largely granulite terrain but also exposes granites, migmatites, anorthosites and alkaline rocks. This granulite belt has had a prolonged history of mountain building from late Archaean to late Proterozoic. During this long period the Eastern Ghats mobile belt witnessed repeated folding and possibly polycyclic metamorphism. Some recent findings suggest breaks between orogenic cycles and a proterozoic reworking of Archaean granulites. Extreme-temperature crustal metamorphism under fluid-absent conditions and crustal anataxis in huge thickness of pelitic to psammiticprotoliths producing leptynites are some of the important results of recent investigations of the Eastern Ghats mobile belt. Different generation of charnockites are present in the Eastern Ghats belt, but charnockitisation of granitic gneisses is yet to be documented. Some apparently nascent growths, the patchy charnockites in the

Chilka area are shown to be relict of older charnockitic rocks that suffered granulite-facies metamorphism and attendant migmatisation.

Event Stratigraphy of the Eastern GhatMobile Belt is as follows;

Age(Ma)	Event
550-650	Exhumation & Stabilisation(Pan-African)
800-850	Emplacement of Anorthosite Massifs, Some Alkaline Rocks(?) Younger Granitoids are charnokites
950-1100	Main Eastern Ghat Orogeny(=Grenville)
	Khondalite Group: Garnet-Sillimanite- Graphite Gneiss(Khondalite)with minor cordierite-Saphrine-Spinel Gneiss(Mg-Al) Calc- Silicate rocks & rare Marbles Quartzite(Garnet ±Sillimanite)
~1500	Emplacement of Alkaline rocks along with the rift Margin
	Evolution of platform(Purana) basins like Cuddahpah,Chhatishgarh, Indravati etc.
1800-1600	Evolution of Nellore-Khemmam schist belt in Dharwar Craton
2600-2800	Charnokite& Gneisses of the basement(WCZ).

05. DRAINAGE AND IRRIGATION PATTERN.

Kalahandi district is a physically hilly terrain having majorly dendritic drainage pattern, there is only one main river named *Tel River* flows in the district in the northern part of district, in addition to that several immature rivers namely *HatiNadi, UdantiNadi, SagadaNadi, KamalNadi, Ret Nadi, UtteiNadi*etc. Originate & flows in the district also few of them act as the tributary to Tel River. The distance of the sources from the river origin is geologically very short, hence this can be concluded that the rate of deposition of sand in Tel River is moderate, while in Rest Rivers within the district the rate of deposit is slow.

Additional river source details are given in the following table

Sl no.	Name of river	Area (sq. km drained)	% area drained in the District
01	Tel River	2850	60%
02	Hati River	735	100%
03	Udanti River	1800	100%
04	Sagada River	360	100%
05	Kamal River	350	100%
06	Ret River	810	100%
07	Uttei River	420	100%

06. LAND UTILISATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.

General land information of Kalahandi district is as follows;

Sl. No					High	Med.	Low	
1	Geographical area			Ha.				792000
2	Cultivable area			Ha.	237856	85279	67865	391000
3	Forest area			Ha.				314000
4	Misc. Tree & Grooves			Ha.				8000
5	Permanent Pasture			Ha.				23000
6	Culturable Waste			Ha.				21000
7	Land put to non aggriculture. Use			Ha.				35000
8	Net shown area		Kharif-2018	Ha.				383721
9	Gross crop area		2018-19	Ha.				600030
10	Cropping intensity		2018-19	Ha.				156%
11	Irrigated area		Kharif-2018	Ha.				143688
12			Rabi 2018-19	Ha.				84721
13	Cultivated area		For 2019	Ha.	217139	90962	75620	383721
14	Paddy area		For 2019	Ha.	46976	79261	75620	201857
15	Non paddy area		For 2019	Ha.	170163	11701	0	181865
16	DAO Circle			Nos.				4
17	AAO Circle			Nos.				26
18	AC/VAW Circle			Nos.				310

Forest:

Forest land use as per the concern authority is as follows;

Abstract of area statement of Kalahandi North Division

SL. NO	Legal status of the forest Blocks	Name of the Range										Total	
		Bhawanipatna		**M.Rampur**		**Narla**		**Kesinga**		**Kegaon**			
		No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No.of Blocks	Area in Ha.	No.of Blocks	Area in Ha.	No.of Blocks	Area in Ha.	No.of Blocks	Area in Ha.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Reserve Forest	12	15653.00	11	21475.00	7	15141.00	3	9824.00	10	20521.00	43	82614.00
2	P.F.	-	-	-	-	-	-	-	-	-	-	-	-
3	PRF notified u/s-4	1	6720.20	11	15174.98	6	4469.44	-	-	-	-	18	26364.62
4	PRF not notified u/s-4	2	9255.70	9	2551.08	5	4787.93	6	727.14	16	1285.75	38	18607.60
5	Village Forest	14	89.524	3	12.638	-	-	12	77.76	1	20.00	30	199.65
6	Non Forest land mutated in favour of FD	1	436.00	-	-	-	-	-	-	-	-	1	436.00
Total =		**30**	**32154.42**	**34**	**39213.43**	**18**	**24398.37**	**21**	**10628.90**	**27**	**21826.75**	**130**	**128221.87**

Abstract of area statement of Kalahandi South Division

SL. NO	Legal status of the forest Blocks	Name of the Range														Total	
		Biswanathpur		**Dharmagarh**		**Jaipatna**		**Junagarh**		**Th.Rampur North**		**Th.Rampur South**		**Karlapat**			
		No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.	No. of Blocks	Area in Ha.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Reserve Forest	16	17139.00	5	13083.00	8	2992.00	7	5239.00	9	717.00	4	6086.00	-	-	49	45256.00
2	P.F.	1	17.483	-	-	-	-	-	-	-	-	-	-	-	-	1	17.483
3	PRF notified u/s-4	9	11349.02	-	-	-	-	2	327.10	7	9288.59	3	756.19	1	462.00	22	22182.90
4	PRF not notified u/s-4	10	1480.32	-	-	-	-	6	3453.02	1	346.00	-	-	1	760.17	18	6039.51
5	Village Forest	-	-	1	20.00	-	-	-	-	3	20.00	6	60.00	-	-	10	100.00
6	Non Forest land mutated in favour of FD	2	43.261	-	-	1	25.40	-	-	1	22.416	5	322.953	-	-	9	414.03
Total =		**38**	**30029.08**	**6**	**13103.00**	**9**	**3017.40**	**15**	**9019.21**	**21**	**10394.01**	**18**	**7225.14**	**2**	**1222.17**	**109**	**74009.92**

Agriculture:

Please refer general information table above.

Horticulture:

A detail of the land use given by concern authority is as follows;

Sl. No	Crop	Area (in Hects)
1	Fruits	17944.00
2	Plantation Crops	2100.00
3	Spices	5389.00
4	Vegetables	23300.00
5	Flowers	269.00
Total =		49002.00

Mining:

The total area considered for mining activity for all minerals shall be the mining area within the district.

07. SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT.

Please refer Plate-V for details.

08. RAINFALL OF THE DISTRICT AND CLIMATIC CONDITION.

The climate of the Kalahandi District is of extreme type. It is dry except during monsoon. The maximum temperature of the District is 45+ degree Celsius, whereas the minimum temperature recorded as 4^{0}Celsius. The District experiences the average annual rainfall as 1664.633 mm. The monsoon starts late in June and generally lasts up to September.

MONTH WISE RAINFALL DATA OF KALAHANDI DISTRICT

Year	2017	2018	2019
MONTH	AVERAGE RAINFALL in mm	AVERAGE RAINFALL in mm	AVERAGE RAINFALL in mm
January	0	0	1.82
February	0	0	6.2
March	15.52	0	8.63
April	2.46	14.52	10.54
May	16.5	40.12	23.48
June	209.64	106.44	156.98
July	511.85	652.15	454.07
August	342.65	815.76	657.01
September	208.94	231.42	253.3
October	116.66	59.88	--
November	1.16	0	--
December	0	76.18	--
Total	**1425.38**	**1996.47**	**1572.05**

09. DETAILS OF THE MINING LEASES IN THE DISTRICT AS PER THE FOLLOWING FORMAT.

Please refer Table in Annexure-I

10. DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS

*Revenue collected for**Stone/Road metal.***

Sl No.	Name of Tahasil	Name of Source	Revenue collected in last three years in INR(Rs)		
			2016-2017	2017-2018	2018-2019
01	Kalahandi	Kerandihapar Stone Quarry	245784.00	213864.00	210672.00
02		Turpi Stone Quarry	179550.00	179550.00	163248.00
03		Ghusrigudi-I Stone Quarry	0.00	359100.00	359100.00
04		Bhikajharan Stone Quarry	105840.00	0.00	0.00
05		Gajkhola Stone Quarry	140490.00	153720.00	153720.00
06		Tentulichuan Stone Quarry	554400.00	623700.00	693000.00
07		Ghusrigudi-II Stone Quarry	0.00	1143450.00	1257718.00
08		Jamunabahal Stone Quarry	147000.00	0.00	161000.00
09		Karlasoda Stone Quarry	556374.00	379260.00	379260.00
10		Mankdipada Stone Quarry	0.00	35457.00	454920.00
11	Golamunda	Sargiguda Stone Quarry	0.00	118291.00	128521.00
12		Baijalpur Stone Quarry	346661.00	359381.00	452317.00
13	Dharmagarh	Gadiajore Stone Quarry	175824.00	175824.00	199800.00
14		Turihaldi Stone Quarry	68670.00	73575.00	83385.00
15		Gadiajore Stone Quarry	0.00	0.00	0.00
16	Lanjigarh	Benipokhari-4 Stone Quarry	0.00	779160.00	797280.00
17		Tadabala-1 Stone Quarry	0.00	797280.00	815400.00
18		Tadabala-2 Stone Quarry	0.00	243600.00	261000.00
19		Benipokhari-4 Stone Quarry	0.00	188832.00	206816.00
20		Tadabala-1 Stone Quarry	0.00	174220.00	196700.00

21	Koksara	Sarasmal Stone Quarry	0.00	209682.00	222032.00
22		Jaltamunda Stone Quarry	295595.00	0.00	0.00
23	Kesinga	BaramuniDangar Stone Quarry	109000.00	57000.00	333000.00
24		Subendangar-1 Stone Quarry	252000.00	253000.00	261000.00
25		Subendangar-2 Stone Quarry	0.00	254000.00	478000.00
26		Subendangar-3 Stone Quarry	254000.00	254000.00	261000.00
27		Subendangar-4A Stone Quarry	258000.00	254000.00	967000.00
28		Subendangar-4B Stone Quarry			
29		Kurlupada Stone Quarry	488000.00	0.00	1791000.00
30		KantesirStrone Quarry			
31		Kinerkela Stone Quarry			
32	Junagarh	Kalopala Stone Quarry	0.00	0.00	447000.00
Total			**41,77,188.00**	**72,79,946.00**	**1,17,33,889.00**

11. DETAILS OF PRODUCTION OF MINOR MINERAL IN LAST THREE YEARS.

Sl No.	Name of Tahasil	Name of Source	Production Of Minor Mineral stone In Last Three Years in Cum.		
			FY 2016-2017	FY 2017-2018	FY 2018-2019
01	Kalahandi	Kerandihapar Stone Quarry	1756	1527.6	1504.8
02		Turpi Stone Quarry	1283	1282.5	1168.5
03		Ghusrigudi-I Stone Quarry	0	2565	2565
04		Bhikajharan Stone Quarry	756	0	0
05		Gajkhola Stone Quarry	1004	1098	1098
06		Tentulichuan Stone Quarry	3960	4455	4950
07		Ghusrigudi-II Stone Quarry	0	7425	8167
08		Jamunabahal Stone Quarry	1050	0	1150
09		Karlasoda Stone Quarry	0	1260	1260
10		Mankdipada Stone Quarry	0	1912	2040
11	Golamunda	Sargiguda Stone Quarry	0	616	227
12		Baijalpur Stone Quarry	2052	2160	2268
13	Dharmagarh	Gadiajore Stone Quarry	1584	1584	1800
14		Turihaldi Stone Quarry	630	630	630
15		Gadiajore Stone Quarry	0	0	0
16	Lanjigarh	Benipokhari-1 Stone Quarry	0	5160	5280
17		Benipokhari-2 Stone Quarry	0	5280	5400
18		Benipokhari-4 Stone Quarry	0	1680	1800
19		Tadabala-1 Stone Quarry	0	1344	1472
20		Tadabala-2 Stone Quarry	0	1240	1400
21	Koksara	Sarasmal Stone Quarry	0	1235	1330
22		Jaltamunda Stone Quarry	2619	0	0

23		BaramuniDangar Stone Quarry	1199	1275	1377
24		Subendangar-1 Stone Quarry	1500	1500	1500
25		Subendangar-2 Stone Quarry	1500	1500	1500
26		Subendangar-3 Stone Quarry	1500	1500	1500
27		Subendangar-4A Stone Quarry	1500	1500	1500
28		Subendangar-4B Stone Quarry	600	600	600
29	**Kesinga**	Kurlupada Stone Quarry	1100	1100	1100
30		KantesirStrone Quarry	1500.8	1500.8	1500.8
31		Kinerkela Stone Quarry	1446	1512	1512
32	**Junagarh**	Kalopala Stone Quarry	0	0	1310
Total			**28539.80**	**44837.90**	**48758.10**

*Production of **Stone/Road metal.***

12. MINERAL MAP OF THE DISTRICT.

Please refer Plate-IV.

13. LIST OF LETTER OF INTENT (LOI) HOLDERS IN THE DISTRICT ALONG WITH ITS VALIDITY AS PER THE FOLLOWING FORMAT.

Sl. No	Name of the Tahasil	Name of the Mineral	Name of the Lessee	Address & Contact No. of Letter of Intent Holder	Letter of Intent Grant Order No. & date	Area of Mining lease to be allotted (ha.)	Validity of LOI	Location of the Mining lease (Latitude & Longitude)
1	2	3	4	5	6	7	8	10
1	Karlamunda	Abujbahal Stone Quarry	Sri Santosh Ku. Nayak	Goutam Nagar, Lane-5, Dist.- Koraput 9438561981	No.111/ Touzi, Dt. 22.01.16	6.07	05 Years	Abujbahal Khata No. 255. Plot No. 3.
2	M. Rampur	Pandapadar&Dalababahali Stone Quarry	Sri KamdebSahu	At- Tujung Po-M.Rampur Dist.- Kalahandi	No.01 Dt. 11.01.12	5.40	05 Years	Pandapadar Khata No. 76 Plot No. 20,132, 251,306, 332 &DalabahaliKhata No.123. Plot No. 625.
3	M.Rampur	Sidingpadar Stone Quarry	Sri Sudhakar Sahu	At- Tujung Po-M.Rampur Dist.- Kalahandi	-	4.40		SidingpadarKhata No. 36 & Plot No. 164 N 20° 30' 51.76" E 83° 33' 36.21"
4	Lanjigarh	Benipokhari-5 Stone Quarry	Smt. ShantipriyaSahoo	C/o- Ramesh Ch. Sahoo At/Po/PS- Biswanathpur 9937993191	No. 629 Dt. 30.06.16	4.69	05 Years	BenipokhariKhata No. 18 & Plot No. 30 & 57. N 19° 52' 53.37" E 83° 24' 48.62"
5	Lanjigarh	Talipada Stone Quarry	Sri SandaMajhi	S/o – Madan Majhi At- Talipada, Po- Pokharibandha	No. 630 Dt. 30.06.16	1.01	05 Years	TalipadaKhata No. 10 & Plot No 246. N 19° 52' 42.31" E 83° 24' 36.89"
6	Dharmagarh	Kankeri Stone Quarry	Sri Narayan Mohanty	Dharmagarh Dist. Kalahandi	-	6.798	-	KankeriKhata No. 9 & Plot No. 124/1820 Lat.-19° 54' 51.6" N Long.- 82° 42' 37.20" E

14. TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT.

Reserve & Resource potential Evaluation;

As per UNFC (*United Nations Framework Classification*) of potentials of minerals, A '***Mineral Reserve***' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out, and include consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is justified.

The mineability (Economic Viability) is demonstrated in consecutive Feasibility Assessment stages which may be, in order of increasing detail, Prefeasibility Study and Feasibility Study/Mining Report. A Probable Mineral Reserve may derive from a Prefeasibility study and a Proved Mineral Reserve from a Feasibility Study or mining activity documentation. Hence for the Reserve Potentential estimation of the Kalahandi district, the approved Mining Plans of each existing Quarry has been referred as it provides a details of the Mineable & Geological Reserve potentials of the Quarry lease.

As per the approved Mining Plans of the quarry leases till *September-2019* in Kalahandi District the Total mineral potential are as follows;

Potential Reserve as per Approved Mining plan of Existing Sources of Stone

Sl No.	Name of Tahasil	Name of Source	Geological reserve as per approved Mining Plan of existing quarries (in m^3)	Mineable reserve as per approved Mining Plan of existing quarries (in m^3)
01	M-Rampur	Pandapadar & Dalabahali Stone Quarry	648277	390079
02	M-Rampur	Sidingpadar Stone Quarry	648277	390079
03	Lanjigarh	Benipakhari-1 Stone Quarry	627745	349002
04	Lanjigarh	Benipakhari-2 Stone Quarry	612390	282360
05	Lanjigarh	Benipakhari-4 Stone Quarry	980427	566138
06	Lanjigarh	Benipakhari-5 Stone Quarry	898434	524286
07	Lanjigarh	Tadabala-1 Stone Quarry	245584	124709
08	Lanjigarh	Tadabala-2 Stone Quarry	259638	136653
09	Lanjigarh	Talipada Stone Quarry	136974	61553
10	Junagarh	Kalopala Stone Quarry	134485	56524
11	Karlamunda	Abujbahal Stone Quarry	996588	581040
12	Kalahandi	Bhikajharan-2 Stone Quarry, Ac. 03.02	221769	68364
13	Kalahandi	Gajkhola Stone Quarry	125695	84940
14	Kalahandi	Tentulichuan Stone Quarry	119520	77850
15	Kalahandi	Ghusurigudi-1 Stone Quarry 2.99 Acre	256710	159000
16	Kalahandi	Ghusurigudi-2 Stone Quarry 10.00 Acre	1139333	803803
17	Kalahandi	Jamunabahal Stone Quarry	469000	248068
18	Kalahandi	Karlasoda Stone Quarry	925200	373576
19	Kalahandi	Kerandihapar Stone Quarry	96691.6	483876
20	Kalahandi	Mankadipada Stone Quarry 8.00 Acre	567374	363822
21	Kalahandi	Turpi Stone Quarry	479617	312950
22	Dharmagarh	Gadiajore Stone Quarry of JibanJyoti Panda	2524248	1594844

		31.04 Acre		
23	Dharmagarh	Gadiajore Stone Quarry of Rasmiranjanjena 10.78 Acre	676531	420304
24	Dharmagarh	Turihaldi Stone Quarry	424166	49820
25	Dharmagarh	Kankeri Stone Quarry	823080	525668.30
26	Koksara	Jaltamunda Stone Quarry of Subash Chandra Mund 7.00 Acre	652548	328174
		Jaltamunda Stone Quarry of Subash Chandra Mund 6.00 Acre	365603	137590
27	Koksara	Sarasmal Stone Quarry	3935898	3124560
28	Kesinga	BaramuniDangar Stone Quarry	1244570	624272
29	Kesinga	Subendangar-1 Stone Quarry	880694	721013
30	Kesinga	Subendangar-2 Stone Quarry	762790	586834
31	Kesinga	Subendangar-3 Stone Quarry	801496	632360
32	Kesinga	Subendangar-4A Stone Quarry	1481145	1081559
33	Kesinga	Subendangar-4B Stone Quarry	146376	81240
34	Kesinga	Kurlupada Stone Quarry	1127814	302348
35	Kesinga	Kantesir Strone Quarry	147052.6	970431.6
36	Kesinga	Kinerkela Stone Quarry	660442	461201
37	Golamunda	Sargiguda Stone Quarry	70773	32177
38	Golamunda	Baijalpur Stone Quarry	1951245	1408320
Total			**2,92,66,200.2**	**1,95,21,387.9**

Similarly, as per UNFC (*United Nations Framework Classification*) of potentials of minerals A "***Mineral Resource***" is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that these are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource

are known, estimated or interpreted from specific geological evidence and knowledge.

The resource figures are quoted as being of intrinsic economic interest, depending on the results of a Prefeasibility Study and feasibility Study. Generally, only in-situ resource figures are reported at this stage of geological assessment. Mineral Resources are subdivided, in order of increasing geological confidence, into inferred, indicated and measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.

For assessment of potential resources of *New sairat sources of Stone*, a joint field survey has been done and sources has been identified. At this stage of survey, a detail study of each source is not feasible, hence the area of proposed quarry lease has been multiplied with the average height of the respective source to obtain the tentative Geological resources whereas for Mineable resources has been considered about 60% of geological Resources.

Potential Resources of *New Sairat Sources for Stone*

Sl No.	Name of Tahasil	Name of Proposed source with area in acre. (Location in Latitude & Longitude)	Proposed source area in (Hectares)	Tentative geological Resource of Proposed Source in m^3	Tentative Mineable Resource of Proposed Source i.e. 60% of geological Resources in m^3
01	Kalahandi	Barbhata Stone Quarry, Khata No. 118, Plot No. 932, 2.55 Ac	1.031	123720	74232
02	Kalahandi	Kandhabandopala Stone Quarry, Khata No. 1157, 738, Plot No. 2636, 01, 3.50Ac	1.416	169920	101952
03	Kalahandi	Borda- 1 Stone Quarry, Khata No. 527, Plot No. 915, 10.00 Ac Lat. - 20° 10' 16.10" N Long.-82° 58' 34.21" E	4.046	687820	412692
04	Kalahandi	Borda- 2 Stone Quarry, Khata No. 527 Plot No. 09 , 09.00 Ac Lat. - 20° 10' 34.26" N Long.-82° 58' 47.41" E	3.642	582720	349632

05	Kalahandi	JojanaNuapada- 2 Stone Quarry, Khata No. 04 Plot No. 34, 2.00 Ac	0.809	113260	67956
06	Kalahandi	Kutenpadar Stone Quarry, Khata No. 79 Plot No. 109, 10.05 Ac	4.067	691390	414834
07	Kalahandi	Borguda- 1 Stone Quarry, Khata No. 178 Plot No. 932, 3.00 Ac Lat. - 20^0 01' 10.35" N Long.-83^0 08' 20.19" E	1.214	163890	98334
08	Kalahandi	Haldigarh Stone Quarry, Khata No. 423 Plot No. 1718, 1.74 Ac Lat. - 20^0 04' 25.87" N Long.-83^0 07' 47.64"E	0.704	112640	67584
09	Kalahandi	Kendugupka- 1 Stone Quarry, Khata No. 86 Plot No. 48, 3.00 Ac Lat. - 20^0 04' 17.48" N Long.-83^0 08' 09.68" E	1.214	194240	116544
10	Kalahandi	Kendugupka- 2 Stone Quarry, Khata No. 86 Plot No. 83, 3.00 Ac	1.214	194240	116544
11	Kalahandi	Rojnaguda Stone Quarry, Khata No.108 Plot No.286, 318, 1.83 Ac	0.740	103600	62160
12	Kalahandi	Tiljudi Stone Quarry, Khata No.182 Plot No. 877, 878, 5.17 Ac	2.092	313800	188280
13	Kalahandi	Kurumachuan Stone Quarry, Khata No. 54 Plot No. 343, 460, 294 , 10.01 Ac	4.050	729000	437400
14	Kalahandi	Beherakuni Stone Quarry, Khata No. 34 Plot No.57, 1.38 Ac	0.558	66960	40176
15	Kalahandi	Bileikini Stone Quarry, Khata No. 168 Plot No. 1207, 3.00 Ac.	1.214	182100	109260
16	Kalahandi	Karlasoda Stone Quarry, Khata No. 413 Plot No. 137, 3.00 Ac.	1.214	169960	101976
17	Kalahandi	Bargaon Stone Quarry, Khata No. 278 Plot No. 147, 5.35 Ac.	2.165	324750	194850
18	Kalahandi	JojanaNuapada- 1 Stone Quarry, Khata No. 04 Plot No. 02, 3.00 Ac.	1.214	157820	94692
19	Kalahandi	Podmundi Stone Quarry, Khata No. 95 Plot No. 1003, 8.47 Ac.	3.427	685400	411240

20	Kalahandi	Barguda- 2 Stone Quarry, Khata No. 178 Plot No. 932, 3.00Ac	1.214	169960	101976
21	Kalahandi	Bhikajharan Stone Quarry, Khata No. 214 Plot No. 609, 0.71 Ac.	0.287	34440	20664
22	Dharamgarh	Ainlajore Stone Quarry, Khata No-394, Plot No-2497, 19.83 Ac	8.025	1444500	866700
23	Dharamgarh	Kankeri Stone Quarry, Khata No-09, Plot No-595, 9.65 Ac. Lat. - 19° 55' 02.26" N Long.-82° 43' 37.87" E	4.957	842690	505614
24	Dharamgarh	Behera Stone Quarry, Khata No-11, Plot No-2122, 1.58 Ac. Lat. - 19° 47' 24.92" N Long.-82° 38' 57.34" E	0.639	134190	80514
25	Dharamgarh	Nunpani Stone Quarry, Khata No. 178, Plot No-771, 1.71 Ac Lat. - 19° 44' 01.51" N Long.-82° 39' 56.50" E	0.692	138400	83040
26	Dharamgarh	Beheraguda Stone Quarry, Khata No.11 Plot No. 904, 1.87 Ac	0.756	121408	72845
27	Dharamgarh	Kirkakani Stone Quarry, Khata No. 5, Plot No. 11, 3.00 Ac	1.214	134000	80400
28	Dharamgarh	Chhatagohira Stone Quarry, Khata No.166, Plot No.286,3.44 Ac	1.392	123000	73800
29	Koksara	Bangomunda Stone Quarry-1, Khata No-240, Plot No-733, 734, 735, 736, 737 & 713, Lat. - 19° 39' 13.75" N Long.- 82° 40' 58.01" E	1.30	156000	93600
30	Koksara	Bangomunda Stone Quarry-2, Khata No-240, Plot No-21, 27 & 40 Lat. - 19° 39' 38.19 " N Long.- 82° 40' 47.96" E	0.48	72000	43200
31	Koksara	Bangomunda Stone Quarry-3, Khata No-240, Plot No-725,	0.32	48000	28800
32	Koksara	Bangomunda Stone Quarry-4, Khata No-240, Plot No-912, Lat. - 19° 39' 15.64" N Long.- 82° 41' 0.26" E	0.20	26000	15600
33	Koksara	Bangomunda Stone Quarry-4, Khata No-240, Plot No-770,771,780,782,787 Lat. - 19° 39' 15.64" N Long.- 82° 41' 0.26" E	0.25	35000	21000
34	Koksara	Dahagaon Stone Quarry-1, Khata No-13, Plot No-2312 & 2314, Lat. - 19° 43' 39.11" N Long.- 82° 44' 23.32" E	0.47	56400	33840

35	Koksara	Dahagaon Stone Quarry-2, Khata No-13, Plot No-2273, Lat. - 19⁰ 43' 32.30" N Long.- 82⁰ 44' 21.47" E	0.91	118300	70980
36	Koksara	Dahagaon Stone Quarry-3, Khata No-13, Plot No-2379, Lat. - 19⁰ 43' 33.21" N Long.- 82⁰ 44' 43.15" E	0.91	109200	65520
37	Koksara	Sarasmal Stone Quarry, Khata No-308, Plot No-1122, Lat. - 19⁰ 39' 15.64" N Long.- 82⁰ 41' 0.26" E	0.91	136500	81900
38	Koksara	Tungaon Stone Quarry, Khata No-436, Plot No-791,	0.62	74400	44640
39	Koksara	Dansara Stone Quarry-1, Khata No-328, Plot No-811,	1.21	157300	94380
40	Koksara	Dansara Stone Quarry-2, Khata No-328, Plot No-841, 845, 846, 847, 848, 849,	1.21	157300	94380
41	Koksara	Kashibahal Stone Quarry-A, Khata No-577, Plot No-1442(A),	1.21	363000	217800
42	Koksara	Kashibahal Stone Quarry-B, Khata No-577, Plot No-1442(B),	1.21	363000	217800
43	Koksara	Kashibahal Stone Quarry-C, Khata No-577, Plot No-31,	1.852	555600	333360
44	Koksara	Kashibahal Stone Quarry-D, Khata No-577, Plot No-23, Lat. - 19⁰ 39' 51.20" N Long.- 82⁰ 46' 33.26" E	1.852	555600	333360
45	Koksara	Kashibahal Stone Quarry-E, Khata No-577, Plot No-1353,	1.852	555600	333360
46	Junagarh	Tentulikhunti Stone Quarry, Khata No.213, Plot No.86 & 87, 2.00 Ac. Lat. - 19⁰ 49' 8.714" N Long.- 82⁰ 58' 45.571" E	0.809	121350	72810
47	Junagarh	Kalopala Stone Quarry, Khata No. 9, Plot No. 1054, 3.17 Ac	1.282	123000	86100
48	Junagarh	Ratanpala Stone Quarry, Khata No. 245, Plot No. 860, 0.40 Ac	0.161	38000	26600
49	Junagarh	Dundelmal Stone Quarry, Khata No. 219, Plot No. 733, 0.20 Ac	0.080	35000	24500
50	Narla	Mursing Stone Quarry, Khata No.196, Plot No.250, 1.00 Ac.	0.404	56560	33936
51	Narla	Gumapadar Stone Quarry, Khata No. 32 & Plot No.39, 7.28 Ac.	2.946	530280	318168
52	Narla	Sudingpadar Stone Quarry,	0.121	15730	9438

53	Jaipatna	Lakhabahali Stone Quarry Khata No. 349, Plot No. 601, 8.00 Ac.	3.230	481037	288623
54	Jaipatna	Matualguda-1 Stone Quarry, Khata No. 322, Plot No. 499, 12.00 Ac.	4.856	160000	96000
55	Jaipatna	Matualguda-2 Stone Quarry Khata No. 322 Plot No. 337, 10.50 Ac.	4.249	145000	87000
56	Jaipatna	Amjore Stone Quarry, Khata No. 8, Plot No. 210, 7.00 Ac	2.832	445000	267000
57	Lanjigarh	Talipada Stone Quarry, Khata No. 10, Plot No. 246, 2.27 Ac	0.918	132000	79200
58	Lanjigarh	Bairikupli Stone Quarry, Khata No. 16, Plot No. 25, 4.10 Ac	1.659	143000	85800
59	Karlamunda	Bhatapala Stone Quarry, Khata No. 395. Plot No. 1759, 1.08 Ac	0.437	62000	37200
60	Karlamunda	Abujbahal-2 Stone Quarry, Khata No. 255, Plot No. 3, 3.00 Ac	1.214	135000	81000
61	Golamunda	Sargiguda-1 Stone Quarry, Khata No. 267, Plot No. 2156, 4.94 Ac.	2.000	140000	84000
62	Golamunda	Sargiguda-2 Stone Quarry, Khata No. 267, Plot No. 824, 2.84 Ac.	1.150	125000	75000
Total				**15336975**	**9221786**

The total Tentative Geological & Mineable sand potential of the district shall be the sum of existing Reserve and the proposed Resource calculated in the above tables, the potentials are as follows;

Category	Tentative Geological potential in m^3	Tentative Mineable Potential in m^3
Existing sources	2,92,66,200.2	1,95,21,387.9
Proposed sources	1,53,36,975	92,21,786
Total potential	**4,46,03,175.2**	**2,87,43,173.9**

15. QUALITY /GRADE OF MINERAL AVAILABLE IN THE DISTRICT.

We know Kalahandi district is part of Eastern Ghat Province, hence the area is rich in hilly terrains composed of various meta-igneous group of rocks like Granite gneiss, charnokite, Khondalite etc. the colour of the rocks exposures within the district varies from light grey to dark grey, grain size of the rocks varies from medium to corse. The rocks are normally composed of mainly feldspar, quartz, and mild amphibole, pyroxene, olivine, biotite etc all these physical properties signifies its good cementing property and higher resistance which indicate its suitability for construction stone as the source areas have numerous fractures & joints. A very few areas are there which are devoid of fractures & joints, those can be suggested as decorative stone.

16. USE OF MINERAL.

Stone Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of road metal, to provide a sturdy base for roads. Only the harder more resilient rocks can be employed for most road surfacing requirements. Apart from road usage, substantial amounts are mixed (coarse gravel sized stone with finer stone particles or sand) with cement and water to make concrete. This may be carried out at the quarry or materials supplied to truck-mixers (for mixing en route) or to remote plants. An important local 'downstream' industry is that of concrete product (blocks, pipes, kerbs, pavers, etc). Not only do these produce 'added value' to the raw aggregate, they often make use of 'fines' which are a by-product of general aggregate processing, and without this market would often have to be dumped.

17. DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREE YEARS.

As such there are huge infrastructural activities such as road, building, railways are coming up by state Govt& Govt. of India.

The road metals are the main raw materials for the above activities and considering the last three years actual production of Kalahandi with respect to the requirement of the state has a huge gap.

It is proposed to start the road metal production from larger block/area to at least double the production of the district which will enhance the revenue of the district and also support the livelihood of the local people.

18. MINING LEASES MARKED ON THE MAP OF THE DISTRICT.

Please refer Plate-VI

19. DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES VIZ. NUMBER OF MINING LEASES, LOCATION (LATITUDE AND LONGITUDE).

Quarries existing within 500m radius are considered as cluster of Mining Leases as per the MoEF guide lines.

Tahasil	Mouza& Number of Mining leases	Details of the area	Location
Koksara	Bangomuna 5 no of quarries	Bangomunda Stone Quarry-1, Khata No-240, Plot No-733, 734, 735, 736, 737 & 713, Area- 3.25 Ac	Lat. - 19° 39' 13.75" N Long.- 82° 40' 58.01" E
		Bangomunda Stone Quarry-2, Khata No-240, Plot No-21, 27 & 40, Area-1.20Ac	Lat. - 19° 39' 38.19 " N Long.- 82° 40' 47.96" E
		Bangomunda Stone Quarry-3, Khata No-240, Plot No-725, Area-1.35 Ac	Lat. - 19° 38' 48.7 " N Long.- 82° 40' 58.01" E
		Bangomunda Stone Quarry-4, Khata No-240, Plot No-912, Area-0.50Ac	Lat. - 19° 39' 15.64" N Long.- 82° 41' 0.26" E
		Bangomunda Stone Quarry-4, Khata No-240, Plot No-912,	Lat. - 19° 39' 15.64" N Long.- 82° 41' 0.26" E
	Dahagaon 2 no of quarries	Dahagaon Stone Quarry-1, Khata No-13, Plot No-2312 & 2314,	Lat. - 19° 43' 39.11" N Long.- 82° 44' 23.32" E
		Dahagaon Stone Quarry-2, Khata No-13, Plot No-2273,	Lat. - 19° 43' 32.30" N Long.- 82° 44' 21.47" E
		Dahagaon Stone Quarry-3, Khata No-13, Plot No-2379,	Lat. - 19° 43' 33.21" N Long.- 82° 44' 43.15" E
	Kashibahal 5 no of quarries	Kashibahal Stone Quarry-A, Khata No-577, Plot No-1442(A),	Lat. - 19° 39' 38.24" N Long.- 82° 46' 21.57" E
		Kashibahal Stone Quarry-B, Khata No-577, Plot No-1442(B)	Lat. - 19° 39' 47.44" N Long.- 82° 46' 30.11" E
		Kashibahal Stone Quarry-C, Khata No-577, Plot No-31, Area- 2.00Ac	Lat. - 19° 39' 51.20" N Long.- 82° 46' 33.26" E
		Kashibahal Stone Quarry-D,	Lat. - 19° 39' 7.39" N

Koksara	Kashibahal 5 no of quarries	Khata No-577, Plot No-23, Area-1.00 Ac	Long.- 82⁰ 46' 11.12" E
		Kashibahal Stone Quarry-E, Khata No-577, Plot No-1353, Area-1.00Ac	Lat. - 19⁰ 39' 51.20" N Long.- 82⁰ 46' 33.26" E
	Jaltamunda 2 no of quarries	Jaltamunda Stone Quarry Khata no- 156, Plot no- 1101(P), Area- 7.00 Ac	Lat. - 19⁰ 40' 22.84" N Long.- 82⁰ 46' 56.82" E
		Jaltamunda Stone Quarry Khata no- 156, Plot no- 1191(P), Area- 6.00 Ac	Lat. - 19⁰ 40' 10.50" N Long.- 82⁰ 46' 34.76" E
	Sarasmal 2 no of quarries	Sarasmal Stone Quarry Khata no- 8, Plot no- 39 Area- 28Ac	Lat. - 19⁰ 43' 08.30" N Long.- 82⁰ 44' 35.60" E
		Sarasmal Stone Quarry, Khata No-308, Plot No-1122,	Lat. - 19⁰ 39' 15.64" N Long.- 82⁰ 41' 0.26" E
Kalahandi	Kendugupka 2 no of quarries	Kendugupka- 1 Stone Quarry, Khata No. 86 Plot No. 48, 3.00 Ac	Untouched forest
		Kendugupka- 2 Stone Quarry, Khata No. 86 Plot No. 83, 3.00 Ac	Untouched forest
	JojanaNuapada 2 no of quarries	JojanaNuapada- 2 Stone Quarry, Khata No. 04 Plot No. 34, 2.00 Ac	Lat. - 20⁰ 01' 07.77" N Long.- 83⁰ 13' 37.62" E
		JojanaNuapada- 1 Stone Quarry, Khata No. 04 Plot No. 02, 3.00 Ac.	Lat. - 20⁰ 01' 07.77" N Long.- 83⁰ 13' 37.62" E
	Bhikajharan 2 no of quarries	Bhikajharan Stone Quarry, Khata No. 214 Plot No. 609, 0.71 Ac.	Lat. - 20⁰ 02' 02.49" N Long.- 83⁰ 03' 26.51" E
		Bhikajharan-2 Stone Quarry, Khata no- 214, Plot no- 160, 167, 171 Area- Ac. 03.02	Lat. - 20⁰ 02' 02.49" N Long.- 83⁰ 03' 26.51" E

Kalahandi	Ghusurigudi 2 no of quarries	Ghusurigudi-1 Stone Quarry, Khata no- 125, Plot no- 922, Area-2.99 Acre	Lat. - 19° 59' 28.03" N Long.- 83° 06' 05.00" E
		Ghusurigudi-2 Stone Quarry Khata no- 125, Plot no- 361, Area-10.00 Ac	Lat. - 19° 58' 15.54" N Long.- 83° 05' 14.40" E
Lanjhigarh	Benipokhaori 4 no of quarries	Benipakhari-1 Stone Quarry Khata no- 18, Plot no- 30 & 57, Area-12.33Ac	Lat. - 19° 52' 54.20" N Long.- 83° 24' 54.80" E
		Benipakhari-2 Stone Quarry Khata no- 18, Plot no- 57 & 57, Area-12.00Ac	Lat. - 19° 52' 51.70" N Long.- 83° 24' 52.70" E
		Benipakhari-4 Stone Quarry Khata no- 18, Plot no- 57, Area-10.30Ac	Lat. - 19° 52' 54.50" N Long.- 83° 24' 58.90" E
		Benipakhari-5 Stone Quarry Khata no- 18, Plot no- 30 & 57, Area-11.60Ac	Lat. - 19° 52' 54.30" N Long.- 83° 24' 48.50" E
	Tadabala 2 no of quarries	Tadabala-1 Stone Quarry Khata no- 32, Plot no- 78 Area-5.00Ac	Lat. - 19° 58' 08.10" N Long.- 83° 25' 48.20" E
		Tadabala-2 Stone Quarry Khata no- 32, Plot no- 78 Area-5.00Ac	Lat. - 19° 58' 07.50" N Long.- 83° 25' 48.20" E
Dharmagarh	Gadiagore 2 no of quarries	Gadiajore Stone Quarry Khata no- 8, Plot no- 1368, Area-31.04 Acre	Lat. - 19° 50' 13.00" N Long.- 83° 43' 44.00" E
		Gadiajore Stone Quarry Khata no- 8, Plot no- 330, 314, Area-10.78 Acre	Lat. - 19° 51' 22.35" N Long.- 83° 43' 47.65" E
Kesinga	Subendangar 5 no of quarries	Subendangar-1 Stone Quarry Khata no- 2, Plot no- 1 Area- 12.62 Ac	Lat. - 20° 02' 11.96" N Long.- 83° 08' 08.90" E
		Subendangar-2 Stone Quarry Area- 12.78 Ac	Lat. - 20° 02' 09.60" N Long.- 83° 08' 20.10" E

Kesinga	Subendangar 5 no of quarries	Subendangar-3 Stone Quarry Area- 12.68 Ac	Lat. - 20^0 01' 49.70" N Long.- 83^0 08' 16.90" E
		Subendangar-4A Stone Quarry Khata no- 2, Plot no- 4 Area- 10.70 Ac	Lat. - 20^0 01' 44.00" N Long.- 83^0 08' 07.40" E
		Subendangar-4B Stone Quarry Khata no- 2, Plot no- 4 Area- 02.02 Ac	Lat. - 20^0 01' 42.30" N Long.- 83^0 08' 06.90" E

20. DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT.

The Karlapat sanctuary over a notified area 147.66 sq.km is located in Kalahandi South Division which is 12km from Bhawanipatna in Kalahandi district covering a dense patch of lush green dry deciduous forest. A beautiful waterfall, 'Phurlijharan' has been developed as a picnic spot for the local visitors and draws large number of visitors from far off places in and around Kalahandi District. Karlapat Wildlife Sanctuary is home to a plethora wildlife animals and birds. The sanctuary is rich in wildlife such as leopard, gaur, sambar, nilgai, barking deer, mouse deer, soft claws ottawa, a wide variety of birds and reptiles.

21. IMPACT ON THE ENVIRONMENT (AIR, WATER, NOISE, SOIL, FLORA & FAUNA, LAND USE, AGRICULTURE, FOREST ETC.) DUE TO MINING ACTIVITY.

Mining is the extraction of minerals and other geological materials of economic value from deposits on the Earth. Mining adversely affects the environment by inducing loss of biodiversity, soil erosion, and contamination of surface water, groundwater, and soil. Mining can also trigger the formation of sinkholes. The leakage of chemicals from mining sites can also have detrimental effects on the health of the population living at or around the mining site.

As mentioned above, mining activities can harm the environment in several ways.

Impacts on Air

Air quality is adversely affected by mining operations. Unrefined materials are released when mineral deposits are exposed on the surface through mining. Wind erosion and nearby vehicular traffic cause such materials to become airborne. Lead, arsenic, cadmium, and other toxic elements are often present in such particles. These pollutants can damage the health of people living near the mining site. Diseases of the respiratory system and allergies can be triggered by the inhalation of such airborne particles.

Impacts on Water

Mining also causes water pollution which includes metal contamination, increased sediment levels in streams, and acid mine drainage. Pollutants released from processing plants, tailing ponds, underground mines, waste-disposal areas, active or abandoned surface or haulage roads, etc., act as the top sources of water pollution. Sediments released through soil erosion cause siltation or the smothering of stream beds. It adversely impacts irrigation, swimming,

fishing, domestic water supply, and other activities dependent on such water bodies.

High concentrations of toxic chemicals in water bodies pose a survival threat to aquatic flora and fauna and terrestrial species dependent on them for food. The acidic water released from metal mines or coal mines also drains into surface water or seeps below ground to acidify groundwater. The loss of normal pH of water can have disastrous effects on life sustained by such water.

Noise impacts

Noise pollution mainly due to operation of machineries, occasional plying of machineries and drilling & blasting. These actives will create noise pollution in the surrounding area that affects the life of the nearby habitats.

Impact on Soil

Soil disruptions can contribute to the deterioration of the area's flora and fauna. There is also a huge possibility that many of the surface features that were present before mining activities cannot be replaced after the process has ended. The removal of soil layers and deep underground digging can destabilize the ground which threatens the future of roads and buildings in the area.

Impacts on Flora & Fauna

Often, the worst effects of mining activities are observed after the mining process has ceased. The destruction or drastic modification of the pre-mined landscape can have a catastrophic impact on the biodiversity of that area. Mining leads to a massive habitat loss for a diversity of flora and fauna ranging from soil microorganisms to large mammals. Endemic species are most severely affected since even the slightest disruptions in their habitat can result in extinction or put them

at high risk of being wiped out. Toxins released through mining can wipe out entire populations of sensitive species.

22. REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT.

The major potential environmental impacts associated with mining and associated mineral processing operations are related to erosion-prone landscapes, soil and water quality, and air quality. These potential impacts are recognized and addressed in current mining operations as well as in some former mining operations by reclaiming areas of physical disturbance to prevent erosion, stabilizing soils containing metals or chemicals to prevent unwanted metal releases into the environment, preventing and/or treating water contamination, and controlling air emissions.

Mine closure and a number of activities to mitigate the impacts of mining are an integral part of all mine planning and mineral development from the discovery phase through to closure:

Reclamation
Soil treatment
Water treatment
Preventing acid rock drainage
Controlling gas emissions

Air

Mitigation measures suggested for air pollution controls are to be based on the baseline ambient air quality of the project/cluster area and would include measures such as:

- Dust generation shall be reduced by using sharp teeth of shovels.
- Wet drilling shall be carried out to contain the dust particles.
- Controlled blasting techniques shall be adopted.

- Water sprinkling on haul roads, service roads and overburden dumps will help in reducing considerable dust pollution.
- Proper and regular maintenance of mining equipment's have to be undertaken.
- Transport of materials in trucks are to be covered with tarpaulin.
- The mine pit water can be utilized for dust suppression in and around mine area.
- Information on wind diction and meteorology are to be considered during planning, so that pollutants, which cannot be fully suppressed by engineering techniques, will be prevented from reaching the nearby agricultural land, if any.
- Comprehensive greenbelt around overburden dumps and periphery of the mining projects/clusters has to be carried out to reduce to fugitive dust transmission from the project area in order to create clean & healthy environment.

Water

- Construction of garland drains and settling tanks to divert surface run –off of the mining area to the natural drainage.
- Construction of checks dams/ gully plugs at strategic places to arrest silt wash off from broken up area.
- Retaining walls with weep hole are to be constructed around the mine boundaries to arrest silt wash off.
- The mined out pits shall be converted in to the water reservoir at the end of mine life. This will help in recharging ground water table by acting as a water harvesting structure.
- Periodic analysis of mine pit water and ground water quality in nearby villages are to be undertaken.
- Domestic sewage from site office & urinals/latrines provided within ML/QL areas is to be discharged in septic tank followed by soak pits.

Noise

- Periodic maintenance of machineries, equipments shall be ensured to keep the noise generated within acceptable limit.
- Development of thick green belt around mining/cluster area, haul roads to reduce the noise.
- Provision of earplugs to workers exposed to high noise generating activities like blasting, excavtion site etc. Worker and operators at work sites will be provided with earmuffs.
- Conducting periodical medical checkup of all workers for any noise related health problems.
- Proper training to personnel to create awareness about adverse noise related effects.
- Periodic noise monitoring at locations within the mining area and nearby habitations to assess efficacy of adopted control measures.
- During blasting optimum spacing, burden and charging of holes will be made under the supervision of competent qualified mines foreman, mate etc.

Biological Environment

- Development of green belt/gap filling saplings in the safety barrier left around the quarry area/ cluster area.
- Carrying out thick greenbelt with local flora species predominantly with long canopy laves on the inactive mined out upper benches.
- Development of dense poly culture plantation using local floral species in the mining areas at conceptual stage if the mine is not continued much below the general ground level.
- Adoption of suitable air pollution control measures as suggested above.
- Transport of materials in trucks covered with tarpaulin.

23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATION, PROPOSED RECLAMATION PLAN).

Mine reclamation is the process of restoring land that has been mined to a natural or economically usable state. Although the process of mine reclamation occurs once mining is completed, the planning of mine reclamation activities occurs prior to a mine being permitted or started. Mine reclamation creates useful landscapes that meet a variety of goals ranging from the restoration of productive ecosystems to the creation of industrial and municipal resources. Modern mine reclamation minimizes and mitigates the environmental effects of mining.

In Kalahandi district no stone Quarry has been reported as exhausted of mineral, hence no reclamation approach has been implemented in present date. Mainly two types of reclamation proposal are normally proposed i.e. Firstly Back filling of the exhausted mine by mine generated waste and capping of top soil for forest plantation and growth. Secondly proper fencing of quarried area and can be developed as water reservoir, fishery development or tourist attraction points after the life of the mine.

24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN.

Risk assessment is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat. Activities requiring assessment of risk due to occurrence of most probable instances of hazardand accident are both onsite and off-site.

It must be realized that any incident may develop into a major emergency even with the best safety measures and programmes in any industry. Hence, an Emergency procedure will be planned properly and documented to help in reducing time loss, chaos and confusion at the hour of need by assigning person who will engage in meeting emergency smoothly and effectively. Any accident which has potential to develop into a major emergency can threaten large number of person or large area of the industries on the site may affect safety of the public, property and environment. Hence, it is absolutely essential that emergency procedures will be properly planned and documented.

Stone quarry mining is an opencast practice in the district, hardly cause disastrous situation except bench failure if the slope of the benches are not well maintained and height of the benches are exceptionally high not executed as per the approved Plan. Any disastrous situation raised in the mining area must be reported to the concern authorities as soon as possible.

25. DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT. (LAST FIVE-YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED).

As per the data provided by CDMO, Kalahandi *Tuberculosis* patients cases of last 5 years is as follows;

Sl No	Year	TB Cases
01	2014	1633
02	2015	1703
03	2016	1629
04	2017	1411
05	2018	1427
06	2019	1224 till 14.10.19

No case of Silicosis recorded in the district.

26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT.

As the stone quarry lease within the district are non-forest lands rather revenue lands. As per the guidelines prescribed by OMMCR-2016 a safety zone of 7.5m has been considered for all quarry leases all along the inside of boundary line. Plantation proposal has been usually stated in the approved Mining Plans for all quarry leases. Saplings of local plants has been proposed to be planted in the safety zone area of quarries.

27. ANY OTHER INFORMATION.

Kalahandi district has a glorious rich cultural past, rich in agriculture. It is at the northern marginal area of Eastern Ghat Province having potential of several valuable minerals like Bauxite, gem stones, dimension stones, ordinary stones, sand etc. Systematic & scientific application of technologies in all fields will definitely enhance the livelihood of the common man of the area and the district can contribute a major part in thriving of the state as well as the nation.

As per Point-09 of notification the details of the leases in the district as per the following format are: ***ANNEXURE-I***

In this case only ***Stone/Road metal*** *has been considered.*

Sl. No	Name of the Tahasil	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)	Period of Mining lease (Initial)		Date of commencement of Mining Operation	Status (Working/Non Working/Temp. Working for dispatch etc.	Obtained Environmental Clearance (Yes/No), If Yes Letter No with date of grant of EC	Location of the Mining lease (Latitude & Longitude)
1	2	3	4	5	6	7	8 From	9 To	12	13	15	17
1.	Lanjigarh	Benipokhari-1 Stone Quarry	Sri Jagdeep Bansal	At/Po/PS-Kantabanji, Dist-Bolangir 9556159744	No.119 Dt. 13.01.18	4.989	13.1.18	31.3.21	30.01.18	Working	No. 72/DEIAA Dt. 23.12.17	Benipokhari-1 Khata No. 18. Plot No. 57 Lat.-19° 52' 55.38"N Long.- 83° 24' 54.92"E
2.	Lanjigarh	Benipokhari-2 Stone Quarry	Sri Niraj Agrawal	Club Pada, Bolangir 9438002222	No. 153 Dt. 24.01.18	4.856	24.1.18	31.3.21	30.01.18	Working	No. 74/DEIAA Dt. 23.12.17	Benipokhari-2 Khata No. 18. Plot No. 57 Lat.-19° 52' 53.71"N Long.-83° 24' 54.96"E

3	Lanjigarh	Benipokhari-4 Stone Quarry	Sri AnandBharati	14-1-Nanraji Road, 135/10 Visakhapatnam 9966110933	No. 169 Dt. 27.01.18	4.168	27.1.18	31.3.21	30.01.18	Working	No. 76/DEIAA Dt. 23.12.17	Benipokhari-4 Khata No. 18. Plot No. 57 Lat.- 19^0 52' 55.16"N Long.- 83^0 25' 04.96"E
4	Lanjigarh	Tadabala-1 Stone Quarry	Sri P.K. Agrawal	At/Po-Lanjigarh Dist.-Kalahandi 9861655618	No. 134 Dt. 15.01.18	2.023	15.1.18	31.3.21	30.01.2018	Working	No 68/DEIAA Dt. 23.12.17	Tadabala-1 Khata No. 32. Plot No. 78 Lat.- 19^0 58' 22.18"N Long.-83^0 25' 57.41"E
5	Lanjigarh	Tadabala-2 Stone Quarry	Sri Sameer Kumar Budhia	Mundagoan Narla, Dist-Kalahandi 9668244555	No. 147 Dt. 19.01.18	2.023	19.1.18	31.3.21	30.01.2018	Working	No. 70/DEIAA Dt. 23.12.17	Tadabala-2 Khata No. 32. Plot No. 78
6	Koksara	Sarasmal Stone Quarry	Sri Kishor Chandra Naik	At-Sarasmal Po-Dangriguda PS- Koksara Dist-Kalahandi	No. 1850 Dt. 22.09.15	11.33	29.8.17	28.8.20	29.08.2017	Working	No. 3168/SEIAA Dt. 21.06.17	SarasmalKhata No. 8 & Plot No. 39

7	Koksara	Jaltamunda Stone Quarry	Sri Subash Chandra Mund	At/Po/PS-Jaipatna Dist-Kalahandi	No. 1421 Dt. 06.07.15	5.26	01.7.16	30.6.21	01.07.2016	Working	No. 1616/SEIAA Dt. 21.06.16	Jaltamunda Khata No. 156. Plot No. 1101 & 1191
8	Kalahandi	Kerandihapar stone Quarry	Sri B.K. Behera	Bhawanipatna Dist-Kalahandi	Dt.16.03.15	0.809	01.07.16	30.06.21	01.07.2016	Working	No. 34/DEIAA Dt.20.05.16	Lat.-19°49'34.500"N Long.-83°11'54.10"E
9	Kalahandi	Turpi Stone Quarry	Sri JadumaniSahoo	Turpi Bhawanipatna Dist-Kalahandi	Dt.23.03.15	2.023	01.07.16	30.06.21	01.07.2016	Working	No. 50/DEIAA Dt.20.05.16	Lat.-20°01'32.60"N Long.-83°04'26.400"E
10	Kalahandi	Ghusrigudi-1stone Quarry	Sri B.P. Das	Bhawanipatna Dist-Kalahandi	Dt.16.03.15	1.21	01.07.16	30.06.21	01.07.2016	Working	No. 48/DEIAA Dt.20.05.16	Lat.-19°59'28.30"N Long.-83°06'05.00"E
11	Kalahandi	Bhikajharan Stone Quarry	Sri A. Pradhan	Bhawanipatna Kalahandi	Dt.16.03.15	1.222	17.07.16	16.07.21	17.07.2016	Working	No. 36/DEIAA Dt.20.05.16	Lat.-20°02'2.49"N Long.-83°05'26.51"E

12	Kalahandi	Gajkhola Stone Quarry	Sri U.C. Panda	Bhawanipatna Kalahandi	Dt.16.03.15	0.809	11.08.16	10.08.21	11.08.2016	Working	No. 44/DEIAA Dt.20.05.16	Lat.- 20°39'54.63" N Long.- 82°38'52.60" E
13	Kalahandi	Tentulichuan Stone Quarry	Sri Rajesh Thakur	Bhawanipatna Kalahandi	Dt.18.03.15	1.375	31.12.15	30.12.20	31.12.2015	Working	No. 3899/SEIAA Dt.14.08.15	Lat.- 19°58'39.10" N Long.-83° 06'00.10"E
14	Kalahandi	Ghusrigudi-2 Stone Quarry	Sri Rajesh Thakur	Bhawanipatna Kalahandi	Dt.30.05.16	4.046	09.06.17	08.06.22	09.06.2017	Working	No. 38/DEIAA Dt.24.04.2017	Lat.- 19°58'15.54" N Long.-83° 05'14.40"E
15	Kalahandi	Jamunabahal Stone Quarry	Prabeen Ku. Khamari	Bhawanipatna Kalahandi	Dt.23.03.15	4.37	19.07.16	18.07.21	19.07.2017	Working	No. 46/DEIAA Dt.20.05.16	Lat.- 19°58'09.20" N Long.- 83°12'59.00" E
16	Kalahandi	Karlasoda Stone Quarry	AshishKu. Agrawal	Kesinga Kalahandi	Dt.22.05.17	5.000	16.04.18	15.04.23	16.04.2018	Working	No. 85/DEIAA Dt.26.02.18	Lat.- 20°11'50.02" N Long.- 82°04'12.48" E

17	Kalahandi	Mankidipada Stone Quarry	B.S. Sandhu	Bhawanipatna Kalahandi	Dt.30.05.16	3.23	20.03.18	19.03.23	20.03.2018	Working	No. 83/DEIAA Dt.26.02.18	Lat.- 20°08'09.65" N Long.- 83°07'18.69" E
18	Dharmagarh	Gadiajore Stone Quarry	Sri jibanJyoty Panda	Dharmagarh Kalahandi 9937907237	No. 1654 Dt. 30.07.15	12.561	2015-16	2019-20	26.06.2015	Working	No. 1114/SEIAA Dt. 31.03.18	GadiajoreKhata No. 8 Plot No. 1368 Lat.- 19°50'13.00" N Long.- 82°43'38.93" E
19	Dharmagarh	Turihaldi Stone Quarry	Dinesh Kumar Agrawal	Dharmagarh Kalahandi 9437076928	No. 1658 Dt. 30.07.15	4.957	2015-16	2019-20	26.06.2015	Working	No. 66/DEIAA Dt. 20.05.16	Turihaldi Khata No. 275 Plot No. 1576, 1578, 1127, 1587, 1591, 1129 Lat.- 19°50'15.52" N Long.- 82°43'32.68" E

20	Dharma garh	Gadia jore Stone Quarr y	Sri Rashmi Ranjan Jena	Dharmagar h Kalahandi	No. 1656 Dt. 30.07.1 5	4.362	2015-16	2019-20	26.06.201 5	Non-Working	No. 1827/SEIAA Dt.27.07.16	GadiajoreKh ata No. 275 Plot No. 82, 330 & 314 Lat.- 19°51'22.35" N Long.- 82°43'47.65" E
21	Junagar h	Kalop ala Stone Quarr y	Brajendra Meher	Chichaigud aDist-Kalahandi	-	0.809	2018	2021	11.7.18	Working	No. 87/DEIAA Dt. 26.12.18	Khata No.9, Plot No.1452 &1 Lat.- 19°45'57.307 "N Long.- 82°49'41.739 "E
22	Kesinga	Bara muniD angar Stone Quarr y	Seikh Rahim	Kesinga, Dist-Kalahandi	23.12.1 6	5.665	16-17	20-21	23.12.16	Working	No. 1647/SEIAA, Dt.01.06.16	Lat.- 20°06'02.04" N Long.- 83°14'22.88" E
23	Kesinga	Suben dang ar-1 Stone Quarr y	Saroj Prasad Nayak	Bhawanipat na, Dist-Kalahandi	03.03.1 7	5.107	16-17	20-21	03.03.17	Working	No. 2466/SEIAA, DT.27.01.17	Lat.- 20°02'11.96" N Long.- 83°08'08.90" E

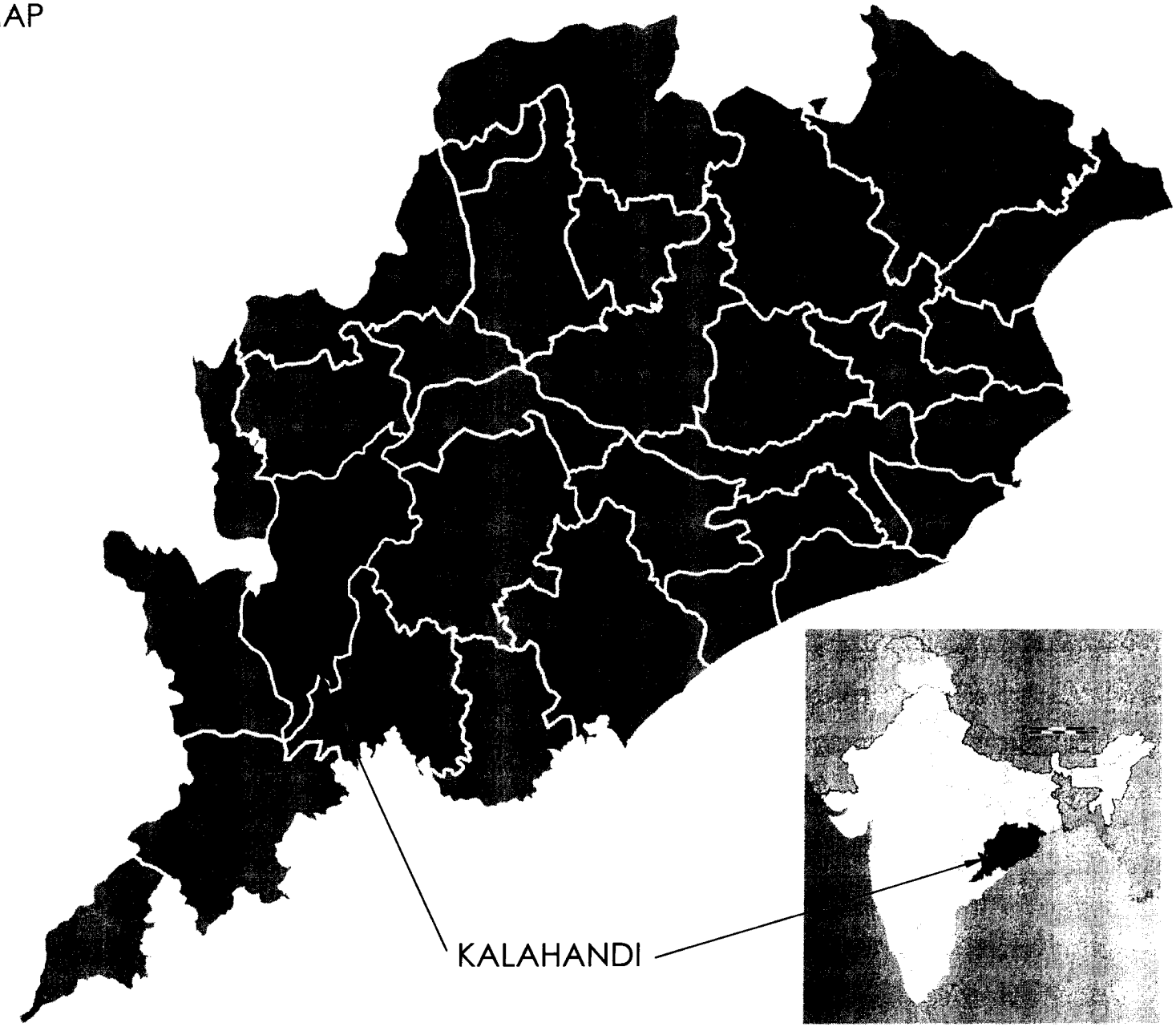
24	Kesinga	Subendangar-2 Stone Quarry	GyanjitNayak	Mukhiguda, Dist-Kalahandi	23.05.17	5.172	17-18	21-22	23.05.17	Working	No. 2446/SEIAA, DT.27.01.17	Lat.-20°02'9.6"N Long.-83°08'20.1"E
25	Kesinga	Subendangar-3 Stone Quarry	Bedprakash Das	Paramandapur, Dist-Kalahandi	03.03.17	5.131	16-17	20-21	03.03.17	Working	No. 2447/SEIAA, DT.27.01.17	Lat.-20°01'49.70"N Long.-83°08'16.90"E
26	Kesinga	Subendangar-4A Stone Quarry	Harmindar Singh Gill	Bhawanipatna, Dist-Kalahandi	04.04.16	4.330	16-17	20-21	04.04.16	Working	No. 52/DEIAA, DT.20.05.16	Lat.-20° 01'44.00"N Long.-83° 08'7.4"E
27	Kesinga	Subendangar-4B Stone Quarry	Harmindar Singh Gill	Bhawanipatna, Dist-Kalahandi	04.04.16	0.817	16-17	20-21	04.04.16	Working	No. 54/DEIAA, DT.20.05.16	Lat.-20° 01'42.30"N Long.-83° 08'6.90"E
28	Kesinga	Kurlupada Stone Quarry	Raj Ku. Agrawal	Kesinga, Dist-Kalahandi	30.05.16	2.205	16-17	20-21	30.05.16	Working	No. 40/DEIAA 20.05.16	Lat.-20° 11'38.20"N Long.-83° 15'3.80"E

29	Kesinga	Kantesir Strone Quarry	Raj Ku. Agrawal	Kesinga, Dist-Kalahandi	30.05.17	2.751	17-18	21-22	30.05.17	Working	No. 38/DEIAA 20.05.16	Lat.-20^0 12'48.10"N Long.-83^0 16'12.30"E
30	Kesinga	Kinerkela Stone Quarry	Raj Ku. Agrawal	Kesinga, Dist-Kalahandi	30.05.18	2.326	18-19	22-23	30.05.18	Working	No. 42/DEIAA 20.05.16	Lat.-20^0 15'36.50"N Long.-83^0 16'33.20"E
31	Golamunda	Sargiguda Stone Quarry	Sanjib Ku. Dash	Kandamal, Dist-Kalahandi	-	0.473	17-18	21-22	-	Working	-	Lat. 19^0 59'22.77"N Long.-82^0 46'50.08"E
32	Golamunda	BaijalpurStone Quarry	Mahabir Prasad Agrawal	Bhawanipatna	-	7.369	16-17	20-21	-	Working	-	Lat.20^0 01'21.70"N Long.-82^0 48'55.80"E

NB: *in the above table omitted Columns are,*
Column ***10&11*** *Period of Mining lease (1st/2nd...renewal)-****NA***
Column ***14*** *Captive/ Non Captive-* ***All Non Captive***
Column ***16*** *Method of Mining (Opencast/Underground)-* ***All Open cast***

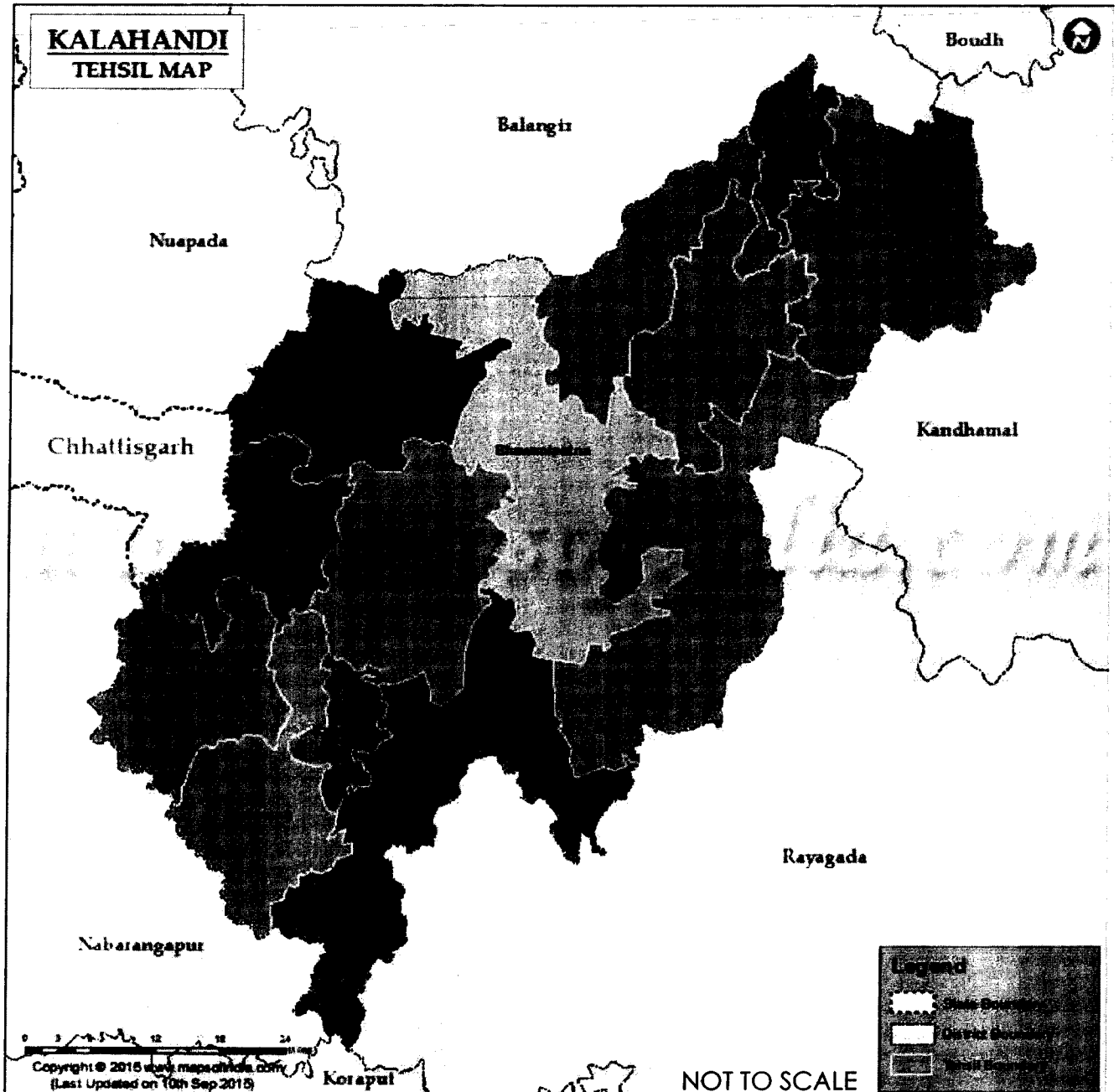
INDEX MAP

PLATE-I



NOT TO SCALE

PLATE-II



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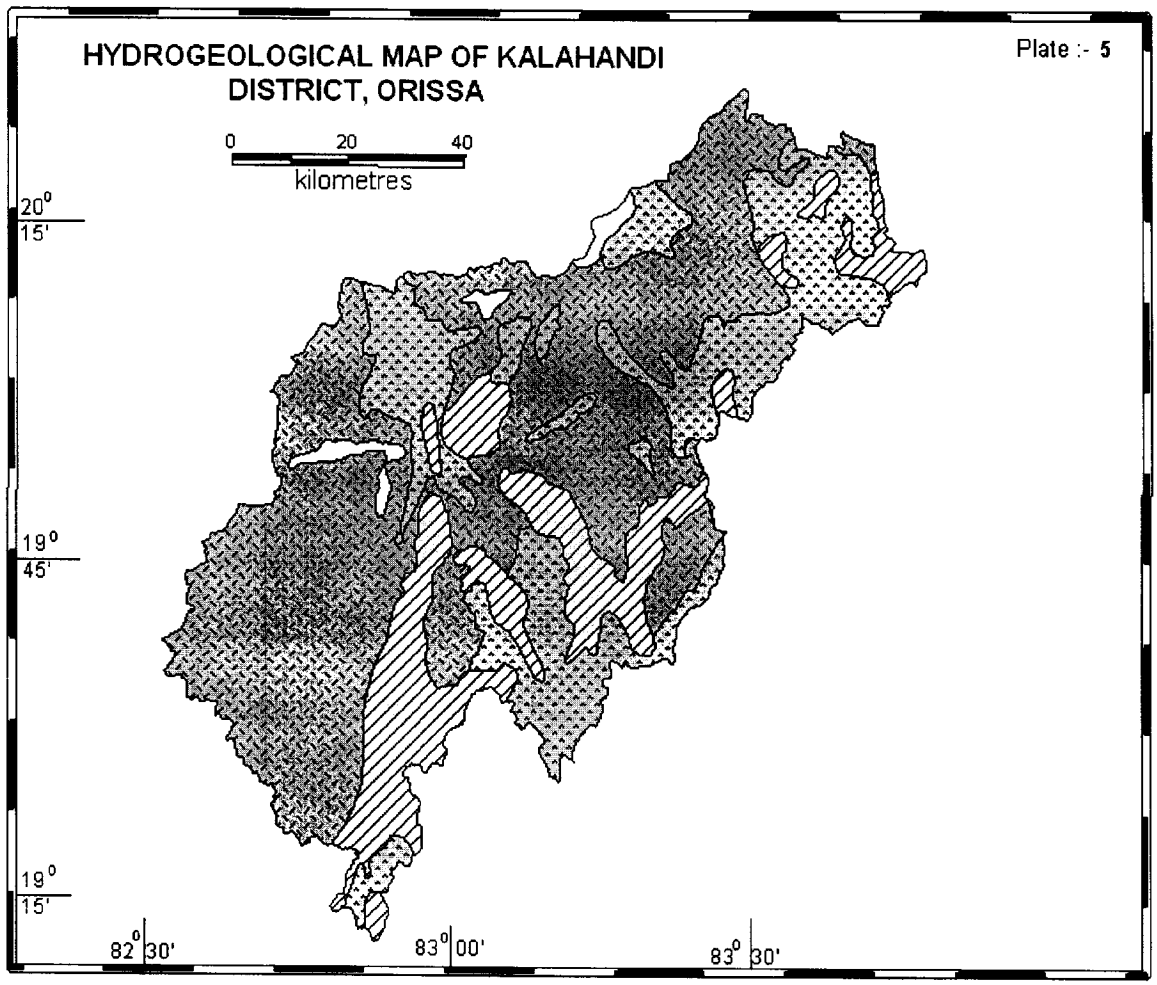

LEGEND

	AGE GROUP	LITHOLOGY	HYDROGEOLOGICAL CONDITIONS	GROUND WATER POTENTIAL
UNCONSOLIDATED FORMATIONS	QUATERNARY	RECENT ALLUVIUM, LATERITES & LATERITIC GRAVELS	POROUS FORMATIONS: THIN DISCONTINUOUS PATCHES FORMING SHALLOW AQUIFERS	LIMITED TO MODERATE YIELD PROSPECTS BELOW 20m³/Hr.
CONSOLIDATED FORMATIONS	ARCHEAN	GRANITE & ITS VARIANTS	FISSURED FORMATION: GROUND WATER RESTRICTED TO RESIDUUM AND FRACTURE ZONE HAVING SECONDARY POROSITY	LIMITED TO MODERATE YIELD PROSPECTS BELOW 30 m³/ Hr.
		CHARNOCKITES		
		KHONDALITES		