

MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED

2nd Floor Prakashgadh Building, G-9

Prof. Anantkanekar Marg Bandra (E) Mumbai-400051

DGPS REPORT

ON

COMPENSATORY AFFORESTATION AREA

IDENTIFIED FOR FOREST CLEARANCE

**GARE PALMA SECTOR-II, COAL MINE , TAMNAR,
RAIGARH C.G.**



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1.0 INTRODUCTION:

Background :

Maharashtra State Power Generation Company Limited (hereinafter referred to as MAHAGENCO) is a State owned Public Sector Unit of Government of Maharashtra engaged in power generation having its registered office situated Plot No. G-9, Prof Anant Kanekar Marg, Bandra (East), Mumbai. Maharashtra State Power Generation Co Ltd. has been incorporated under Indian Companies Act 1956 pursuant to decision of Govt. of Maharashtra to reorganize erstwhile Maharashtra State Electricity Board (herein after referred to as "MSEB"). The said reorganization of the MSEB has been done by Govt. of Maharashtra pursuant to Part XIII read with section 131 of The Electricity Act 2003. MAHAGENCO has been incorporated on 31.5.2005 with The Registrar of Companies, Maharashtra, Mumbai and has obtained Certificate of Commencement of Business on 15.09.2005. MAHAGENCO is engaged in the business of generation and supply of electricity and has been vested with generation assets, interest in property, rights and liabilities of MSEB.

MAHAGENCO has the highest overall generation capacity and the highest thermal installed capacity amongst all the state power generation utilities in India. In terms of installed capacity, it is the second highest generation company after NTPC. The company has a generation capacity of 13186 MW comprising of 9750 MW Thermal Power Plants, 2580 MW Hydel Power Plant, 672 MW Gas Turbine and 184 MWp Solar. The details of the power plants are given below.

Table 1.0 : Installed Capacity of MAHAGENCO Plants

Sr. No.	Power Station	Units & Size (MW)	Installed Capacity (MW)
A : Thermal Power Stations			
1	Koradi Units 6 To 10	$2 \times 210 + 3 \times 660$	2400
2	Nashik Units 3 To 5	3x210	630
3	Bhusawal Units 3 To 5	$1 \times 210 + 2 \times 500$	1210
4	Paras Units 3 & 4	2x250	500
5	Parli Units 6 to 8	3x250	750
6	Khaparkheda Units 1 To 5	$4 \times 210 + 1 \times 500$	1340

Sr. No.	Power Station	Units & Size (MW)	Installed Capacity (MW)
7	Chandrapur Units 3 To 9	2x210 + 5x500	2920
	Total Installed Capacity of TPPs		9750
B : Gas Turbine Power Station			
	Uran Gas Turbine.	4x108	432
	W.H.R. Units 1&2	2x120	240
	Total Installed Capacity of Gas-based Plants		672
C Hydro Power Stations			
	Koyna Hydro	St I&II- 4x70 + 4x80, St III- 4x80, St. IV- 4x250 & Koyna Dam Foot- 2x18	1956
	Small Hydropower projects		374
	Ghatghar Pump Storage	2x125	250
	Total Installed Capacity of Hydel Plants		2580
D : Solar			
Total Installed Capacity (A+B+C+D)			13186

The Project : The Gare Palma Sector II coal Mines has been allocated to Maharashtra State Power Generation Company Limited (MAHAGENCO) by Ministry of Coal, Govt. of India for end-use at its own plants in Maharashtra. The Gare Palma Sector II Coal Mines spread over an area of 25.83 sq.km (2583.486 ha) is part of the Mand Raigarh Coalfield in Tamnar Tehsil of Raigarh District, Chhattisgarh. The mine lease area is located in the 14 villages of Bhalumura, Chitwahi, Dholnara, Dholesara, Gare, Jhinkabahal, Kunjemura, Libra, Murogaon, Pata, Radopali, Saraitola, Sarasmal, and Tihlirampur. The peak capacity of the mines will be 23.6 MTPA with both Opencast (22.0 MTPA) and Underground (1.6 MTPA) operations with a mine life of 69 years.

The area is covered in the Survey of India Toposheet No. 64 N/8 & 12 (R.F. 1:50,000) and is bounded by the coordinates shown in table below.

Site Coordinates

Point	Latitude	Longitude
A	22° 08' 51.495" N	83° 26' 15.580" E
B	22° 10' 05.178" N	83° 26' 15.433" E
C	22° 10' 49.891" N	83° 27' 26.624" E
D	22° 09' 09.892" N	83° 28' 57.871" E
E	22° 08' 03.774" N	83° 29' 49.271" E
F	22° 06' 24.215" N	83° 31' 12.632" E
G	22° 07' 18.066" N	83° 29' 13.857" E
H	22° 06' 50.059" N	83° 29' 15.318" E

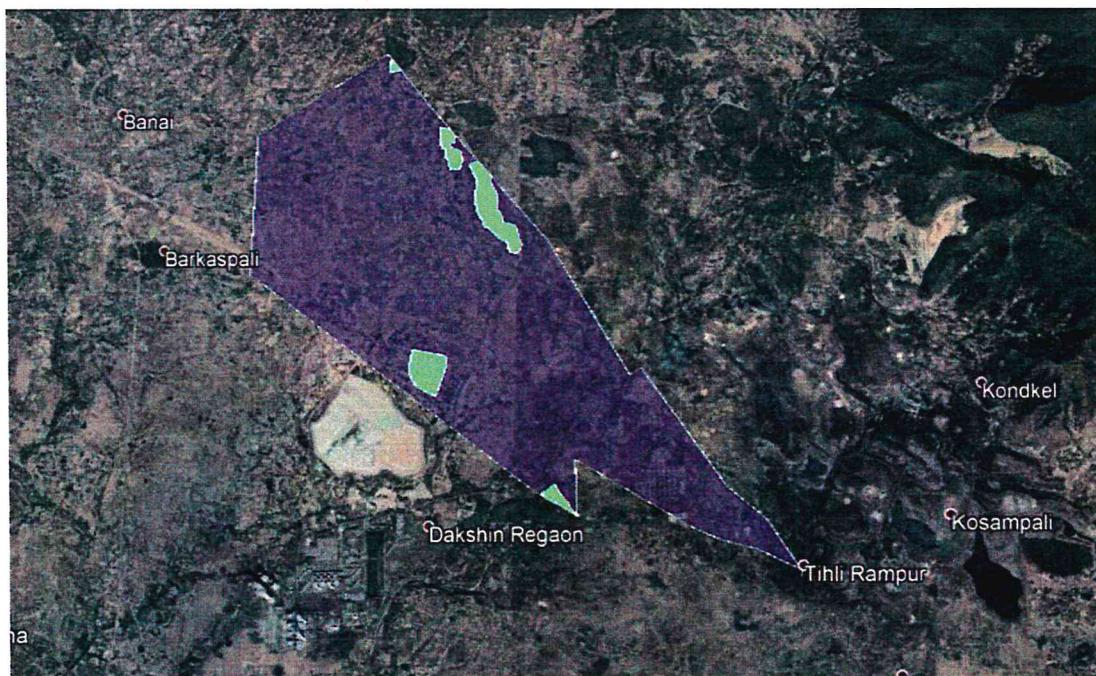
The Raigarh - Sundargarh road is 9 km away in south east direction and Ambikapur Highway (SH-1) is 6 km in west direction from Phase-II site. The District headquarter is Raigarh which is aerially about 35km from the site and the nearest town is Tamnar at a distance of about 10 km to the south. The nearest railway station is also at Raigarh while the nearest airport is Raipur at a distance of 290 km in the south west direction. The inter-state boundary with Odisha is almost adjacent to the block on the eastern side, 10 km to the east. The details of the project site are given in Table below

S.No.	Aspect	Description
1.	Project	Gare Palma Sector-II Coal Mine
2.	Location	
(i)	State	Chhattisgarh
(ii)	District	Raigarh
(iii)	Taluka	Tamnar
(iv)	Villages	Bhalumura, Chitwahi, Dholnara, Dholesara, Gare, Jhinkabahal, Kunjemura, Libra, Murogaon, Pata, Radopali, Saraitola, Sarasmal, Tihlirampur
(vi)	Latitude	22° 6' 24.215" N to 22° 10' 49.891" N
(vii)	Longitude	83° 26' 15.433" E to 83° 31' 12.632" E
3.	Distance	
(i)	Nearest Town	Tamnar, 10 km, S
(ii)	District Headquarters	Raigarh, 35 km, S
(iii)	Major Roads	Raigarh-Ambikapur Highway (SH-1), 6 km, W Raigarh-Gharghoda Road via Tamnar
(iv)	Railway Station	Raigarh, 35 km, S
(v)	Airport	Raipur, 290 km, SW

1.1 General

The Gare Palma-II Coal Mine comprising total lease area of 25.83 km² has been allotted to Maharashtra State Power Generation Company Limited (MAHAGENCO) in the district of Raigarh of Chhattisgarh state. The location map is given in Figure 1.1. M/s Maharashtra State Power Generation Company Limited (MAHAGENCO) is in process of obtaining Forest Clearance for Gare Palma-II Coal Mine which requires Compensatory Afforestation (CA) . In context of above, the need for identifying the Land suitable for CA has been envisaged.

Accordingly, M/s Learn Nature Consultants, Raipur who is already working on the process of obtaining Forest Clearance for Gare Palma-II Coal Mine have been entrusted the Job vide Order Dated 11.11.2020 to carry out the work for Search of land for proposed Forest Land firstly search for 429.74 Ha of Govt land and if Govt land is not available then search for 214.869 Ha of Private Land for CA purpose for getting forest clearance of Gare Palma-II Coal Mine.



LNC has visited to various places for search of Govt. land 430 Ha and private land of 214.869 Ha. in the Chhattisgarh state for Compensatory afforestation purpose. After through due diligence the encumbrance free Govt land was not available due to which consultant has identified private land of 214.869 Ha. for CA purpose.

After getting the data from the land owners LNC had submitted three proposals of private land of 214.869 Ha for CA purpose. And as per the instruction from the officials of the MSPGCL, we have done DGPS survey of the most suitable land as per the proposal Number 2 mention in the report for Search of Land Submitted earlier.

2. INTRODUCTION TO DGPS

- Differential Global Positioning System (DGPS) is an enhancement to Global Positioning System that provides improved location accuracy, from the 15-meter nominal GPS accuracy to about 10 cm in case of the best implementations.
- DGPS refers to using a combination of receivers and satellites to reduce/eliminate common receiver based and satellite based errors reduce orbit errors reduce ionospheric and tropospheric errors reduce effects of SA eliminate satellite and receiver clock errors.
- Improve accuracy significantly 100's of meters to meters to centimeters to millimeters
 1. DGPS uses one or several (network) fixed ground based reference stations (in known locations).
 2. The base station compares its own known location, to that computed from a GPS receiver.
 3. Any difference is then broadcast as a correction to the user.

Correction signals can be broadcast either from ground stations, or via additional satellites. These services are privately owned and usually require a user subscription.

By using DGPS we can improve our positional accuracy from around 1.5m with standard GPS to around 40cm with DGPS, without the need for post processing. In the case of the road survey van (top right), users can measure the amount of road wear and judge whether the road should be resurfaced just by driving over it. Just one day's driving can replace a month's manual work using traditional methods. There are many other applications like this. The labour saving is immense but at the same time, previously impossible tasks are made possible such as the prediction of earthquakes before they occur.

DGPS Summary

- Term refers to simple C/A code differential
- Available on GPS receivers from low cost to high cost
- Produces accuracies from sub-meter to meters
- Many real-time DGPS correction providers - Coast guard, EGNOS, OmniSTAR
- Used for many different applications including marine navigation, precision farming and vehicle testing applications.

2.1 Real Time Kinematic:

Real Time Kinematic is an advanced form of DGPS which uses the satellites carrier wave to compare 2 observations from different receivers within the system, to fine tune the satellite and receiver clock errors, thus improving positional accuracy.

The GPS signal is made up of 3 distinct components:

- Carrier wave
- GPS Code
- Navigation message

Typical GPS receivers will use the GPS navigation message to calculate its position. RTK uses the carrier wave of the GPS signal, which is 19.02cm long. By counting the number of cycles (and phase of the carrier), the travel time and distance can be measured more accurately.

2.2 RTK Summary

- Similar technique as DGPS that uses the carrier phase to provide more accurate positioning
- Cost is higher compared to DGPS receivers
- Produces accuracies from 20 cm to sub-centimeters
- RTK corrections provided via a local base station or by a private correction provider - OmniSTAR, Leica, Trimble
- Used for many different applications including machine control (construction, container ports, farming), vehicle testing applications, surveying (land, marine, hydrographic, aerial)

3. Survey Site:

The Private land of 214.938 Ha. Comes under four villages Natwarpur, Chakradharpur, and Bangursaria in Raigarh District. The area is situated around 15 km towards north-east from Raigarh Township, which is also the nearest railway station on Mumbai-Howrah main line of SE Railway and 37 KM from the Coal Block Area. The area is also surrounded by forest area which makes the land more suitable for the compensatory Afforestation.

TOTAL AREA

S.N.	Village	Area
1	Chakradharpur	115.207 Ha
2	Natwarpur	95.483 Ha
3	Bangursiya	4.248 Ha
TOTAL AREA		214.938

समूदाय समिति कार्यालय
रायगढ़ (छ.ग.)

वन परिसंरक्षण समिति
रायगढ़ परिक्षेत्र⁶



4. PILLAR COORDINATES

Chakradharpur Area

Point Name	Point No.	Latitude	Longitude
CP-B	1	21° 58' 42.437"	83° 29' 24.078"
CP-B	2	21° 58' 44.194"	83° 29' 22.939"
CP-B	3	21° 58' 44.959"	83° 29' 21.975"
CP-B	4	21° 58' 45.991"	83° 29' 19.582"
CP-B	5	21° 58' 47.189"	83° 29' 16.52"
CP-B	6	21° 58' 49.237"	83° 29' 13.574"
CP-B	7	21° 58' 50.527"	83° 29' 11.135"
CP-B	8	21° 58' 50.641"	83° 29' 10.436"
CP-B	9	21° 58' 52.788"	83° 29' 6.974"
CP-B	10	21° 58' 54.441"	83° 29' 4.65"
CP-B	11	21° 58' 55.915"	83° 29' 3.335"
CP-B	12	21° 58' 57.68"	83° 29' 0.492"
CP-B	13	21° 58' 58.936"	83° 29' 0.258"
CP-B	14	21° 59' 1.278"	83° 28' 59.579"
CP-B	15	21° 59' 4.309"	83° 28' 59.435"
CP-B	16	21° 59' 6.072"	83° 28' 58.992"
CP-B	17	21° 59' 9.403"	83° 28' 58.524"
CP-B	18	21° 59' 10.949"	83° 28' 55.439"
CP-B	19	21° 59' 11.969"	83° 28' 53.565"
CP-B	20	21° 59' 12.98"	83° 28' 52.002"
CP-B	21	21° 59' 10.885"	83° 28' 51.085"
CP-B	22	21° 59' 9.694"	83° 28' 53.389"
CP-B	23	21° 59' 8.821"	83° 28' 54.923"
CP-B	24	21° 59' 7.904"	83° 28' 54.995"
CP-B	25	21° 59' 7.347"	83° 28' 56.227"
CP-B	26	21° 59' 5.07"	83° 28' 56.274"
CP-B	27	21° 59' 2.817"	83° 28' 56.313"
CP-B	28	21° 59' 0.299"	83° 28' 56.249"
CP-B	29	21° 58' 59.968"	83° 28' 56.21"
CP-B	30	21° 58' 58.582"	83° 28' 56.037"
CP-B	31	21° 58' 52.985"	83° 28' 56.907"
CP-B	32	21° 58' 50.712"	83° 28' 57.052"
CP-B	33	21° 58' 49.236"	83° 28' 57.225"
CP-B	34	21° 58' 46.793"	83° 28' 57.53"
CP-B	35	21° 58' 44.614"	83° 28' 57.737"
CP-B	36	21° 58' 41.737"	83° 28' 57.819"
CP-B	37	21° 58' 37.524"	83° 28' 57.92"
CP-B	38	21° 58' 32.984"	83° 28' 58.541"
CP-B	39	21° 58' 29.174"	83° 28' 58.822"
CP-B	40	21° 58' 23.234"	83° 28' 59.222"



Point Name	Point No.	Latitude	Longitude
CP-B	41	21° 58' 18.192"	83° 28' 59.834"
CP-B	42	21° 58' 16.089"	83° 28' 59.899"
CP-B	43	21° 58' 14.683"	83° 29' 0.189"
CP-B	44	21° 58' 11.854"	83° 29' 0.632"
CP-B	45	21° 58' 7.767"	83° 29' 1.385"
CP-B	46	21° 58' 7.798"	83° 29' 4.825"
CP-B	47	21° 58' 7.707"	83° 29' 9.434"
CP-B	48	21° 58' 10.935"	83° 29' 10.045"
CP-B	49	21° 58' 13.339"	83° 29' 9.575"
CP-B	50	21° 58' 13.279"	83° 29' 7.855"
CP-B	51	21° 58' 13.482"	83° 29' 6.41"
CP-B	52	21° 58' 16.484"	83° 29' 6.199"
CP-B	53	21° 58' 19.598"	83° 29' 5.823"
CP-B	54	21° 58' 21.388"	83° 29' 5.885"
CP-B	55	21° 58' 21.835"	83° 29' 5.92"
CP-B	56	21° 58' 21.513"	83° 29' 10.445"
CP-B	57	21° 58' 20.555"	83° 29' 13.083"
CP-B	58	21° 58' 23.717"	83° 29' 14.025"
CP-B	59	21° 58' 27.99"	83° 29' 14.735"
CP-B	60	21° 58' 31.443"	83° 29' 15.932"
CP-B	61	21° 58' 34.32"	83° 29' 17.125"
CP-B	62	21° 58' 34.307"	83° 29' 17.163"
CP-B	63	21° 58' 34.834"	83° 29' 17.361"
CP-B	64	21° 58' 35.888"	83° 29' 18.225"
CP-B	65	21° 58' 36.429"	83° 29' 18.991"
CP-B	66	21° 58' 33.956"	83° 29' 20.333"
CP-B	67	21° 58' 32.548"	83° 29' 20.538"
CP-B	68	21° 58' 30.557"	83° 29' 20.093"
CP-B	69	21° 58' 28.093"	83° 29' 19.337"
CP-B	70	21° 58' 25.601"	83° 29' 18.78"
CP-B	71	21° 58' 23.558"	83° 29' 18.954"
CP-B	72	21° 58' 22.495"	83° 29' 18.753"
CP-B	73	21° 58' 20.269"	83° 29' 20.449"
CP-B	74	21° 58' 18.854"	83° 29' 21.434"
CP-B	75	21° 58' 17.01"	83° 29' 21.615"
CP-B	76	21° 58' 13.807"	83° 29' 20.606"
CP-B	77	21° 58' 12.64"	83° 29' 22.891"
CP-B	78	21° 58' 11.074"	83° 29' 25.469"
CP-B	79	21° 58' 9.123"	83° 29' 28.593"
CP-B	80	21° 58' 6.739"	83° 29' 32.781"
CP-B	81	21° 58' 7.258"	83° 29' 35.549"
CP-B	82	21° 58' 7.646"	83° 29' 36.209"
CP-B	83	21° 58' 7.883"	83° 29' 37.529"
CP-B	84	21° 58' 10.347"	83° 29' 39.176"



Point Name	Point No.	Latitude	Longitude
CP-B	85	21° 58' 15.972"	83° 29' 42.067"
CP-B	86	21° 58' 19.454"	83° 29' 43.781"
CP-B	87	21° 58' 22.363"	83° 29' 45.539"
CP-B	88	21° 58' 25.741"	83° 29' 46.896"
CP-B	89	21° 58' 27.127"	83° 29' 46.129"
CP-B	90	21° 58' 28.647"	83° 29' 44.663"
CP-B	91	21° 58' 29.861"	83° 29' 42.406"
CP-B	92	21° 58' 31.054"	83° 29' 39.854"
CP-B	93	21° 58' 31.001"	83° 29' 37.941"
CP-B	94	21° 58' 30.853"	83° 29' 35.243"
CP-B	95	21° 58' 30.515"	83° 29' 32.819"
CP-B	96	21° 58' 33.797"	83° 29' 29.758"
CP-B	97	21° 58' 36.18"	83° 29' 28.261"
CP-B	98	21° 58' 38.519"	83° 29' 26.87"
CP-B	99	21° 58' 39.935"	83° 29' 25.724"

Natwarpur Area

Point Name	Point No.	Latitude	Longitude
NP-B	100	21° 57' 53.723"	83° 29' 59.961"
NP-B	101	21° 57' 53.53"	83° 30' 2.89"
NP-B	102	21° 57' 53.086"	83° 30' 9.653"
NP-B	103	21° 57' 52.47"	83° 30' 19.022"
NP-B	104	21° 57' 51.538"	83° 30' 33.186"
NP-B	105	21° 57' 50.783"	83° 30' 41.961"
NP-B	106	21° 57' 55.056"	83° 30' 42.772"
NP-B	107	21° 58' 7.074"	83° 30' 45.163"
NP-B	108	21° 58' 12.503"	83° 30' 47.196"
NP-B	109	21° 58' 18.651"	83° 30' 28.985"
NP-B	110	21° 58' 25.686"	83° 30' 6.466"
NP-B	112	21° 58' 15.782"	83° 30' 9.415"
NP-B	113	21° 58' 7.998"	83° 30' 5.7"
NP-B	114	21° 58' 2.04"	83° 30' 2.637"
NP-B	115	21° 57' 57.229"	83° 30' 1.881"

उप वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन परिक्षेत्राधिका
री
रायगढ़ परिक्षेत्र

वन मण्डलाधिकारी
रायगढ़, कन्दपुराल



Area Statement :

<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
1	BANGURSIYA	97/10Kh	1.214
2	BANGURSIYA	97/1/Jha/2	0.202
3	BANGURSI YA	97/10/Nya	0.405
4	BANGURSI YA	97/21	1.618
5	BANGURSI YA	97/22	0.809
	Total	Hectare	4.248
<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
1	CHAKRADHARPUR	41	1.23
2	CHAKRADHARPUR	67/11	4.33
3	CHAKRADHARPUR	83	0.271
4	CHAKRADHARPUR	67/9	4
5	CHAKRADHARPUR	67/10	4
6	CHAKRADHARPUR	24	0.51
7	CHAKRADHARPUR	53,/ 2	0.822
8	CHAKRADHARPUR	54/, 2	0.344
9	CHAKRADHARPUR	21	1.898
10	CHAKRADHARPUR	53,/ 1	0.527
11	CHAKRADHARPUR	51,	2.497
12	CHAKRADHARPUR	53,/ 3	0.295
13	CHAKRADHARPUR	54/, 1	0.093
14	CHAKRADHARPUR	54,/ 3	0.251
15	CHAKRADHARPUR	63,/ 1	0.365
16	CHAKRADHARPUR	63,/ 3	0.429
17	CHAKRADHARPUR	64,/ 87	1.36
18	CHAKRADHARPUR	18,/ 4	1.096
19	CHAKRADHARPUR	18,/ 5	1.096
20	CHAKRADHARPUR	18,/ 6	1.096

S.I No.	Location	Khasra	Rakba
21	CHAKRADHARPUR	39	2.991
22	CHAKRADHARPUR	36,/ 1 /G	0.88
23	CHAKRADHARPUR	38,/ 4	0.409
24	CHAKRADHARPUR	43,/ 8	0.584
25	CHAKRADHARPUR	8,/ 74 / kh	0.4
26	CHAKRADHARPUR	18,/ 1	0.486
27	CHAKRADHARPUR	18,/ 2	0.441
28	CHAKRADHARPUR	18,/ 3	1.104
29	CHAKRADHARPUR	30	0.611
30	CHAKRADHARPUR	35	0.656
31	CHAKRADHARPUR	37	0.559
32	CHAKRADHARPUR	49	0.267
33	CHAKRADHARPUR	50	0.995
34	CHAKRADHARPUR	48,/ 77	0.777
35	CHAKRADHARPUR	20	1.384
36	CHAKRADHARPUR	22	0.291
37	CHAKRADHARPUR	23	0.684
38	CHAKRADHARPUR	38/ 3,	1.214
39	CHAKRADHARPUR	38,/ 5	0.809
40	CHAKRADHARPUR	63,/ 2	0.793
41	CHAKRADHARPUR	29,	1.096
42	CHAKRADHARPUR	38,/ 2	0.117
43	CHAKRADHARPUR	8	1.501
44	CHAKRADHARPUR	17	1.42

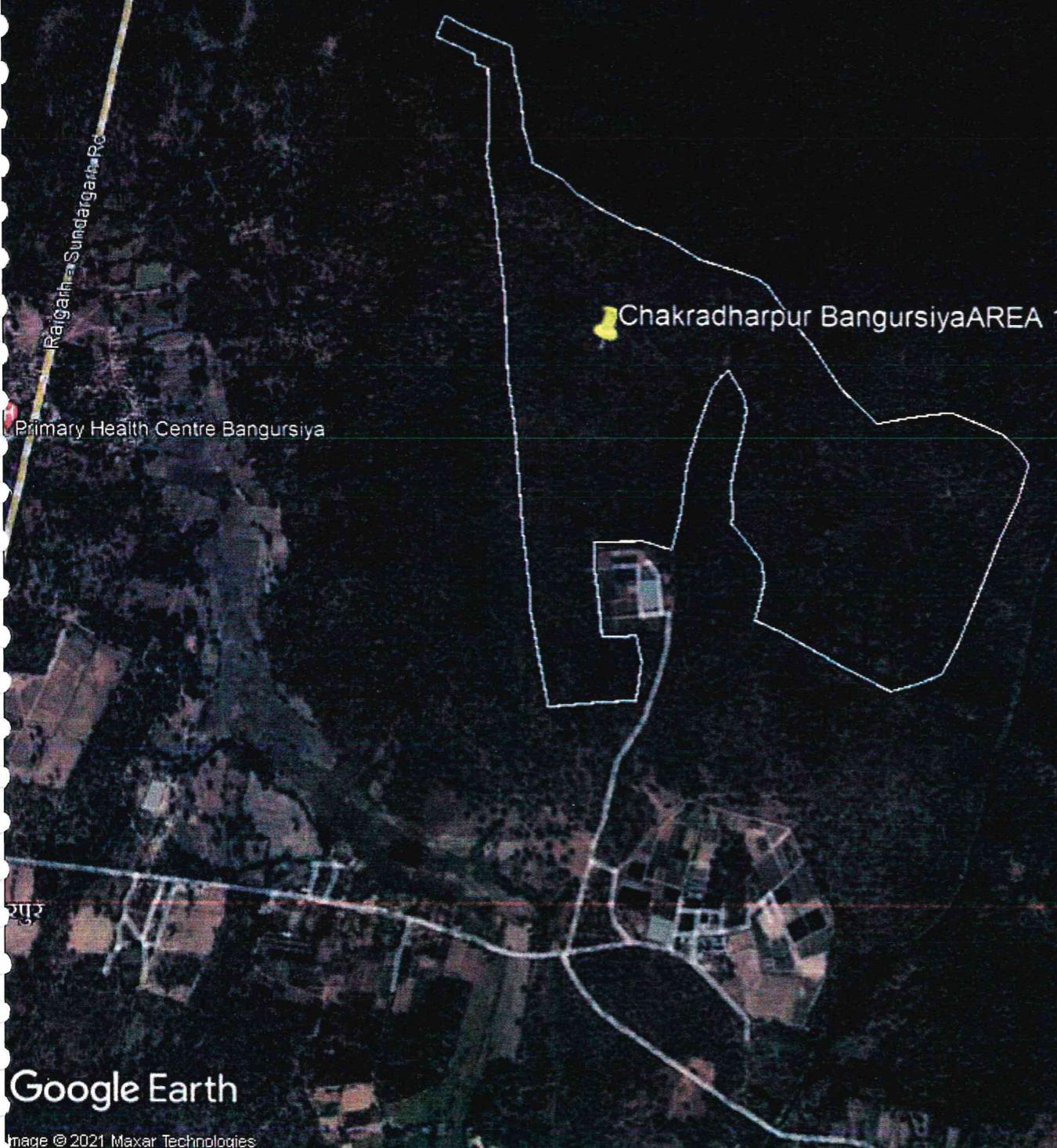
<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
45	CHAKRADHARPUR	34/	3.151
		4	
46	CHAKRADHARPUR	1,/ 1	6.475
47	CHAKRADHARPUR	1,/ 3	6.475
48	CHAKRADHARPUR	1,/ 4	1.886
49	CHAKRADHARPUR	1,/ 5	6.475
50	CHAKRADHARPUR	1/10,	0.607
51	CHAKRADHARPUR	1/21,	0.607
52	CHAKRADHARPUR	3/1,	0.765
53	CHAKRADHARPUR	3/2,	0.809
54	CHAKRADHARPUR	4	0.862
55	CHAKRADHARPUR	5/1,	0.396
56	CHAKRADHARPUR	5/2,	1.012
57	CHAKRADHARPUR	6/7,	0.405
58	CHAKRADHARPUR	6/13,	0.405
59	CHAKRADHARPUR	6/16,	0.405
60	CHAKRADHARPUR	10/1,	0.835
61	CHAKRADHARPUR	10/2,	1.011
62	CHAKRADHARPUR	11/1,	1.188
63	CHAKRADHARPUR	11/2,	2.023
64	CHAKRADHARPUR	11/3,	0.415
65	CHAKRADHARPUR	12/2,	1.619
66	CHAKRADHARPUR	12/,3	2.023
67	CHAKRADHARPUR	13/,2	2.833
68	CHAKRADHARPUR	13/,3	2.833
69	CHAKRADHARPUR	14/1,	1.869
70	CHAKRADHARPUR	14/,2	2
71	CHAKRADHARPUR	34/2	0.135
72	CHAKRADHARPUR	34/3	1.335
73	CHAKRADHARPUR	34/5	1.33
74	CHAKRADHARPUR	36/1/k/2	1.263
75	CHAKRADHARPUR	40	1.668
76	CHAKRADHARPUR	43/2	0.405
77	CHAKRADHARPUR	43/3	0.809
78	CHAKRADHARPUR	43/4	0.809
79	CHAKRADHARPUR	43/5	0.809
80	CHAKRADHARPUR	43/6	0.405
81	CHAKRADHARPUR	43/7	0.809
82	CHAKRADHARPUR	43/9	0.809
83	CHAKRADHARPUR	43/10	0.809
84	CHAKRADHARPUR	55	0.214

<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
85	CHAKRADHARPUR	56	0.283
86	CHAKRADHARPUR	58	1.578
87	CHAKRADHARPUR	62	3.311
88	CHAKRADHARPUR	64/86	1.602
89	CHAKRADHARPUR	65/53/4	0.461
	Total	Hectare	115.207
<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
1	NATWARPUR	60	1.955
2	NATWARPUR	62	0.656
3	NATWARPUR	64	1.374
4	NATWARPUR	65/1	3.893
5	NATWARPUR	9	0.862
6	NATWARPUR	11	1.501
7	NATWARPUR	12	0.745
8	NATWARPUR	13	2.096
9	NATWARPUR	14	1.801
10	NATWARPUR	15	0.757
11	NATWARPUR	16	0.656
12	NATWARPUR	17	0.652
13	NATWARPUR	18	0.979
14	NATWARPUR	19	3.439
15	NATWARPUR	21	1.724
16	NATWARPUR	22	1.04
17	NATWARPUR	24	1.688
18	NATWARPUR	144	1.21
19	NATWARPUR	167	1.586
20	NATWARPUR	366	2.89
21	NATWARPUR	378	4.387
22	NATWARPUR	388	4.679
23	NATWARPUR	165	1.882
24	NATWARPUR	164/525	0.745
25	NATWARPUR	164/528	1.651
26	NATWARPUR	164/530	0.324
27	NATWARPUR	164/533	1.165
28	NATWARPUR	164/534	0.68
29	NATWARPUR	165/472	1.485
30	NATWARPUR	165/523	1.048
31	NATWARPUR	166/470	0.356
32	NATWARPUR	230/537	1.348
33	NATWARPUR	281/563/1	9
34	NATWARPUR	323/540	0.073

<u>S.I No.</u>	<u>Location</u>	<u>Khasra</u>	<u>Rakba</u>
35	NATWARP UR	193	5.735
36	NATWARP UR	197	1.983
37	NATWARP UR	194/1	8.094
38	NATWARP UR	194/2	6.75
39	NATWARP UR	196	1.263
40	NATWARP UR	6/2	0.478
41	NATWARP UR	52/1	3.889
42	NATWARP UR	52/2	0.607
43	NATWARP UR	54	0.66
44	NATWARP UR	55	0.704
45	NATWARP UR	56	1.951
46	NATWARP UR	57	0.611
47	NATWARP UR	61	0.51
48	NATWARP UR	65/2	1.921
	Total	Hectare	95.483
	Grand Total	Hectare	214.938

Boundary of CA LAND Identified

Gare palma Coal Block 2 Raigarh Chhattisgarh



Google Earth

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उप वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन परिक्षेत्राधिकारी
रायगढ़ परिक्षेत्र

वन मण्डलाधिकारी
रायगढ़, कर्नलपुरा

4000 ft

COORDINATES

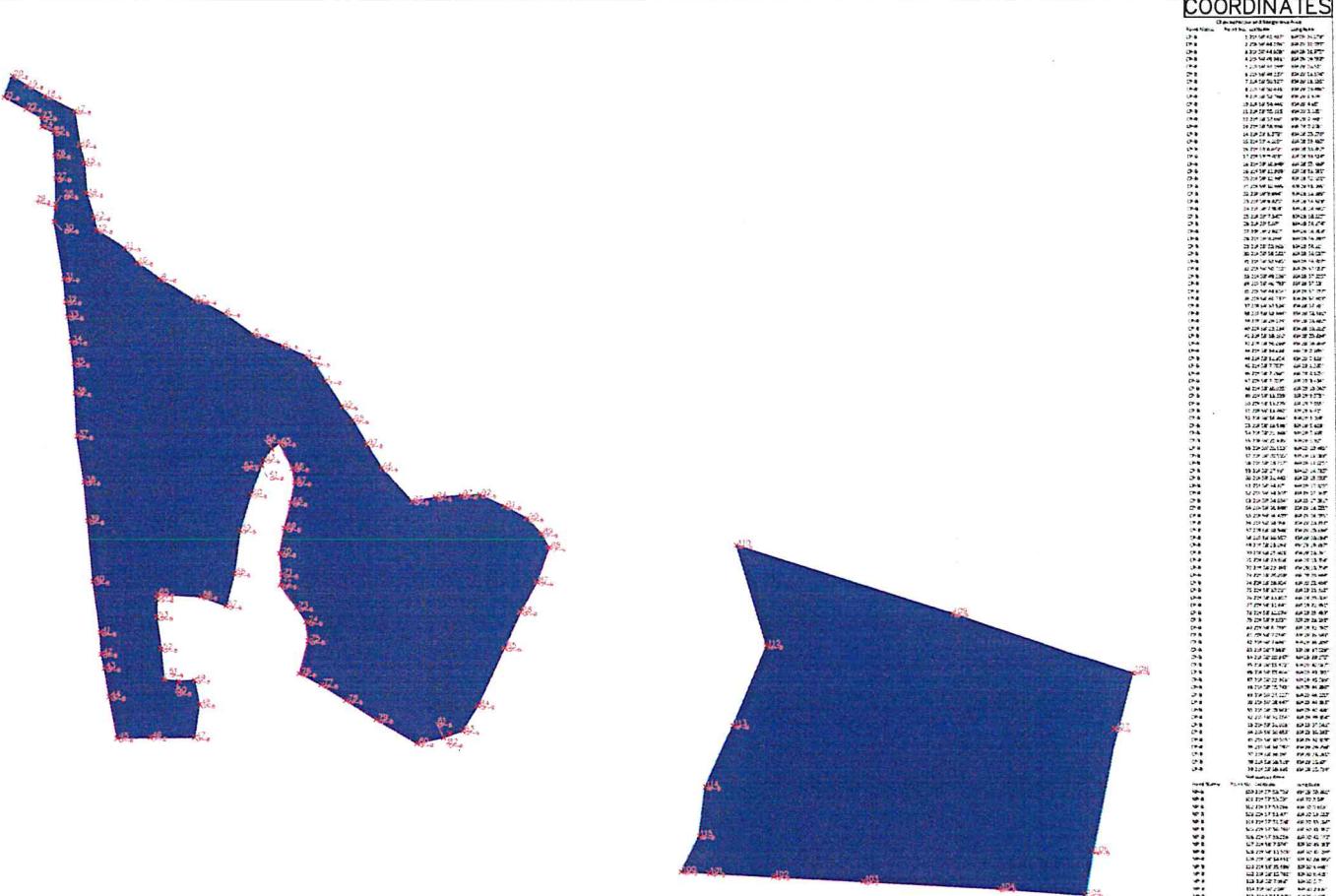
Point Name	Point No.	Latitude	Longitude
Chakradharpur and Bangursiya Area	1	21°58'42.43"'	83°27'10.07"'
CP-B	2	21°58'41.19"'	83°27'13.93"'
CP-B	3	21°58'44.99"'	83°27'21.97"'
CP-B	4	21°58'45.91"'	83°27'31.58"'
CP-B	5	21°58'47.18"'	83°27'31.52"'
CP-B	6	21°58'49.23"'	83°27'31.57"'
CP-B	7	21°58'50.32"'	83°27'31.11"'
CP-B	8	21°58'50.64"'	83°27'10.43"'
CP-B	9	21°58'52.78"'	83°27'6.94"'
CP-B	10	21°58'53.05"'	83°27'2.35"'
CP-B	11	21°58'53.52"'	83°27'2.35"'
CP-B	12	21°58'57.65"'	83°27'0.45"'
CP-B	13	21°58'58.83"'	83°27'0.25"'
CP-B	14	21°58'59.12"'	83°27'59.57"'
CP-B	15	21°58'59.30"'	83°27'59.43"'
CP-B	16	21°59'0.67"'	83°27'58.99"'
CP-B	17	21°59'1.40"'	83°27'58.52"'
CP-B	18	21°59'10.49"'	83°27'55.43"'
CP-B	19	21°59'11.96"'	83°27'53.56"'
CP-B	20	21°59'12.02"'	83°27'53.52"'
CP-B	21	21°59'10.69"'	83°27'51.05"'
CP-B	22	21°59'10.64"'	83°27'51.38"'
CP-B	23	21°59'10.82"'	83°27'54.92"'
CP-B	24	21°59'1.70"'	83°27'54.99"'
CP-B	25	21°59'1.74"'	83°27'56.22"'
CP-B	26	21°59'1.07"'	83°27'56.27"'
CP-B	27	21°59'1.82"'	83°27'56.31"'
CP-B	28	21°59'1.29"'	83°27'56.24"'
CP-B	29	21°59'15.53"'	83°27'56.21"'
CP-B	30	21°59'15.54"'	83°27'56.20"'
CP-B	31	21°58'12.05"'	83°27'55.90"'
CP-B	32	21°58'15.71"'	83°27'53.05"'
CP-B	33	21°58'12.05"'	83°27'53.22"'
CP-B	34	21°58'46.79"'	83°27'57.55"'
CP-B	35	21°58'44.14"'	83°27'57.73"'
CP-B	36	21°58'41.73"'	83°27'57.81"'
CP-B	37	21°58'37.24"'	83°27'57.92"'
CP-B	38	21°58'32.86"'	83°27'58.54"'
CP-B	39	21°58'32.87"'	83°27'58.55"'
CP-B	40	21°58'22.24"'	83°27'58.52"'
CP-B	41	21°58'18.10"'	83°27'58.63"'
CP-B	42	21°58'16.09"'	83°27'58.69"'
CP-B	43	21°58'14.63"'	83°27'58.78"'
CP-B	44	21°58'11.56"'	83°27'58.83"'
CP-B	45	21°58'7.76"'	83°27'51.38"'
CP-B	46	21°58'7.79"'	83°27'51.82"'
CP-B	47	21°58'7.70"'	83°27'51.83"'
CP-B	48	21°58'10.93"'	83°27'51.95"'
CP-B	49	21°58'10.99"'	83°27'51.97"'
CP-B	50	21°58'12.77"'	83°27'51.85"'
CP-B	51	21°58'12.43"'	83°27'51.41"'
CP-B	52	21°58'16.48"'	83°27'51.99"'
CP-B	53	21°58'19.98"'	83°27'51.82"'
CP-B	54	21°58'21.88"'	83°27'51.85"'
CP-B	55	21°58'21.85"'	83°27'51.97"'
CP-B	56	21°58'21.51"'	83°27'51.04"'
CP-B	57	21°58'10.55"'	83°27'51.03"'
CP-B	58	21°58'10.57"'	83°27'51.02"'
CP-B	59	21°58'10.57"'	83°27'51.02"'
CP-B	60	21°58'11.43"'	83°27'51.52"'
CP-B	61	21°58'34.37"'	83°27'11.12"'
CP-B	62	21°58'34.80"'	83°27'11.63"'
CP-B	63	21°58'35.84"'	83°27'11.36"'
CP-B	64	21°58'35.88"'	83°27'12.25"'
CP-B	65	21°58'36.42"'	83°27'11.91"'
CP-B	66	21°58'33.55"'	83°27'20.33"'
CP-B	67	21°58'37.54"'	83°27'20.38"'
CP-B	68	21°58'30.53"'	83°27'20.33"'
CP-B	69	21°58'30.54"'	83°27'20.37"'
CP-B	70	21°58'35.60"'	83°27'18.97"'
CP-B	71	21°58'23.55"'	83°27'21.95"'
CP-B	72	21°58'22.49"'	83°27'21.73"'
CP-B	73	21°58'20.69"'	83°27'20.49"'
CP-B	74	21°58'18.84"'	83°27'21.43"'
CP-B	75	21°58'17.00"'	83°27'21.61"'
CP-B	76	21°58'13.80"'	83°27'20.06"'
CP-B	77	21°58'12.66"'	83°27'20.88"'
CP-B	78	21°58'12.64"'	83°27'20.87"'
CP-B	79	21°58'12.33"'	83°27'20.83"'
CP-B	80	21°58'12.79"'	83°27'21.78"'
CP-B	81	21°58'7.75"'	83°27'51.54"'
CP-B	82	21°58'7.64"'	83°27'51.56"'
CP-B	83	21°58'7.88"'	83°27'51.59"'
CP-B	84	21°58'10.37"'	83°27'51.76"'
CP-B	85	21°58'15.97"'	83°27'20.06"'
CP-B	86	21°58'19.45"'	83°27'11.81"'
CP-B	87	21°58'19.45"'	83°27'11.81"'
CP-B	88	21°58'12.41"'	83°27'16.46"'
CP-B	89	21°58'12.17"'	83°27'16.12"'
CP-B	90	21°58'25.64"'	83°27'16.63"'
CP-B	91	21°58'25.81"'	83°27'16.06"'
CP-B	92	21°58'31.05"'	83°27'19.94"'
CP-B	93	21°58'31.01"'	83°27'19.91"'
CP-B	94	21°58'30.83"'	83°27'25.52"'
CP-B	95	21°58'30.15"'	83°27'18.81"'
CP-B	96	21°58'33.79"'	83°27'25.78"'
CP-B	97	21°58'25.03"'	83°27'21.26"'
CP-B	98	21°58'25.15"'	83°27'21.68"'
CP-B	99	21°58'39.03"'	83°27'21.74"'
Naturevaru Area			
Point Name	Point No.	Latitude	Longitude
NP-B	100	21°57'53.72"'	83°29'59.96"'
NP-B	101	21°57'53.53"'	83°30'2.89"'
NP-B	102	21°57'53.06"'	83°29'51.63"'
NP-B	103	21°57'52.47"'	83°30'19.02"'
NP-B	104	21°57'51.53"'	83°30'11.06"'
NP-B	105	21°57'53.00"'	83°30'4.61"'
NP-B	106	21°57'53.00"'	83°30'4.72"'
NP-B	107	21°58'0.01"'	83°30'4.61"'
NP-B	108	21°58'12.03"'	83°30'4.76"'
NP-B	109	21°58'16.61"'	83°30'28.99"'
NP-B	110	21°58'25.66"'	83°30'3.46"'
NP-B	112	21°58'15.78"'	83°30'9.41"'
NP-B	113	21°58'7.99"'	83°30'5.77"'
NP-B	114	21°58'2.04"'	83°30'1.63"'
NP-B	115	21°57'57.22"'	83°30'1.88"'



ANNEXURES 1

MAP of Boundary of CA LAND SURVEYED

Map of the Boundary of CA LAND Surveyed Gare palma Coal Block 2 Raigarh Chhattisgarh



LEGEND

IDENTIFIED CA LAND BOUNDARY : XXXXXXXXXX
CP-B : CHANDRAPUR AREA BOUNDARY
NP-B : NATWARPUR AREA BOUNDARY
AREA : 214.938 Hectare



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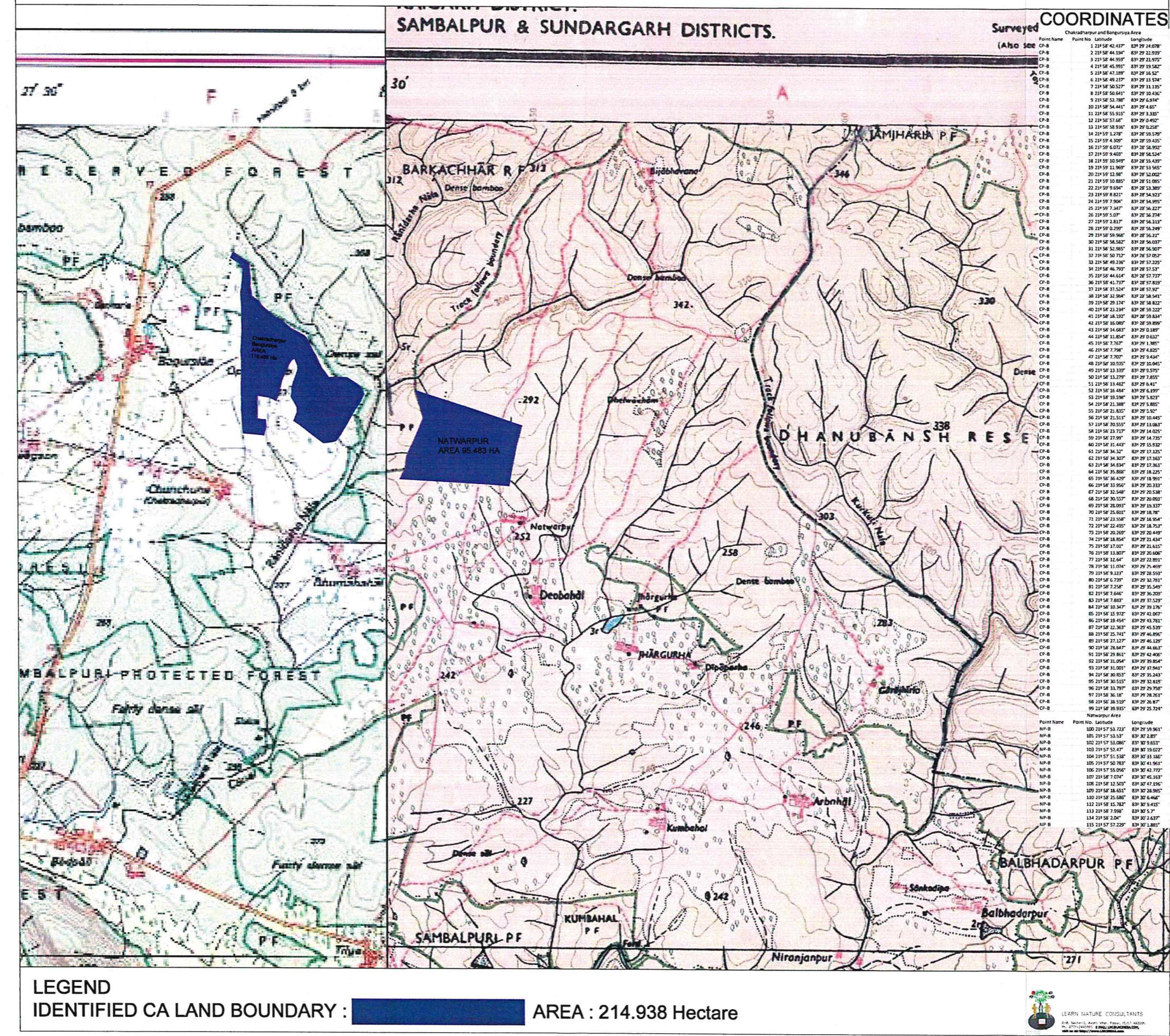

उप वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन रा

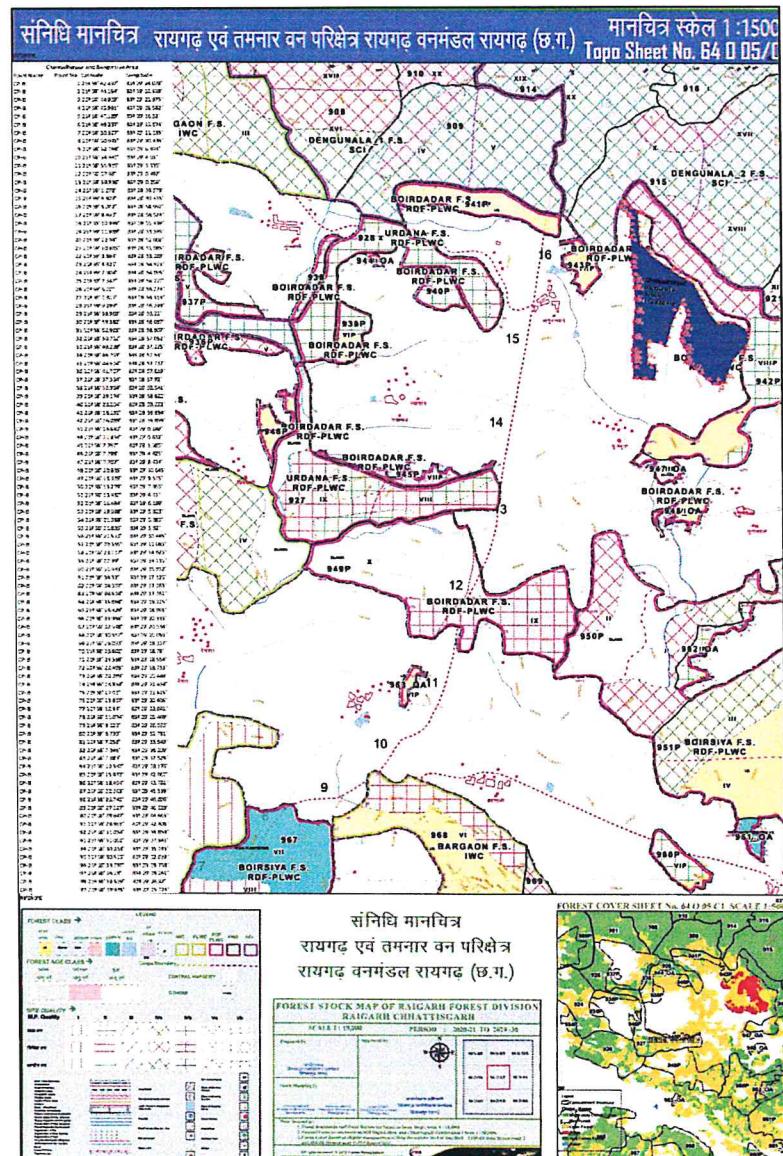
ANNEXURES 2

GEOREFERENCED MAP

**Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed
on Toposheet (Scale 1:50000)**
Gare palma Coal Block 2 Raigarh Chhattisgarh



**Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed
on Toposheet (Scale 1:15000)**
Gare palma Coal Block 2 Raigarh Chhattisgarh

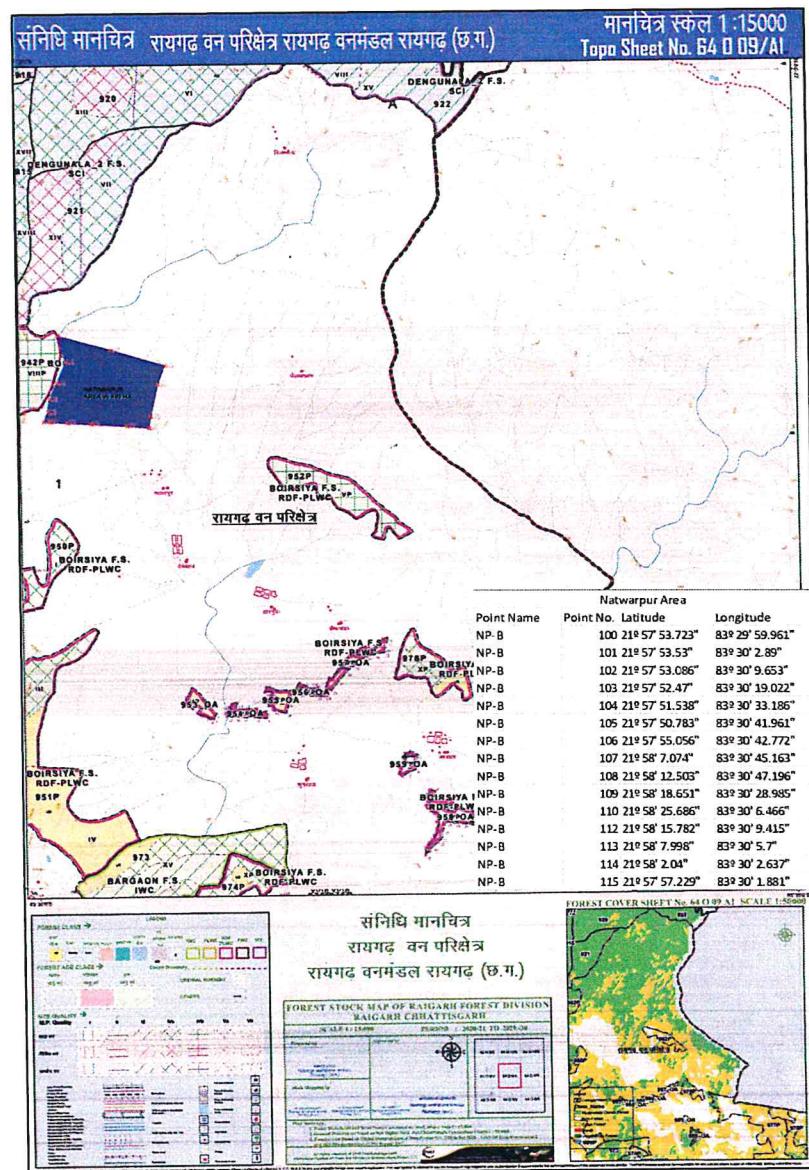


४५ वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन मण्डलाधिकारी
रायगढ़, कर्मणहल

बन परिक्षेत्राधिकारी
रायगढ़ परिक्षेत्र

**Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed
on Toposheet (Scale 1:15000)**
Gare palma Coal Block 2 Raigarh Chhattisgarh



LEGEND

IDENTIFIED CA LAND BOUNDARY :

AREA : 95.483 Hectare



उप वन मण्डलाधिकारी
रायगढ़ (छ.ग.)

वन परिक्षेत्राधिकारी
रायगढ़ परिक्षेत्र

वन मण्डलाधिकारी
रायगढ़ वनमण्डल

Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed on Toposheet
(Scale 1:15000)
Gare palma Coal Block 2 Raigarh Chhattisgarh

Chakradharpur and Bangursiya Area			CP-B	50 21° 58' 13.279"	83° 29' 7.855"	
Point Name	Point No.	Latitude	Longitude	CP-B	51 21° 58' 13.482"	83° 29' 6.41"
CP-B	1	21° 58' 42.437"	83° 29' 24.078"	CP-B	52 21° 58' 16.484"	83° 29' 6.199"
CP-B	2	21° 58' 44.194"	83° 29' 22.939"	CP-B	53 21° 58' 19.598"	83° 29' 5.823"
CP-B	3	21° 58' 44.959"	83° 29' 21.975"	CP-B	54 21° 58' 21.388"	83° 29' 5.885"
CP-B	4	21° 58' 45.991"	83° 29' 19.582"	CP-B	55 21° 58' 21.835"	83° 29' 5.92"
CP-B	5	21° 58' 47.189"	83° 29' 16.52"	CP-B	56 21° 58' 21.513"	83° 29' 10.445"
CP-B	6	21° 58' 49.237"	83° 29' 13.574"	CP-B	57 21° 58' 20.555"	83° 29' 13.083"
CP-B	7	21° 58' 50.527"	83° 29' 11.135"	CP-B	58 21° 58' 23.717"	83° 29' 14.025"
CP-B	8	21° 58' 50.641"	83° 29' 10.436"	CP-B	59 21° 58' 27.99"	83° 29' 14.735"
CP-B	9	21° 58' 52.788"	83° 29' 6.974"	CP-B	60 21° 58' 31.443"	83° 29' 15.932"
CP-B	10	21° 58' 54.441"	83° 29' 4.65"	CP-B	61 21° 58' 34.32"	83° 29' 17.125"
CP-B	11	21° 58' 55.915"	83° 29' 3.335"	CP-B	62 21° 58' 34.307"	83° 29' 17.163"
CP-B	12	21° 58' 57.68"	83° 29' 0.492"	CP-B	63 21° 58' 34.834"	83° 29' 17.361"
CP-B	13	21° 58' 58.936"	83° 29' 0.258"	CP-B	64 21° 58' 35.888"	83° 29' 18.225"
CP-B	14	21° 59' 1.278"	83° 28' 59.579"	CP-B	65 21° 58' 36.429"	83° 29' 18.991"
CP-B	15	21° 59' 4.309"	83° 28' 59.435"	CP-B	66 21° 58' 33.956"	83° 29' 20.333"
CP-B	16	21° 59' 6.072"	83° 28' 58.992"	CP-B	67 21° 58' 32.548"	83° 29' 20.538"
CP-B	17	21° 59' 9.403"	83° 28' 58.524"	CP-B	68 21° 58' 30.557"	83° 29' 20.093"
CP-B	18	21° 59' 10.949"	83° 28' 55.439"	CP-B	69 21° 58' 28.093"	83° 29' 19.337"
CP-B	19	21° 59' 11.969"	83° 28' 53.565"	CP-B	70 21° 58' 25.601"	83° 29' 18.78"
CP-B	20	21° 59' 12.98"	83° 28' 52.002"	CP-B	71 21° 58' 23.558"	83° 29' 18.954"
CP-B	21	21° 59' 10.885"	83° 28' 51.085"	CP-B	72 21° 58' 22.495"	83° 29' 18.753"
CP-B	22	21° 59' 9.694"	83° 28' 53.389"	CP-B	73 21° 58' 20.269"	83° 29' 20.449"
CP-B	23	21° 59' 8.821"	83° 28' 54.923"	CP-B	74 21° 58' 18.854"	83° 29' 21.434"
CP-B	24	21° 59' 7.904"	83° 28' 54.995"	CP-B	75 21° 58' 17.01"	83° 29' 21.615"
CP-B	25	21° 59' 7.347"	83° 28' 56.227"	CP-B	76 21° 58' 13.807"	83° 29' 20.606"
CP-B	26	21° 59' 5.07"	83° 28' 56.274"	CP-B	77 21° 58' 12.64"	83° 29' 22.891"
CP-B	27	21° 59' 2.817"	83° 28' 56.313"	CP-B	78 21° 58' 11.074"	83° 29' 25.469"
CP-B	28	21° 59' 0.299"	83° 28' 56.249"	CP-B	79 21° 58' 9.123"	83° 29' 28.593"
CP-B	29	21° 58' 59.968"	83° 28' 56.21"	CP-B	80 21° 58' 6.739"	83° 29' 32.781"
CP-B	30	21° 58' 58.582"	83° 28' 56.037"	CP-B	81 21° 58' 7.258"	83° 29' 35.549"
CP-B	31	21° 58' 52.985"	83° 28' 56.907"	CP-B	82 21° 58' 7.646"	83° 29' 36.209"
CP-B	32	21° 58' 50.712"	83° 28' 57.052"	CP-B	83 21° 58' 7.883"	83° 29' 37.529"
CP-B	33	21° 58' 49.236"	83° 28' 57.225"	CP-B	84 21° 58' 10.347"	83° 29' 39.176"
CP-B	34	21° 58' 46.793"	83° 28' 57.53"	CP-B	85 21° 58' 15.972"	83° 29' 42.067"
CP-B	35	21° 58' 44.614"	83° 28' 57.737"	CP-B	86 21° 58' 19.454"	83° 29' 43.781"
CP-B	36	21° 58' 41.737"	83° 28' 57.819"	CP-B	87 21° 58' 22.363"	83° 29' 45.539"
CP-B	37	21° 58' 37.524"	83° 28' 57.92"	CP-B	88 21° 58' 25.741"	83° 29' 46.896"
CP-B	38	21° 58' 32.984"	83° 28' 58.541"	CP-B	89 21° 58' 27.127"	83° 29' 46.129"
CP-B	39	21° 58' 29.174"	83° 28' 58.822"	CP-B	90 21° 58' 28.647"	83° 29' 44.663"
CP-B	40	21° 58' 23.234"	83° 28' 59.222"	CP-B	91 21° 58' 29.861"	83° 29' 42.406"
CP-B	41	21° 58' 18.192"	83° 28' 59.834"	CP-B	92 21° 58' 31.054"	83° 29' 39.854"
CP-B	42	21° 58' 16.089"	83° 28' 59.899"	CP-B	93 21° 58' 31.001"	83° 29' 37.941"
CP-B	43	21° 58' 14.683"	83° 29' 0.189"	CP-B	94 21° 58' 30.853"	83° 29' 35.243"
CP-B	44	21° 58' 11.854"	83° 29' 0.632"	CP-B	95 21° 58' 30.515"	83° 29' 32.819"
CP-B	45	21° 58' 7.767"	83° 29' 1.385"	CP-B	96 21° 58' 33.797"	83° 29' 29.758"
CP-B	46	21° 58' 7.798"	83° 29' 4.825"	CP-B	97 21° 58' 36.18"	83° 29' 28.261"
CP-B	47	21° 58' 7.707"	83° 29' 9.434"	CP-B	98 21° 58' 38.519"	83° 29' 26.87"
CP-B	48	21° 58' 10.935"	83° 29' 10.045"	CP-B	99 21° 58' 39.935"	83° 29' 25.724"
CP-B	49	21° 58' 13.339"	83° 29' 9.575"			

LATITUDE LONGITUDE CART



LEARN NATURE CONSULTANTS

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 Ph 0771-2443663, E-mail: LNC@LNCINDIA.COM
 Visit us at <http://www.LNCINDIA.com>

Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed on Toposheet
 (Scale 1:15000)
 Gare palma Coal Block 2 Raigarh Chhattisgarh

Natwarpur Area

Point Name	Point No.	Latitude	Longitude
NP-B	100	21° 57' 53.723"	83° 29' 59.961"
NP-B	101	21° 57' 53.53"	83° 30' 2.89"
NP-B	102	21° 57' 53.086"	83° 30' 9.653"
NP-B	103	21° 57' 52.47"	83° 30' 19.022"
NP-B	104	21° 57' 51.538"	83° 30' 33.186"
NP-B	105	21° 57' 50.783"	83° 30' 41.961"
NP-B	106	21° 57' 55.056"	83° 30' 42.772"
NP-B	107	21° 58' 7.074"	83° 30' 45.163"
NP-B	108	21° 58' 12.503"	83° 30' 47.196"
NP-B	109	21° 58' 18.651"	83° 30' 28.985"
NP-B	110	21° 58' 25.686"	83° 30' 6.466"
NP-B	112	21° 58' 15.782"	83° 30' 9.415"
NP-B	113	21° 58' 7.998"	83° 30' 5.7"
NP-B	114	21° 58' 2.04"	83° 30' 2.637"
NP-B	115	21° 57' 57.229"	83° 30' 1.881"

उन दं परिषेन्टाधिकारी
 रायगढ़ (छ.ग.)

वन परिषेन्टाधिकारी
 रायगढ़ परिषेन्ट

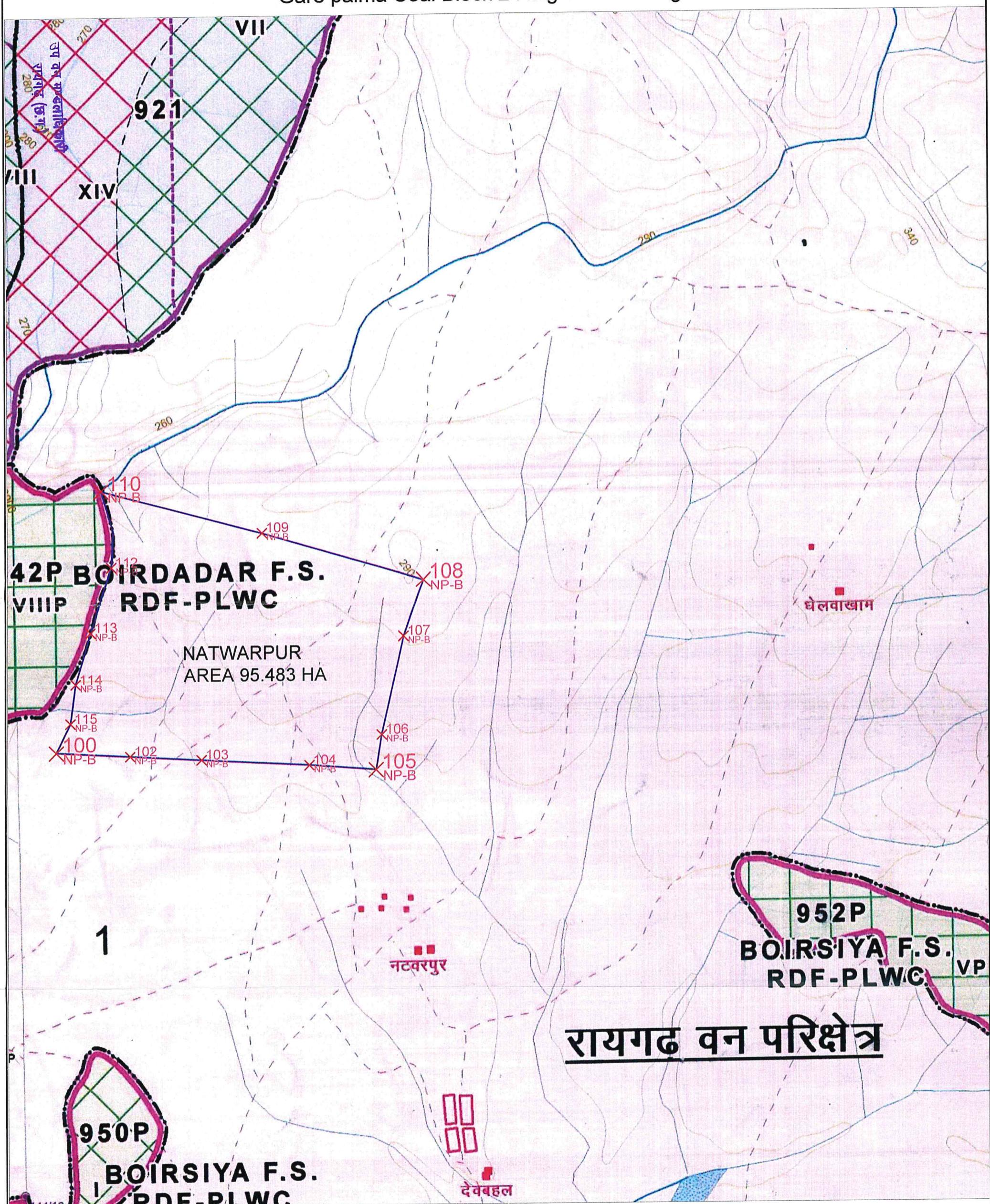
वन प्रणलाधिकारी
 रायगढ़, कर्नाटक



Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed on Toposheet

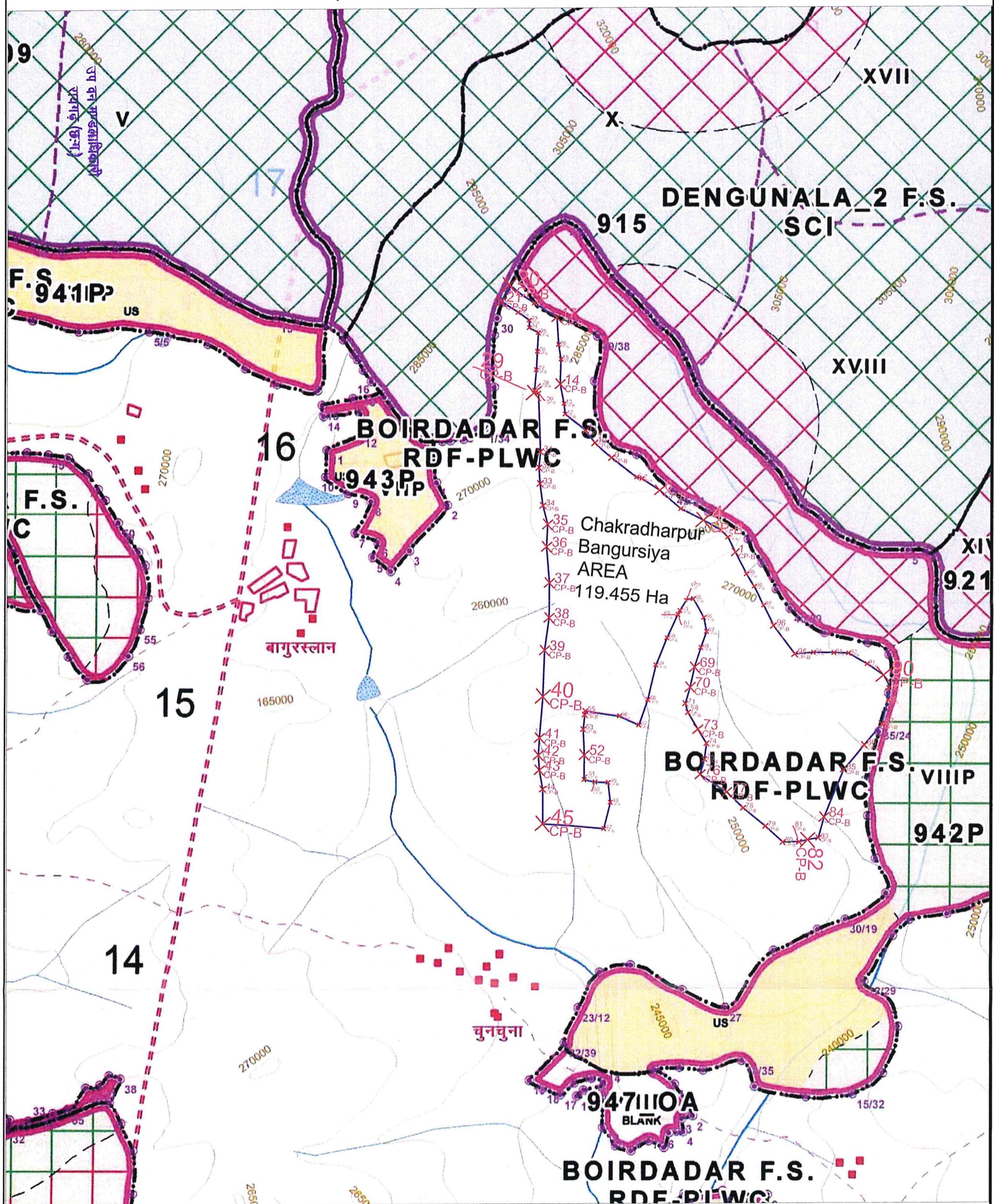
(Scale 1:15000)

Gare palma Coal Block 2 Raigarh Chhattisgarh



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visit us at: <http://www.LNCINDIA.com>

Geo-Referenced Map of the Boundary of CA LAND Identified Superimposed on Toposheet
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वन परिषेत्राधिकारी
[Signature]

वन वन्यजलाधिकारी
 रायगढ़ (छग)

वन वन्यजलाधिकारी
 रायगढ़, बन्दुपड़हल