SEEPAT ROAD P.O.: SECL BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे South Eastern Coalfields Limited (कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.) CIN U10102CT1985GO1003161 Website : <u>www.seel-cil.in</u> कार्यालय: महाप्रबंधक, गेवरा क्षेत्र OFFICE OF THE GENERAL MANAGER GEVRA AREA



STD :07815 275430(O) : 7815 275032(R) Fax :07815 275434 email :gevraenvt@gmail.com

पो0आ0:गेवराप्रोजेक्ट P.O. : GEVRA PROJECT Distt.: Korba (C.G.) Pin: 495452

जिला: कोरबा(छत्तीसगढ़) पिन:495452

दिनांक 31 /03/2023

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2023 / 519 To The Divisional Forest Officer Katghora Division Katghora Korba

SUB: Submission of 44 points checklist against diversion of 94.293 Ha. Revenue Forest Land of SECL Gevra OCP, Dist Korba CG Proposal No. FP/CG/MIN/41389/2019

REF: Online EDS dt:12.01.2023

Dear Madam

Please refer to our prevoius letter vide no. 249 dt: 20.10.2022, wherein the data pertaining SECL Gevra OCP has been submitted as per the 44 points checklist.

Now we are hereby submitting the CA scheme of Gariyaband 132 Ha. & Pali 58 Ha. duly certified by the respective DFOs.

Submitted for further necessary action please.

Thanking You

General Ma SECL Gevra Area

Yours Sincerely

Copy to

- 1. Chief Conservator of Forest Bilaspur CG
- 2. Additional Principal Chief Conservator of Forest (LM), Raipur CG

STRICTLY RESTRICTED FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

GEO-REFERENCED BOUNDARY MAP

(IN SHAPE FILE) COMPENSATORT AFFORESTATION (CA) FOREST LAND (AREA-38.00 HA) GEVRA PROJECT GEVRA AREA, SECL



JANUARY-2023



	INDEX	
Chapter	TOPIC	Page
1.0	Introduction	1
2.0	Background	1-3
3.0	Location	3
4.0	Scope of Services	3
5.0	Methodology	3-4
6.0	Survey Instrument	4-5
7.0	Details of Field Activity	5-8
8.0	Computation	8
9.0	Documents Submitted	9
Table	TABLES	
I	Geo-Referenced Boundary Map (in shape file) of Compensatory Afforestation (CA) Forest Land (Area-38.00 Ha) for Gevra OCP,Gevra Area,SECL	8-9
Annexure	ANNEXURES	
I	letter G-FORS/16/0003/2022-Forest, SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101)	
Drawing	DRAWINGS	
1	CMPDI/RI5/BSP/GEOM/2022/DGPS/90	
CD	CD	
1	Soft copy of shape files and KML files in CD	



GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF COMPENSATORY AFFORESTATION (CA) FOREST LAND (AREA-54.00 HA) AT GARIYABAND DIVISION FOR GEVRA OCP, GEVRA AREA, SECL

1.0 Introduction

A proposal for DGPS survey of 38.000hectarecompensatory afforestation (CA) forest land at Katghora division has been received in CMPDIL through e-office along with details of forest land allotted by forest department duly forwarded through General Manager, Gevra Area, South Eastern Coalfields Limited (SECL) vide letter G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101).As per annual action plan for the year 2022-2023(CMPDI/RI-5/EXPL/2022-23/03 Dated 01-04-2022) DGPS survey of forest land is to be taken up by CMPDIL.

As per work order No.G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101).the CA land (Area-38.00Ha) for 94.293 Ha revenue forest land proposal of Gevra OCP has been identified at Gariyaband Forest Division.

Colliery authorities identified the patch on the ground with the help of forest officials.DGPS survey has been carried out at selected ground locations identified by forestpersonnelas per requirement.

DGPS report containing geo-referenced boundary map and shape files in projected and geographical coordinate system is submitted herewith. A geo-referenced boundary map in 1:10000 scale and corresponding KML files are also enclosed herewith in order to facilitate SECL to apply through online application portal PARIVESH.

Soft copies of the map and shape files are given in CD for further necessary action by SECL. Relevant documents are given as annexures in this report.

The following table shows the land schedule of the proposed Compensatory Afforestation (CA) Forest Land.

Land Schedule of Compensatory Afforestation(CA) Forest Land								
SL. NO. Division Range Comp Area(HA)								
1	Gariyaband	Chhura	COM-232	38.00				
Total Area 38.000								

2.0 Background

Electricity is a very important commodity that cannot be dispensed for the modern lifestyle of people and communities worldwide. India being a growing economy is not an exception. Electricity produced through thermal power stations meets about seventy percentage of total electricity requirement of our country. Coal plays a vital role in these thermal power stations. With growing



concern for increasing power production, the thrust is on increasing production on coal producing companies, such as SECL.

Coal demand for other industrial and domestic consumption has also increased over the years. Coal producing companies, in general, are always required to mine more coal through open cast and underground coal mines in order to meet the coal demand by thermal power stations.

Coal producing companies are left with only two options. Either they should open new coal mines or increase the capacity of existing mines. While it is not very easy to open up new coal mines, the only option left is to expand the existing mines in terms of its capacity or in terms of physical extent of the existing mine.

In most of the mining lease hold areas it is observed that the coal bearing area is falling in forest areas that has been left out for want of forestry clearance. These forest lands are categorized into the following three types:

- Reserved Forest
- Protected Forest
- Revenue Forest

In order to carry out mining activities in these forest lands, forest clearance is required to obtain from the Ministry of Environment, Forest and Climate Change(MOEFCC).

To check irrational exploitation of forest and to maintain the ecological balance, Forest Conservation Act (FRA), 1980 has been enacted. Under this act, no forest land can be used for non-forestry purpose without prior approval from the ministry.

For getting forest clearance from MOEFCC the coal producing companies are required to apply through recently updated web portal called "Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-Window Hub (PARIVESH)" which is a web based, role-based workflow application that has been developed for online submission and monitoring of proposals submitted by the proponents for seeking environment, forest, wildlife, and CRZ clearances from central state and district level authorities.

It automates the entire tracking of proposals which includes online submission of a new proposal, editing/updating the details of proposals and displays status of the proposals at each stage of the workflow.

The procedure for forest clearance envisaged under the act mandates a two-stage approval process consisting of two stages:

Stage I

Upon prima facie review the proposal is either accepted or rejected. If approved, the project authority is required to deposit an amount for compensation of the opportunity cost of the forest (NPV, compensatory afforestation, additional expenses towards mitigating probable environmental damage etc.)

Job No: 503308Page 2 of 9



> Stage II

Following the deposit of above-mentioned costs, the land is handed over to the project authorities provided they have obtained all other requisite clearances.

Reserve forest boundaries are generally marked on the ground with large forest pillars while the boundaries of protected forests are marked on the ground with trenches, fencing and other markings.

As per the circular of MOEFCC, one of the pre-requisites for getting forestry clearance is a georeferenced boundary map in shape file format of the desired forest land.

3.0 Location

The salient points of CA forest land identified for this project are located at chhura, District-Gariyaband, Chhattisgarh.NearestGariyaband.

4.0 Scope of Services

The scope of services of CMPDIL to provide Geo-referenced boundarymap (in shape files and pdf format), converted geographical coordinates of forest boundary after making DGPS observation at salient points and KML files etc.

5.0 Methodology

Static DGPS (Differential Global Positioning System) survey is appropriate for determining geographical co-ordinates of forest boundary.

The Global Positioning System (GPS) is a satellite-based location, timing and navigation system in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. Presently, 30 orbiting satellites of GPS constellation of USA and 24 GLONASS (*Globalnayanavigatsionnayasputnikovayasistema* or Global Navigation Satellite System) satellites of Russia are operational for the purpose of GPS survey.

In addition to these primary GPS constellation, European space agency and Chinese have their own constellation such as Galileo and BeiDou respectively.

India's prestigious GAGAN (GPS Aided Geo Augmented Navigation (GAGAN) system) navigation system is also presently operational providing vital positional information to civil aviation and other industries.

The Global Positioning System is a system of communication made up of three independent aspects such as:

GPS satellites orbiting the Earth;

Job No: 503308Page 3 of 9



- Control and monitoring stations on Earth;
- GPS receivers owned by users.

GPS satellites transmit the satellites number, its position in space, and the exact time. These informations are sent through the transmitted signals at regular intervals by all the satellites are all times.

These signals are picked up by various types of GPS receivers on ground. With signals from three or more satellites, a GPS receiver can triangulate its location on the ground (i.e., longitude and latitude) from the known position of the satellites. With four or more satellites, a GPS receiver can determine a 3D position (i.e., latitude, longitude, and ellipsoidal height).Differential Global Positioning System (DGPS) refers to using two or more GPS receivers to achieve greater positional accuracy. There are three basic methods of doing DGPS survey.

- > Static
- Rapid-Static
- Real-time Kinematic (RTK).

For doing DGPS survey of forest land, post-processed static survey is found to be most suitable where one GPS receiver is used as base station and other GPS receivers are used as rover stations. Base receiver is stationed at a point of known co-ordinates for longer duration and rover stations are kept at unknown stations for comparatively shorter duration. DGPS observation is done in each rover stations for compensatory afforestation.

Data from base and rovers are downloaded and then post-processed in GPS data processing software, Leicainfinity to achieve sub-centimeter level accuracies.

ArcGIS 10.2 version software is used for preparation of shape files, KML file and geo-referenced map of the forest land in WGS-84 co-ordinates.

6.0 Survey Instrument

For providing geographical (spherical) co-ordinates of the stations along the boundary, Differential Global Positioning System (DGPS) consisting of one base receiver and a rover receiver were used. CMPDIL has the latest hardware and software of Leica make DGPS instrument which has dual-frequency GPS signal receivers that provide accurate results after post processing in relevant software. Brief specifications of DGPS are provided in the table below.



Α	DGPS Instrument:					
	Make	Leica				
	Model	GS25 & GS16				
	Signal	GPS: L1, L2&L5 carrier, CA, L1P, L2P, L2C				
		GLONASS: L1, L2&L5 carrier, L1CA, L2CA, L1P, L2P				
		GALILEO: E2-L1-E1, E5, E6				
	Channels	72				
	Accuracy:	sub-centimeter				
	Post Processed Static DGPS	3mm +0.5ppm horizontal, 5mm + 0.5ppm vertical				
	Real Time RTK	10mm + 1 ppm horizontal, 15mm + 1 ppm vertical				
	Power:					
	Internal Battery	2 Li-Ion, 3900mAh, 7.2V				
	Communication:					
	Bluetooth	Bluetooth standard 1.2				
	USB	1.1 Version				
В	DGPS Software	Inbuilt Leica software for data recording				
		Leicainfinity for data processing				

7.0 Details of Field Activity

DGPS survey has been carried out in ground locations identified by forest authorities in the presence of Gevra colliery authority. The following table Showing Details of DGPS Survey Point (WGS84).

POINT_ID	INSTRUMENT	LATITUDE(WGS84)	LONGITUDE(WGS84)
COMP-5/0	DGPS	20° 59' 4.590" N	82° 4' 18.600" E
COMP-5/1	DGPS	20° 59' 4.767" N	82° 4' 18.673" E
COMP-161/1	DGPS	20° 54' 11.925" N	82° 9' 34.198" E
COMP-161/2	DGPS	20° 54' 14.178" N	82° 9' 25.998" E
COMP-160/1	DGPS	20° 54' 17.188" N	82° 9' 15.245" E
COMP-160/2	DGPS	20° 54' 22.751" N	82° 8' 55.928" E
COMP-160/3	DGPS	20° 54' 36.413" N	82° 9' 5.846" E
COMP-161/3	DGPS	20° 54' 32.253" N	82° 9' 37.466" E
COMP-160/4	DGPS	20° 54' 11.756" N	82° 9' 34.117" E
COMP160/5	DGPS	20° 54' 18.211" N	82° 9' 11.925" E
COMP161/5	DGPS	20° 54' 19.334" N	82° 9' 7.897" E
COMP161/6	DGPS	20° 54' 20.496" N	82° 9' 7.666" E
COMP161/7	DGPS	20° 54' 20.682" N	82° 9' 5.876" E
COMP161/8	DGPS	20° 54' 20.017" N	82° 9' 5.460" E
COMP161/9	DGPS	20° 54' 21.436" N	82° 9' 0.192" E
COMP161/10	DGPS	20° 54' 24.048" N	82° 8' 56.827" E
COMP161/11	DGPS	20° 54' 25.146" N	82° 8' 57.939" E

Job No: 503308Page 5 of 9



POINT_ID	INSTRUMENT	LATITUDE(WGS84)	LONGITUDE(WGS84)
COMP161/12A	DGPS	20° 54' 25.238" N	82° 8' 59.211" E
COMP161/13	DGPS	20° 54' 25.238" N	82° 8' 59.211" E
COMP161/14	DGPS	20° 54' 31.236" N	82° 9' 2.013" E
COMP161/15	DGPS	20° 54' 32.886" N	82° 9' 3.310" E
COMP161/16	DGPS	20° 54' 39.708" N	82° 9' 10.530" E
COMP161/17	DGPS	20° 54' 32.359" N	82° 9' 14.908" E
COMP-160/6	DGPS	20° 54' 23.052" N	82° 9' 18.662" E
COMP-160/7	DGPS	20° 54' 22.374" N	82° 9' 18.139" E
COMP-160/8	DGPS	20° 54' 22.614" N	82° 9' 17.407" E
COMP-160/9	DGPS	20° 54' 18.843" N	82° 9' 15.765" E
COMP-160/10	DGPS	20° 54' 18.638" N	82° 9' 15.449" E
COMP-160/11	DGPS	20° 54' 18.614" N	82° 9' 15.217" E
COMP-232/2 (2)	DGPS	20° 47' 8.409" N	82° 11' 40.715" E
COMP-232/2	DGPS	20° 47' 8.291" N	82° 12' 7.217" E
COMP-232/3	DGPS	20° 47' 21.258" N	82° 12' 18.006" E
COMP-232/4	DGPS	20° 47' 22.843" N	82° 12' 20.237" E
COMP-232/5	DGPS	20° 47' 24.003" N	82° 12' 20.031" E
COMP-232/6	DGPS	20° 47' 25.247" N	82° 12' 17.680" E
COMP-232/7	DGPS	20° 47' 15.819" N	82° 12' 10.124" E
COMP-232/8	DGPS	20° 47' 15.029" N	82° 11' 58.708" E
COMP-232/9	DGPS	20° 47' 12.570" N	82° 11' 59.043" E
GPS1	DGPS	20° 54' 25.514" N	82° 9' 34.720" E
GPS2	DGPS	20° 54' 23.099" N	82° 9' 34.149" E
GPS3	DGPS	20° 54' 22.569" N	82° 9' 35.874" E
GPS4	DGPS	20° 54' 32.478" N	82° 9' 46.245" E
GPS5	DGPS	20° 54' 27.306" N	82° 9' 49.140" E
GPS6	DGPS	20° 54' 24.819" N	82° 9' 45.968" E
GPS7	DGPS	20° 54' 23.782" N	82° 9' 44.482" E
GPS8	DGPS	20° 54' 23.764" N	82° 9' 44.440" E
GPS9	DGPS	20° 54' 20.938" N	82° 9' 43.413" E
GPS10	DGPS	20° 54' 19.819" N	82° 9' 40.200" E
GPS11	DGPS	20° 54' 16.423" N	82° 9' 40.497" E
GPS12	DGPS	20° 54' 15.493" N	82° 9' 35.603" E
GPS13	DGPS	20° 54' 13.718" N	82° 9' 40.360" E
GPS14	DGPS	20° 54' 13.509" N	82° 9' 35.836" E
GPS15	DGPS	20° 54' 12.788" N	82° 9' 35.701" E
GPS16	DGPS	20° 54' 12.588" N	82° 9' 34.546" E
Comp_5_1	DGPS	20° 59' 2.251" N	82° 4' 22.559" E
Comp_5_2	DGPS	20° 59' 0.401" N	82° 4' 25.740" E
Comp_5_3	DGPS	20° 58' 56.197" N	82° 4' 34.008" E
Comp_5_4	DGPS	20° 59' 0.150" N	82° 4' 44.734" E
Comp_5_5	DGPS	20° 59' 1.507" N	82° 4' 56.450" E

Job No: 503308Page 6 of 9



POINT_ID	INSTRUMENT	LATITUDE(WGS84)	LONGITUDE(WGS84)
Comp_5_6	DGPS	20° 58' 58.278" N	82° 4' 58.791" E
Comp_5_7	DGPS	20° 59' 1.681" N	82° 5' 5.499" E
Comp_5_8	DGPS	20° 58' 57.705" N	82° 5' 12.824" E
Comp_5_9	DGPS	20° 58' 59.135" N	82° 5' 11.385" E
Comp_5_10	DGPS	20° 59' 4.588" N	82° 5' 12.861" E
Comp_5_11	DGPS	20° 59' 16.593" N	82° 5' 6.343" E
Comp_5_12	DGPS	20° 59' 18.581" N	82° 5' 5.575" E
Comp_5_13	DGPS	20° 59' 10.103" N	82° 4' 44.914" E
Comp_5_14	DGPS	20° 59' 4.744" N	82° 4' 18.581" E
hgps_1	DGPS	20° 54' 18.715" N	82° 9' 22.345" E
hgps_2	DGPS	20° 54' 20.635" N	82° 9' 23.322" E
hgps_3	DGPS	20° 54' 20.899" N	82° 9' 25.905" E
hgps_4	DGPS	20° 54' 23.274" N	82° 9' 26.204" E
hgps_5	DGPS	20° 54' 11.992" N	82° 9' 34.149" E
hgps_6	DGPS	20° 54' 14.207" N	82° 9' 25.938" E
hgps_7	DGPS	20° 54' 17.201" N	82° 9' 15.286" E
hgps_8	DGPS	20° 54' 36.483" N	82° 9' 5.791" E
hgps_9	DGPS	20° 54' 32.343" N	82° 9' 37.390" E
hgps_10	DGPS	20° 54' 13.127" N	82° 9' 29.957" E
hgps_11	DGPS	20° 54' 14.176" N	82° 9' 26.019" E
hgps_12	DGPS	20° 54' 22.815" N	82° 8' 55.914" E
hgps_13	DGPS	20° 54' 12.540" N	82° 9' 34.612" E
hgps_14	DGPS	20° 54' 12.709" N	82° 9' 35.836" E
hgps_15	DGPS	20° 54' 13.331" N	82° 9' 35.882" E
hgps_16	DGPS	20° 54' 13.569" N	82° 9' 40.489" E
hgps_17	DGPS	20° 54' 25.412" N	82° 9' 34.718" E
hgps_18	DGPS	20° 54' 23.042" N	82° 9' 34.158" E
hgps_19	DGPS	20° 54' 22.487" N	82° 9' 35.855" E
hgps_20	DGPS	20° 54' 32.439" N	82° 9' 46.319" E
hgps_21	DGPS	20° 54' 27.245" N	82° 9' 49.085" E
hgps_22	DGPS	20° 54' 24.661" N	82° 9' 45.944" E
hgps_23	DGPS	20° 54' 23.828" N	82° 9' 44.441" E
hgps_24	DGPS	20° 54' 20.755" N	82° 9' 43.543" E
hgps_25	DGPS	20° 54' 15.465" N	82° 9' 35.535" E
hgps_26	DGPS	20° 54' 16.375" N	82° 9' 40.456" E
hgps_27	DGPS	20° 54' 19.755" N	82° 9' 40.145" E
hgps_28	DGPS	20° 54' 20.809" N	82° 9' 43.498" E
hgps_29	DGPS	20° 54' 23.840" N	82° 9' 44.430" E
hgps_30	DGPS	20° 54' 24.661" N	82° 9' 45.943" E
hgps_31	DGPS	20° 54' 32.440" N	82° 9' 46.318" E
232_F1	DGPS	20° 47' 7.400" N	82° 11' 38.400" E
232_F2	DGPS	20° 47' 5.900" N	82° 11' 39.900" E

Job No: 503308Page 7 of 9



POINT_ID	INSTRUMENT	LATITUDE(WGS84)	LONGITUDE(WGS84)
232_F3	DGPS	20° 47' 6.900" N	82° 11' 47.000" E
232_F4	DGPS	20° 47' 9.300" N	82° 11' 57.100" E
232_F5	DGPS	20° 48' 6.400" N	82° 11' 55.600" E
232_F6	DGPS	20° 47' 14.800" N	82° 12' 12.400" E

8.0 Computation

Data recorded is downloaded from both rover and base receivers of DGPS and processed in Leica infinity software to get post-processed WGS-84 co-ordinates. The geographical co-ordinates of the forest land(CA) are tabulated below.

TABLE-I GEOGRAPHICAL COORDINATES (WGS-84) 40.000 HA FOREST LAND (CA) GEVRAOCP, GEVRAAREA, SECL

Point				Latitude	Longitude
ld	Layer	Division	Range	(DMS)	(DMS)
43	COM_232	Gariyaband	Chhura	20° 47' 19.551" N	82° 11' 44.735" E
44	COM_232	Gariyaband	Chhura	20° 47' 21.491" N	82° 11' 46.992" E
45	COM_232	Gariyaband	Chhura	20° 47' 25.703" N	82° 11' 52.189" E
46	COM_232	Gariyaband	Chhura	20° 47' 31.276" N	82° 11' 57.576" E
47	COM_232	Gariyaband	Chhura	20° 47' 36.663" N	82° 12' 2.040" E
48	COM_232	Gariyaband	Chhura	20° 47' 29.908" N	82° 12' 7.443" E
49	COM_232	Gariyaband	Chhura	20° 47' 23.125" N	82° 12' 1.535" E
50	COM_232	Gariyaband	Chhura	20° 47' 17.929" N	82° 11' 58.360" E
51	COM_232	Gariyaband	Chhura	20° 47' 16.740" N	82° 11' 57.105" E
52	COM_232	Gariyaband	Chhura	20° 47' 16.128" N	82° 11' 59.315" E
53	COM_232	Gariyaband	Chhura	20° 47' 16.441" N	82° 12' 1.228" E
54	COM_232	Gariyaband	Chhura	20° 47' 17.901" N	82° 12' 2.510" E
55	COM_232	Gariyaband	Chhura	20° 47' 18.790" N	82° 12' 6.632" E
56	COM_232	Gariyaband	Chhura	20° 47' 16.983" N	82° 12' 10.329" E
57	COM_232	Gariyaband	Chhura	20° 47' 15.625" N	82° 12' 8.761" E
58	COM_232	Gariyaband	Chhura	20° 47' 14.724" N	82° 12' 9.025" E
59	COM_232	Gariyaband	Chhura	20° 47' 13.990" N	82° 12' 12.665" E
60	COM_232	Gariyaband	Chhura	20° 47' 14.612" N	82° 12' 15.950" E
61	COM_232	Gariyaband	Chhura	20° 47' 13.776" N	82° 12' 18.247" E
62	COM_232	Gariyaband	Chhura	20° 47' 12.569" N	82° 12' 17.279" E
63	COM_232	Gariyaband	Chhura	20° 47' 9.829" N	82° 12' 14.368" E
64	COM_232	Gariyaband	Chhura	20° 47' 8.476" N	82° 12' 12.400" E
65	COM_232	Gariyaband	Chhura	20° 47' 9.217" N	82° 12' 11.143" E
66	COM_232	Gariyaband	Chhura	20° 47' 8.286" N	82° 12' 9.515" E
67	COM_232	Gariyaband	Chhura	20° 47' 8.175" N	82° 12' 7.308" E
68	COM_232	Gariyaband	Chhura	20° 47' 7.389" N	82° 12' 6.360" E
69	COM_232	Gariyaband	Chhura	20° 47' 8.046" N	82° 12' 3.974" E

Job No: 503308Page 8 of 9



Point Id	Layer	Division	Range	Latitude (DMS)	Longitude (DMS)		
70	COM_232	Gariyaband	Chhura	20° 47' 8.524" N	82° 12' 2.095" E		
71	COM_232	Gariyaband	Chhura	20° 47' 9.958" N	82° 12' 0.992" E		
72	COM_232	Gariyaband	Chhura	20° 47' 11.220" N	82° 11' 59.441" E		
73	COM_232	Gariyaband	Chhura	20° 47' 12.453" N	82° 11' 52.252" E		
74	COM_232	Gariyaband	Chhura	20° 47' 11.882" N	82° 11' 51.083" E		
75	COM_232	Gariyaband	Chhura	20° 47' 12.285" N	82° 11' 49.802" I		
76	COM_232	Gariyaband	Chhura	20° 47' 11.988" N	82° 11' 46.380" E		
77	COM_232	Gariyaband	Chhura	20° 47' 11.705" N	82° 11' 43.127" I		
78	COM_232	Gariyaband	Chhura	20° 47' 10.258" N	82° 11' 39.806" I		
79	COM_232	Gariyaband	Chhura	20° 47' 10.935" N	82° 11' 39.415" E		
80	COM_232	Gariyaband	Chhura	20° 47' 13.970" N	82° 11' 40.540" E		
81	COM_232	Gariyaband	Chhura	20° 47' 16.527" N	82° 11' 41.890" E		
82	COM 232	Gariyaband	Chhura	20° 47' 19.551" N	82° 11' 44.735" E		

9.0 Documents Submitted

Drawing Number: CMPDI/RI5/BSP/GEOM/2022/DGPS/90

Soft copy of shape files & KML files in CD.

DISCLAIMER:

- 1. DGPS REPORT IS BASED ON SURVEY DATA.
- 2. DGPS REPORT IS FOR FOREST LAND(CA) APPLICATION ONLY & NOT VALID FOR ANY OTHER PURPOSE
- 3. CMPDIL IS NOT RESPONSIBLE FOR ANY FUTURE DISPUTE WITH RESPECT TO FOREST LAND DETAILS.

महाप्रवंध General Manager एस.ई.सी.एल., गेवरा क्षेत्र SECL, Gevra Area

126 नोडल ऑफीसर (पर्यावरण) वन्)

वन परिक्षेत्राधिकारी छरा परिशोत्र

मोडल आफासर (पर्यावरण/ वन्) Nodal Officer (ENV/Forest) SECL/Gevra Area एस.ई.सी.एल./गेवरा क्षेत्र

Job No: 503308Page 9 of 9

सयुक्त वनमंडलाधिकारी राजिम बनमंडल गरियाबंद

Divisional Forest Officer Gariaband Division Gariaband

82°7'45"E	

82°7'45"E 82°8'0"E 82°8'15"E 82°8'30"E 82°8'45"E

FID43434445464748	DivisionGariyabandGariyabandGariyabandGariyaband	Range Chhura + Chhura	Compartr Com-23		X 7						
 44 45 46 47 	Gariyaband Gariyaband		Com-23	27 +							
45 46 47	Gariyaband	Chhura		JZ	38.000	20° 47	19.55	1" N		4.735'	
46 47			Com-23	32	38.000		<u>21.49</u>		82° 11' 4		
47	Corivoh-	Chhura	Com-23	32	38.000		' 25.70		82° 11' 5		
	Gariyaband	Chhura ⁺	Com-23	32 ⁺	38.000	20° 47	' 31.27	6" N	82° 11' 5	57.576'	' E
48	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 36.66	3" N	82° 12' 2	2.040"	<u>E</u>
	Gariyaband		Com-23	32 _	38.000	20° 47	′′ 29 .90	8" N ₊	82° 12' 7	7.443"	<u>E</u>
49	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 23.12	5" N	82° 12' 1	.535"	<u>E</u>
50	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 17.92	9" N	82° 11' 5		
51	Gariyaband	Chhura +	Com-23	32 +	38.000	20° 47	<u>'' 16.74</u>	0" N+	82° 1-1' 5	57.105'	<u>'E +</u>
52	Gariyaband	Chhura	Com-23	32	38.000	20° 47	<u>'' 16.12</u>	8" N	82° 11' 5	59.315'	<u>'</u> E
53	Gariyaband	Chhura	Com-23	32	38.000	20° 47	<u>'' 16.44</u>		82° 12' 1		
54	Gariyaband	Ghhura +	Com-23	32 +	38.000	20° 47	'' 17 +.90	1" N ⁺	82° 12' 2	2.510"	<u>E</u> +
55	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 18.79	0" N	82° 12' 6	6.632"	E
56	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 16.98	3" N	82° 12' 1	0.329'	' E
57	Gariyaband	Chhura +	Com-23	32 +	38.000	20° 47	″ 15 [≞] .62	5" N ⁺	82° 12' 8	8.761"	E
58	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 14.72	4" N	82° 12' 9	9.025"	E
59	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 13.99	0" N	82° 12' 1	2.665'	'E _
60	Gariyaband	C hhura	Com-23	32	38.000	20° 47	" 14 .61	2" N	82° 12' 1	5.950'	' E
61	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 13.77	6" N	82° 12' 1	8.247'	' E
62	Gariyaband	Chhura ₊	Com-23	32 +	38.000	20° 47	'' 12 ₊ 56	9" N ₊	82° 12' 1	7.279'	'E +
63	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 9.829	" N	82° 12' 1	4.368'	Έ
64	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 8.476	" N	82° 12' 1	2.400'	' E
65	Gariyaband	Ghhura +	Com-23	32 +	38.000	20° 47	" 9.217	"N +	82° 12' 1	1.143	'E +
66	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 8.286	" N	82° 12' 9	9.515"	E
67	Gariyaband	Chhura	Com-23	32	38.000	20° 47	" 8.175	" N	82° 12' 7	7.308"	E
68	Gariyaband	Chhura +	Com-23	32 +	38.000	20° 47	7.389	" N ⁺	82° 12' 6	6.360"	E ¹
69	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 8.046	" N	82° 12' 3	8.974"	E
70	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 8.524	" N	82° 12' 2	2.095"	E
71 ⁺	Gariyaband	Chhura ⁺	Com-23	32 +	38.000	20° 47	'' 9.9 ₅₈	" N	82° 12' ().992"	E
72	Gariyaband	Chhura	Com-23	32	38.000	20° 47	'' 11.22	0" N	82° 11' 5	59.441'	' E
73	Gariyaband	Chhura +	Com-23	32 +	38.000	20° 47	'' 12 <u>,</u> 45	3" N ₊	82° 11' 5	52.252'	'E +
74	Gariyaband	Chhura	Com-23	32	38.000	20° 47	'' 11.88	2" N	82° 11' 5	51.083'	' E
75	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 12.28	5" N	82° 11' 4	9.802	' E
76	Gariyaband	Chhura +	Com-23	32 +	38.000	20 [°] 47	'' 11 ₊ 98	8" N +	82° 11' 4	6.380'	'E +
77	Gariyaband	Chhura	Com-23	32	38.000	20° 47	'' 11.70	5" N	82° 11' 4	3.127'	' E
78	Gariyaband	Chhura	Com-23	32	38.000	20° 47	'' 10.25	8" N	82° 11' 3	39.806'	' E
79	Gariyaband	Chhura +	Com-23	32 +	38.000	20° 47	′′ 10. ⁺ 93	5" N ⁺	82° 11' 3	89.415'	'E †
80	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 13.97	0" N	82° 11' 4	0.540'	Έ
81	Gariyaband	Chhura	Com-23	32	38.000	20° 47	' 16.52	7" N	82° 11' 4	1.890'	' E
82⁺	Gariyaband	C ⁺ hhura ⁺	Com-23	32 +	38.000	20 [°] 47	" 19 [*] 55	1" N ⁺	82° 11' 4	4.735'	Έ
+	+ lar	nd Sche		nf ⁺	Δ for	- - t I		+	+	+	+
(/ • •	Project Datum False E False N	hate System: WGS 1984 L ion: Transverse Mercator WGS 1984 Easting: 500,000.0000 Northing: 0.0000 Meridian: 81.0000
+ Di	vision	+ Rar	lge +		mpar	tme	ent	Are	ea(Ha	Scale F Latitud Units: I	actor: 0.9996 + e Of Origin: 0.0000
Gar	iyaband	Chh	ura		Com	-232			38		
+	- + +	+ +	· +	+	+	+	+	+	+		+

82°9'15"E 82°9'30"E

82°9'0"E

84 UTM Zone 44N

GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF CA(C FOREST LAND AT GARIYABAND DIVISION AGAINST +**REVENUE FOREST LAND OF SECL GE** (COMPARTMENT NO-232(AREA-38.0

			(COMPARTMENT NO-232(AREA-30.000 TIA)									
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°48'30"N
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°48'15"N
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°48'0"N
+	+	+	+ 47	+	+	+	+	+	+	+	+	+ −20°47'45"N
+	+	+ \$82 \$43	×46 + ×45 50 54	▶ ⁴⁸ +	+	+	+	+	+	+	+	+ −20°47'30"N
+	+	80 + Comp-232 79 77 76 ⁷⁵ 74 78	2, Area-38.000 HA	57 58 59 + 60 58 66 65 64 63 68 66 65 64 63	+	+	+	+	+	+	+	+ −20°47'15"N
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°47'0"N
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°46'45"N
+	+	+	+	+	+	+	+	+	+	+	+	+ −20°46'30"N
+	+	+	+	+	+	+	+	+	+	+	+	+ -20°46'45"N + -20°46'30"N + -20°46'15"N + -20°46'0"N
+	+	+	+	+	+	+	+	+	+	+	+	+ -20°46'0"N
+	+	+	+	+	+	+	+	+	+	+	+	+ ─20°45'45"N

+ + + + + + + + + + + -20°45'45"N

| | NCED BOUNDARY MAP (II
NSATORY AFFORESTATIO
AT GARIYABAND DIVIS | N)FOREST LAND | Job Number
503308 | | | |
|---|--|--------------------------------|---------------------------|-----------|------------|---|
| Subject + + | + Activity | ⁺ Name ⁺ | ⁺ Designation | Signature | Date | + |
| PLAN SHOWING OF CA
(COMPENSATORY AFFORESTATION)
+ FOREST+LAND +
COMPARTMENT NO-232 | _Surveyed &Processed By | + Madhusudan Banik | + Sr.Surveyor (C) | + | + | + |
| (AREA-38.000 HA)
AGAINST 94.293 HA
REVENUE FOREST LAND FOR
GEVRA OCP OF | Checked By | Upendra Pandey | Officer Survey | + | + | + |
| GEVRA AREA(SECL) | Approved | Sudhanshu Mishra | Chief Manager
(Mining) | | | |
| cmpdi ⁺ | Scale 0 + 255 5 | 510 1,020 M | + +
1:10,000 + | Sheet+ | + 1 | + |
| arine A Mini Ratna Company | Dwg
CMPDI/RI5/F | 3SP/GEOM/2023/DO | 3PS/90 | Rev No. | 0 | |

82°9'45"E 82°10'0"E 82°10'15"E 82°10'30"E 82°10'45"E 82°11'0"E 82°11'15"E 82° 11' 30"E 82° 11' 45"E 82°12'0"E 82°12'15"E 82°12'30"E 82°12'45"E

-20°48'45"N -20°48'30"N

| 2°13'0"E | 82°13'15"E | 82°13'30"E | 82°13'45"E | 82°14'0"E | 82°14'15"E | 1 |
|----------|-------------------------------------|------------|------------|-----------|------------|-------------|
| DIVE | PENSATC
RSION O
A OCP.
HA) | | | HION) | | −20°48'45"N |
| + | + | + | + | + | + | −20°48'30"N |
| + | + | + | + | + | + | −20°48'15"N |
| + | + | + | + | + | + | −20°48'0"N |
| + | + | + | + | + | + | −20°47'45"N |
| + | + | + | + | + | + | −20°47'30"N |
| + | + | + | + | + | + | −20°47'15"N |
| + | + | + | + | + | + | −20°47'0"N |
| + | + | + | + | + | + | −20°46'45"N |
| + | + | + | + | + | + | −20°46'30"N |
| + | + | + | + | + | + | −20°46'15"N |
| | | | | | | |



ANNEXURES



DRAWINGS & COMPACT DISC

Job No.: 503308

STRICTLY RESTRICTED FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

GEO-REFERENCED BOUNDARY MAP

(IN SHAPE FILE) COMPENSATORT AFFORESTATION (CA) FOREST LAND (AREA-40.00 HA) GEVRA PROJECT GEVRA AREA, SECL



JANUARY-2023



| | INDEX | |
|----------|---|------|
| Chapter | TOPIC | Page |
| 1.0 | Introduction | 1 |
| 2.0 | Background | 1-3 |
| 3.0 | Location | 3 |
| 4.0 | Scope of Services | 3 |
| 5.0 | Methodology | 3-4 |
| 6.0 | Survey Instrument | 4-5 |
| 7.0 | Details of Field Activity | 5-8 |
| 8.0 | Computation | 8 |
| 9.0 | Documents Submitted | 9-10 |
| Table | TABLES | |
| 1 | Geo-Referenced Boundary Map (in shape file) of Compensatory
Afforestation (CA) Forest Land (Area-40.00 Ha) for Gevra OCP, Gevra
Area,SECL | 8-9 |
| Annexure | ANNEXURES | |
| I | letter G-FORS/16/0003/2022-Forest, SECL HQ- SOUTH EASTERN COALFILDS
LIMITED (Computer No 753101) | |
| Drawing | DRAWINGS | |
| 1 | CMPDI/RI5/BSP/GEOM/2022/DGPS/90 | |
| CD | CD | |
| 1 | Soft copy of shape files and KML files in CD | |



GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF COMPENSATORY AFFORESTATION (CA) FOREST LAND (AREA-54.00 HA) AT GARIYABAND DIVISION FOR GEVRA OCP, GEVRA AREA, SECL

1.0 Introduction

A proposal for DGPS survey of 40.000hectarecompensatory afforestation (CA) forest land at Gariyaband division has been received in CMPDIL through e-office along with details of forest land allotted by forest department duly forwarded through General Manager, Gevra Area, South Eastern Coalfields Limited (SECL) vide letter G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101).As per annual action plan for the year 2022-2023(CMPDI/RI-5/EXPL/2022-23/03 Dated 01-04-2022) DGPS survey of forest land is to be taken up by CMPDIL.

As per work order No.G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101).the CA land (Area-40.00Ha) for 94.293 Ha revenue forest land proposal of Gevra OCP has been identified at Gariyaband Forest Division.

Colliery authorities identified the patch on the ground with the help of forest officials.DGPS survey has been carried out at selected ground locations identified by forestpersonnelas per requirement.

DGPS report containing geo-referenced boundary map and shape files in projected and geographical coordinate system is submitted herewith. A geo-referenced boundary map in 1:10000 scale and corresponding KML files are also enclosed herewith in order to facilitate SECL to apply through online application portal PARIVESH.

Soft copies of the map and shape files are given in CD for further necessary action by SECL. Relevant documents are given as annexures in this report.

The following table shows the land schedule of the proposed Compensatory Afforestation (CA) Forest Land.

| Land Schedule of Compensatory Afforestation(CA) Forest Land | | | | | | | |
|---|------------|--------|------------|----------|--|--|--|
| SL. NO. | Division | Range | Comp | Area(HA) | | | |
| 1 | Gariyaband | Chhura | COM-160 | 20.00 | | | |
| I | | | COM-161 | 20.00 | | | |
| | | | Total Area | 40.000 | | | |

2.0 Background

Electricity is a very important commodity that cannot be dispensed for the modern lifestyle of people and communities worldwide. India being a growing economy is not an exception. Electricity produced through thermal power stations meets about seventy percentage of total electricity requirement of our country. Coal plays a vital role in these thermal power stations. With growing

Job No: 503308Page 1 of 10



concern for increasing power production, the thrust is on increasing production on coal producing companies, such as SECL.

Coal demand for other industrial and domestic consumption has also increased over the years. Coal producing companies, in general, are always required to mine more coal through open cast and underground coal mines in order to meet the coal demand by thermal power stations.

Coal producing companies are left with only two options. Either they should open new coal mines or increase the capacity of existing mines. While it is not very easy to open up new coal mines, the only option left is to expand the existing mines in terms of its capacity or in terms of physical extent of the existing mine.

In most of the mining lease hold areas it is observed that the coal bearing area is falling in forest areas that has been left out for want of forestry clearance. These forest lands are categorized into the following three types:

- Reserved Forest
- Protected Forest
- Revenue Forest

In order to carry out mining activities in these forest lands, forest clearance is required to obtain from the Ministry of Environment, Forest and Climate Change(MOEFCC).

To check irrational exploitation of forest and to maintain the ecological balance, Forest Conservation Act (FRA), 1980 has been enacted. Under this act, no forest land can be used for non-forestry purpose without prior approval from the ministry.

For getting forest clearance from MOEFCC the coal producing companies are required to apply through recently updated web portal called "Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-Window Hub (PARIVESH)" which is a web based, role-based workflow application that has been developed for online submission and monitoring of proposals submitted by the proponents for seeking environment, forest, wildlife, and CRZ clearances from central state and district level authorities.

It automates the entire tracking of proposals which includes online submission of a new proposal, editing/updating the details of proposals and displays status of the proposals at each stage of the workflow.

The procedure for forest clearance envisaged under the act mandates a two-stage approval process consisting of two stages:

Stage I

Upon prima facie review the proposal is either accepted or rejected. If approved, the project authority is required to deposit an amount for compensation of the opportunity cost of the forest (NPV, compensatory afforestation, additional expenses towards mitigating probable environmental damage etc.)

Job No: 503308Page 2 of 10



> Stage II

Following the deposit of above-mentioned costs, the land is handed over to the project authorities provided they have obtained all other requisite clearances.

Reserve forest boundaries are generally marked on the ground with large forest pillars while the boundaries of protected forests are marked on the ground with trenches, fencing and other markings.

As per the circular of MOEFCC, one of the pre-requisites for getting forestry clearance is a georeferenced boundary map in shape file format of the desired forest land.

3.0 Location

The salient points of CA forest land identified for this project are located at Chhura, District-Gariyaband, and Chhattisgarh. Nearest Gariyaband.

4.0 Scope of Services

The scope of services of CMPDIL to provide Geo-referenced boundarymap (in shape files and pdf format), converted geographical coordinates of forest boundary after making DGPS observation at salient points and KML files etc.

5.0 Methodology

Static DGPS (Differential Global Positioning System) survey is appropriate for determining geographical co-ordinates of forest boundary.

The Global Positioning System (GPS) is a satellite-based location, timing and navigation system in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. Presently, 30 orbiting satellites of GPS constellation of USA and 24 GLONASS (*Globalnaya navigatsionnaya sputnikovaya sistema* or Global Navigation Satellite System) satellites of Russia are operational for the purpose of GPS survey.

In addition to these primary GPS constellation, European space agency and Chinese have their own constellation such as Galileo and BeiDou respectively.

India's prestigious GAGAN (GPS Aided Geo Augmented Navigation (GAGAN) system) navigation system is also presently operational providing vital positional information to civil aviation and other industries.

The Global Positioning System is a system of communication made up of three independent aspects such as:

GPS satellites orbiting the Earth;

Job No: 503308Page 3 of 10



- Control and monitoring stations on Earth;
- GPS receivers owned by users.

GPS satellites transmit the satellites number, its position in space, and the exact time. These informations are sent through the transmitted signals at regular intervals by all the satellites are all times.

These signals are picked up by various types of GPS receivers on ground. With signals from three or more satellites, a GPS receiver can triangulate its location on the ground (i.e., longitude and latitude) from the known position of the satellites. With four or more satellites, a GPS receiver can determine a 3D position (i.e., latitude, longitude, and ellipsoidal height).Differential Global Positioning System (DGPS) refers to using two or more GPS receivers to achieve greater positional accuracy. There are three basic methods of doing DGPS survey.

- > Static
- Rapid-Static
- Real-time Kinematic (RTK).

For doing DGPS survey of forest land, post-processed static survey is found to be most suitable where one GPS receiver is used as base station and other GPS receivers are used as rover stations. Base receiver is stationed at a point of known co-ordinates for longer duration and rover stations are kept at unknown stations for comparatively shorter duration. DGPS observation is done in each rover stations for compensatory afforestation.

Data from base and rovers are downloaded and then post-processed in GPS data processing software, Leicainfinity to achieve sub-centimeter level accuracies.

ArcGIS 10.2 version software is used for preparation of shape files, KML file and geo-referenced map of the forest land in WGS-84 co-ordinates.

6.0 Survey Instrument

For providing geographical (spherical) co-ordinates of the stations along the boundary, Differential Global Positioning System (DGPS) consisting of one base receiver and a rover receiver were used. CMPDIL has the latest hardware and software of Leica make DGPS instrument which has dual-frequency GPS signal receivers that provide accurate results after post processing in relevant software. Brief specifications of DGPS are provided in the table below.



| Α | DGPS Instrument: | |
|---|----------------------------|--|
| | Make | Leica |
| | Model | GS25 & GS16 |
| | Signal | GPS: L1, L2&L5 carrier, CA, L1P, L2P, L2C |
| | | GLONASS: L1, L2&L5 carrier, L1CA, L2CA, L1P, L2P |
| | | GALILEO: E2-L1-E1, E5, E6 |
| | Channels | 72 |
| | Accuracy: | sub-centimeter |
| | Post Processed Static DGPS | 3mm +0.5ppm horizontal, 5mm + 0.5ppm vertical |
| | Real Time RTK | 10mm + 1 ppm horizontal, 15mm + 1 ppm vertical |
| | Power: | |
| | Internal Battery | 2 Li-Ion, 3900mAh, 7.2V |
| | Communication: | |
| | Bluetooth | Bluetooth standard 1.2 |
| | USB | 1.1 Version |
| В | DGPS Software | Inbuilt Leica software for data recording |
| | | Leicainfinity for data processing |

7.0 Details of Field Activity

DGPS survey has been carried out in ground locations identified by forest authorities in the presence of Gevra colliery authority. The following table Showing Details of DGPS Survey Point (WGS84).

| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|------------|------------|-------------------|------------------|
| COMP-5/0 | DGPS | 20° 59' 4.590" N | 82° 4' 18.600" E |
| COMP-5/1 | DGPS | 20° 59' 4.767" N | 82° 4' 18.673" E |
| COMP-161/1 | DGPS | 20° 54' 11.925" N | 82° 9' 34.198" E |
| COMP-161/2 | DGPS | 20° 54' 14.178" N | 82° 9' 25.998" E |
| COMP-160/1 | DGPS | 20° 54' 17.188" N | 82° 9' 15.245" E |
| COMP-160/2 | DGPS | 20° 54' 22.751" N | 82° 8' 55.928" E |
| COMP-160/3 | DGPS | 20° 54' 36.413" N | 82° 9' 5.846" E |
| COMP-161/3 | DGPS | 20° 54' 32.253" N | 82° 9' 37.466" E |
| COMP-160/4 | DGPS | 20° 54' 11.756" N | 82° 9' 34.117" E |
| COMP160/5 | DGPS | 20° 54' 18.211" N | 82° 9' 11.925" E |
| COMP161/5 | DGPS | 20° 54' 19.334" N | 82° 9' 7.897" E |
| COMP161/6 | DGPS | 20° 54' 20.496" N | 82° 9' 7.666" E |
| COMP161/7 | DGPS | 20° 54' 20.682" N | 82° 9' 5.876" E |
| COMP161/8 | DGPS | 20° 54' 20.017" N | 82° 9' 5.460" E |
| COMP161/9 | DGPS | 20° 54' 21.436" N | 82° 9' 0.192" E |
| COMP161/10 | DGPS | 20° 54' 24.048" N | 82° 8' 56.827" E |
| COMP161/11 | DGPS | 20° 54' 25.146" N | 82° 8' 57.939" E |

Job No: 503308Page 5 of 10



| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|----------------|------------|-------------------|-------------------|
| COMP161/12A | DGPS | 20° 54' 25.238" N | 82° 8' 59.211" E |
| COMP161/13 | DGPS | 20° 54' 25.238" N | 82° 8' 59.211" E |
| COMP161/14 | DGPS | 20° 54' 31.236" N | 82° 9' 2.013" E |
| COMP161/15 | DGPS | 20° 54' 32.886" N | 82° 9' 3.310" E |
| COMP161/16 | DGPS | 20° 54' 39.708" N | 82° 9' 10.530" E |
| COMP161/17 | DGPS | 20° 54' 32.359" N | 82° 9' 14.908" E |
| COMP-160/6 | DGPS | 20° 54' 23.052" N | 82° 9' 18.662" E |
| COMP-160/7 | DGPS | 20° 54' 22.374" N | 82° 9' 18.139" E |
| COMP-160/8 | DGPS | 20° 54' 22.614" N | 82° 9' 17.407" E |
| COMP-160/9 | DGPS | 20° 54' 18.843" N | 82° 9' 15.765" E |
| COMP-160/10 | DGPS | 20° 54' 18.638" N | 82° 9' 15.449" E |
| COMP-160/11 | DGPS | 20° 54' 18.614" N | 82° 9' 15.217" E |
| COMP-232/2 (2) | DGPS | 20° 47' 8.409" N | 82° 11' 40.715" E |
| COMP-232/2 | DGPS | 20° 47' 8.291" N | 82° 12' 7.217" E |
| COMP-232/3 | DGPS | 20° 47' 21.258" N | 82° 12' 18.006" E |
| COMP-232/4 | DGPS | 20° 47' 22.843" N | 82° 12' 20.237" E |
| COMP-232/5 | DGPS | 20° 47' 24.003" N | 82° 12' 20.031" E |
| COMP-232/6 | DGPS | 20° 47' 25.247" N | 82° 12' 17.680" E |
| COMP-232/7 | DGPS | 20° 47' 15.819" N | 82° 12' 10.124" E |
| COMP-232/8 | DGPS | 20° 47' 15.029" N | 82° 11' 58.708" E |
| COMP-232/9 | DGPS | 20° 47' 12.570" N | 82° 11' 59.043" E |
| GPS1 | DGPS | 20° 54' 25.514" N | 82° 9' 34.720" E |
| GPS2 | DGPS | 20° 54' 23.099" N | 82° 9' 34.149" E |
| GPS3 | DGPS | 20° 54' 22.569" N | 82° 9' 35.874" E |
| GPS4 | DGPS | 20° 54' 32.478" N | 82° 9' 46.245" E |
| GPS5 | DGPS | 20° 54' 27.306" N | 82° 9' 49.140" E |
| GPS6 | DGPS | 20° 54' 24.819" N | 82° 9' 45.968" E |
| GPS7 | DGPS | 20° 54' 23.782" N | 82° 9' 44.482" E |
| GPS8 | DGPS | 20° 54' 23.764" N | 82° 9' 44.440" E |
| GPS9 | DGPS | 20° 54' 20.938" N | 82° 9' 43.413" E |
| GPS10 | DGPS | 20° 54' 19.819" N | 82° 9' 40.200" E |
| GPS11 | DGPS | 20° 54' 16.423" N | 82° 9' 40.497" E |
| GPS12 | DGPS | 20° 54' 15.493" N | 82° 9' 35.603" E |
| GPS13 | DGPS | 20° 54' 13.718" N | 82° 9' 40.360" E |
| GPS14 | DGPS | 20° 54' 13.509" N | 82° 9' 35.836" E |
| GPS15 | DGPS | 20° 54' 12.788" N | 82° 9' 35.701" E |
| GPS16 | DGPS | 20° 54' 12.588" N | 82° 9' 34.546" E |
| Comp_5_1 | DGPS | 20° 59' 2.251" N | 82° 4' 22.559" E |
| Comp_5_2 | DGPS | 20° 59' 0.401" N | 82° 4' 25.740" E |
| Comp_5_3 | DGPS | 20° 58' 56.197" N | 82° 4' 34.008" E |
| Comp_5_4 | DGPS | 20° 59' 0.150" N | 82° 4' 44.734" E |
| Comp_5_5 | DGPS | 20° 59' 1.507" N | 82° 4' 56.450" E |

Job No: 503308Page 6 of 10



| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|-----------|------------|-------------------|-------------------|
| Comp_5_6 | DGPS | 20° 58' 58.278" N | 82° 4' 58.791" E |
| Comp 5 7 | DGPS | 20° 59' 1.681" N | 82° 5' 5.499" E |
| Comp_5_8 | DGPS | 20° 58' 57.705" N | 82° 5' 12.824" E |
| Comp_5_9 | DGPS | 20° 58' 59.135" N | 82° 5' 11.385" E |
| Comp 5 10 | DGPS | 20° 59' 4.588" N | 82° 5' 12.861" E |
| Comp_5_11 | DGPS | 20° 59' 16.593" N | 82° 5' 6.343" E |
| Comp_5_12 | DGPS | 20° 59' 18.581" N | 82° 5' 5.575" E |
| Comp_5_13 | DGPS | 20° 59' 10.103" N | 82° 4' 44.914" E |
| Comp_5_14 | DGPS | 20° 59' 4.744" N | 82° 4' 18.581" E |
| hgps_1 | DGPS | 20° 54' 18.715" N | 82° 9' 22.345" E |
| hgps_2 | DGPS | 20° 54' 20.635" N | 82° 9' 23.322" E |
| hgps_3 | DGPS | 20° 54' 20.899" N | 82° 9' 25.905" E |
| hgps_4 | DGPS | 20° 54' 23.274" N | 82° 9' 26.204" E |
| hgps_5 | DGPS | 20° 54' 11.992" N | 82° 9' 34.149" E |
| hgps_6 | DGPS | 20° 54' 14.207" N | 82° 9' 25.938" E |
| hgps_7 | DGPS | 20° 54' 17.201" N | 82° 9' 15.286" E |
| hgps_8 | DGPS | 20° 54' 36.483" N | 82° 9' 5.791" E |
| hgps_9 | DGPS | 20° 54' 32.343" N | 82° 9' 37.390" E |
| hgps_10 | DGPS | 20° 54' 13.127" N | 82° 9' 29.957" E |
| hgps_11 | DGPS | 20° 54' 14.176" N | 82° 9' 26.019" E |
| hgps_12 | DGPS | 20° 54' 22.815" N | 82° 8' 55.914" E |
| hgps_13 | DGPS | 20° 54' 12.540" N | 82° 9' 34.612" E |
| hgps_14 | DGPS | 20° 54' 12.709" N | 82° 9' 35.836" E |
| hgps_15 | DGPS | 20° 54' 13.331" N | 82° 9' 35.882" E |
| hgps_16 | DGPS | 20° 54' 13.569" N | 82° 9' 40.489" E |
| hgps_17 | DGPS | 20° 54' 25.412" N | 82° 9' 34.718" E |
| hgps_18 | DGPS | 20° 54' 23.042" N | 82° 9' 34.158" E |
| hgps_19 | DGPS | 20° 54' 22.487" N | 82° 9' 35.855" E |
| hgps_20 | DGPS | 20° 54' 32.439" N | 82° 9' 46.319" E |
| hgps_21 | DGPS | 20° 54' 27.245" N | 82° 9' 49.085" E |
| hgps_22 | DGPS | 20° 54' 24.661" N | 82° 9' 45.944" E |
| hgps_23 | DGPS | 20° 54' 23.828" N | 82° 9' 44.441" E |
| hgps_24 | DGPS | 20° 54' 20.755" N | 82° 9' 43.543" E |
| hgps_25 | DGPS | 20° 54' 15.465" N | 82° 9' 35.535" E |
| hgps_26 | DGPS | 20° 54' 16.375" N | 82° 9' 40.456" E |
| hgps_27 | DGPS | 20° 54' 19.755" N | 82° 9' 40.145" E |
| hgps_28 | DGPS | 20° 54' 20.809" N | 82° 9' 43.498" E |
| hgps_29 | DGPS | 20° 54' 23.840" N | 82° 9' 44.430" E |
| hgps_30 | DGPS | 20° 54' 24.661" N | 82° 9' 45.943" E |
| hgps_31 | DGPS | 20° 54' 32.440" N | 82° 9' 46.318" E |
| 232_F1 | DGPS | 20° 47' 7.400" N | 82° 11' 38.400" E |
| | DGPS | 20° 47' 5.900" N | 82° 11' 39.900" E |

Job No: 503308Page 7 of 10



| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|----------|------------|-------------------|-------------------|
| 232_F3 | DGPS | 20° 47' 6.900" N | 82° 11' 47.000" E |
| 232_F4 | DGPS | 20° 47' 9.300" N | 82° 11' 57.100" E |
| 232_F5 | DGPS | 20° 48' 6.400" N | 82° 11' 55.600" E |
| 232_F6 | DGPS | 20° 47' 14.800" N | 82° 12' 12.400" E |

8.0 Computation

Data recorded is downloaded from both rover and base receivers of DGPS and processed in Leica infinity software to get post-processed WGS-84 co-ordinates. The geographical co-ordinates of the forest land(CA) are tabulated below.

TABLE-I GEOGRAPHICAL COORDINATES (WGS-84) 40.000 HA FOREST LAND (CA) GEVRAOCP, GEVRAAREA, SECL

| Point | | | | Latitude | Longitude |
|-------|---------|------------|--------|-------------------|------------------|
| ld | Layer | Division | Range | (DMS) | (DMS) |
| 83 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 84 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 85 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 86 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 87 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 88 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 89 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 90 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 91 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 92 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 93 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 94 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 95 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 96 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 97 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 98 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 99 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 100 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 101 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 102 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 103 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 104 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 105 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 106 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 107 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 108 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 109 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |

Job No: 503308Page 8 of 10



| Point | | | | Latitude | Longitude |
|------------|--------------------|--------------------------|------------------|--|------------------------------------|
| ld | Layer | Division | Range | (DMS) | (DMS) |
| 110 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 111 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 112 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 113 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 114 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 115 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 116 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 117 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 118 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 119 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 120 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 121 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 122 | COM_160 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 123 | COM_161 | Gariyaband | Chhura | 20° 54' 22.940" N | 82° 9' 26.394" E |
| 124 | COM_161 | Gariyaband | Chhura | 20° 54' 17.188" N | 82° 9' 15.245" E |
| 125 | COM_161 | Gariyaband | Chhura | 20° 54' 18.211" N | 82° 9' 11.925" E |
| 126 | COM_161 | Gariyaband | Chhura | 20° 54' 19.334" N | 82° 9' 7.897" E |
| 127 | COM_161 | Gariyaband | Chhura | 20° 54' 20.496" N | 82° 9' 7.666" E |
| 128 | COM_161 | Gariyaband | Chhura | 20° 54' 20.682" N | 82° 9' 5.876" E |
| 129 | COM_161 | Gariyaband | Chhura | 20° 54' 20.017" N | 82° 9' 5.460" E |
| 130 | COM_161 | Gariyaband | Chhura | 20° 54' 21.436" N | 82° 9' 0.192" E |
| 131 | COM_161 | Gariyaband | Chhura | 20° 54' 22.751" N | 82° 8' 55.928" E |
| 132 | COM_161 | Gariyaband | Chhura | 20° 54' 24.589" N | 82° 8' 58.044" E |
| 133 | COM_161 | Gariyaband | Chhura | 20° 54' 23.854" N | 82° 8' 59.618" E |
| 134 | COM_161 | Gariyaband | Chhura | 20° 54' 24.880" N | 82° 8' 59.924" E |
| 135 | COM_161 | Gariyaband | Chhura | 20° 54' 26.210" N
20° 54' 27.449" N | 82° 9' 2.103" E
82° 9' 1.483" E |
| 136
137 | COM_161
COM_161 | Gariyaband | Chhura
Chhura | 20° 54' 27.449 N
20° 54' 28.704" N | 82° 9' 2.604" E |
| 137 | | Gariyaband | Chhura | 20° 54' 29.881" N | 82° 9' 2.366" E |
| 138 | COM_161
COM_161 | Gariyaband | Chhura | 20° 54' 32.537" N | 82° 9' 3.675" E |
| 139 | COM_161 | Gariyaband
Gariyaband | Chhura | 20° 54' 33.060" N | 82° 9' 4.974" E |
| 140 | COM_101
COM_161 | Gariyaband | Chhura | 20° 54' 35.173" N | 82° 9' 7.447" E |
| 141 | COM 161 | Gariyaband | Chhura | 20° 54' 37.505" N | 82° 9' 5.637" E |
| 142 | COM_161 | Gariyaband | Chhura | 20° 54' 37.970" N | 82° 9' 6.220" E |
| 143 | COM_101
COM_161 | Gariyaband | Chhura | 20° 54' 38.328" N | 82° 9' 6.882" E |
| 145 | COM 161 | Gariyaband | Chhura | 20° 54' 38.271" N | 82° 9' 8.063" E |
| 146 | COM 161 | Gariyaband | Chhura | 20° 54' 38.488" N | 82° 9' 9.070" E |
| 147 | COM 161 | Gariyaband | Chhura | 20° 54' 38.889" N | 82° 9' 10.270" E |
| 148 | COM 161 | Gariyaband | Chhura | 20° 54' 34.556" N | 82° 9' 12.980" E |
| 149 | COM 161 | Gariyaband | Chhura | 20° 54' 31.807" N | 82° 9' 13.840" E |
| 150 | COM 161 | Gariyaband | Chhura | 20° 54' 30.009" N | 82° 9' 14.272" E |
| 151 | COM 161 | Gariyaband | Chhura | 20° 54' 25.067" N | 82° 9' 15.660" E |
| 152 | COM_161 | Gariyaband | Chhura | 20° 54' 23.072" N | 82° 9' 16.793" E |
| 153 | COM_161 | Gariyaband | Chhura | 20° 54' 21.396" N | 82° 9' 15.955" E |
| 154 | COM_161 | Gariyaband | Chhura | 20° 54' 18.614" N | 82° 9' 15.217" E |

9.0 Documents Submitted

Job No: 503308Page 9 of 10



- > Drawing Number: CMPDI/RI5/BSP/GEOM/2022/DGPS/90 Þ
 - Soft copy of shape files & KML files in CD.

DISCLAIMER:

- 1. DGPS REPORT IS BASED ON SURVEY DATA.
- 2. DGPS REPORT IS FOR FOREST LAND(CA) APPLICATION ONLY & NOT VALID FOR ANY OTHER PURPOSE
- 3. CMPDIL IS NOT RESPONSIBLE FOR ANY FUTURE DISPUTE WITH RESPECT TO FOREST LAND DETAILS.

महाप्रविधव General Manager एस.ई.सी.एल., गेवरा क्षेत्र SECL, Gevra Area

नोडल ऑफीसर (पर्यावरण/वन) Nodal Officer (ENV/Forest) SECL/Gevra Area एस.ई.सी.एल./गेवरा क्षेत्र

ाकारी वन परिक्षेत्र छरा परिक्षेत्र

संयुक्त वनमंडलाधिकारी राजिम

वनमंडल गरियाबंद

Divisional Forest Officer Gariaband Division Gariaband

Job No: 503308Page 10 of 10

| I | SariyabandGSariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161 | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N+
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N | 82° 9' 26.394" E
82° 9' 28.441" E
82° 9' 28.541" E
82° 9' 29.268" E
82° 9' 31.459" E
82° 9' 33.604" E
82° 9' 34.466" E
82° 9' 34.093" E
82° 9' 34.184" E
82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E | + + | + + | + + | + + | + | + + + |
|--|---|--|--|--|--|--|-----|-----|-----|-----|---|---------------------------------------|
| - | GariyabandGariyaban | Chhura | Com-161 \bigcirc Com-161 Com-161 Com-161 Com-161 \bigcirc Com-161 \bigcirc Com-161 \bigcirc Com-161 Com-161 Com-161 Com-161 Com-161 Com-161 Com-161 \bigcirc Com-161 \bigcirc Com-161 | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 25.008" N
20° 54' 25.479" N ⁺
20° 54' 25.567" N
20° 54' 25.462" N
20° 54' 25.053" N
20° 54' 23.099" N
20° 54' 22.635" N ⁺
20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 25.112" N
20° 54' 26.767" N ⁺
20° 54' 30.505" N
20° 54' 31.618" N | 82° 9' 28.541" E
82° 9' 29.268" E
82° 9' 31.459" E
82° 9' 33.604" E
82° 9' 34.466" E
82° 9' 34.093" E
82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E | + | | | + + | | + + |
| I G I | SariyabandGSariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} {\sf Com-161} \\ {\sf Fom-161} \\ {\sf Fom-161} \\ {\sf Com-161} \\ {\sf Com-16$ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 25.567" N
20° 54' 25.462" N
20° 54' 25.053" N
20° 54' 23.099" N
20° 54' 22.635" N ⁺
20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N ⁺
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.688" N | 82° 9' 31.459" E
82° 9' 33.604" E
82° 9' 34.466" E
82° 9' 34.093" E
82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.401" E
82° 9' 38.235" E
82° 9' 38.235" E
82° 9' 38.076" E | + | | | + + | | + + |
| I I I I I I < | SariyabandGSariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161 Com-161 Com-161 \frown Com-161 Com-161 Com-161 Com-161 \frown Com-161 | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 25.462" N
20° 54' 25.053" N
20° 54' 23.099" N
20° 54' 22.635" N ⁺
20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N ⁺
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.618" N | 82° 9' 33.604" E
82° 9' 34.466" E
82° 9' 34.093" E
82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E | | + | + | + | + | + |
| | SariyabandGSariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} {\sf Com-161} \\ {\sf Com-16$ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 25.053" N
20° 54' 23.099" N
20° 54' 22.635" N ⁺
20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N ⁺
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.618" N
20° 54' 31.612" N ⁺ | 82° 9' 34.466" E
82° 9' 34.093" E
82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E | | + | + | + | + | + |
| + G
- G | GariyabandGGariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} \hline \mbox{Com-161} & + \\ \hline \mbox{Com-161} & \\ $ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 22.635" N ⁺
20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N ⁺
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N | 82° 9' 34.184" E
82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E | | + | + | + | + | + |
| I G I G I G I H | GariyabandGariyaban | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} {\sf Com-161} \\ \end{array}$ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 22.358" N
20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N+
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N | 82° 9' 34.885" E
82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | | + + | + | + | + | + |
| | SariyabandGSariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} {\sf Com-161} \\ {\sf Com-161} \end{array}$ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 22.294" N
20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N+
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N | 82° 9' 35.929" E
82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | + | + | + | + | + | + |
| | Gariyaband(Gariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} {\sf Com-161} \\ {\sf Com-161} \\ {\scriptsize \hline {\sf Com-161}} \\ \\ {\scriptsize \hline {\sf Com-161}} \end{array}$ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 23.103" N
20° 54' 25.112" N
20° 54' 26.767" N+
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N
20° 54' 31.612" N+ | 82° 9' 37.176" E
82° 9' 38.401" E
82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | + | + | + | + | + | + |
| + G
- G | Gariyaband(Gariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | $\begin{array}{c} \hline \\ \hline $ | 20.000
20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 26.767" N+
20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N
20° 54' 31.612" N+ | 82° 9' 38.375" E
82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | + | + | + | + | + | + |
| I I I I I I I 1 I I I 2 I I I 3 I I I 4 I I I 5 I I I 6 I I I 7 I I I 9 I I I 1 I I I 2 I I I 2 I I I 2 I I I 2 I I I 1 I I I I 2 I I I I I 1 I | Sariyaband(Sariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161
Com-161
Com-161
Com-161
Com-161
Com-161
Com-161
Com-161 | 20.000
20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 28.731" N
20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N
20° 54' 31.612" N+ | 82° 9' 38.235" E
82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | Ŧ | Ŧ | Ŧ | Ŧ | Ŧ | Ŧ |
| I | Gariyaband(Gariyaband< | Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161
Com-161
Com-161
Com-161 +
Com-161
Com-161
Com-161
Com-161 | 20.000
20.000
20.000
20.000
20.000
20.000 | 20° 54' 30.505" N
20° 54' 31.708" N
20° 54' 31.688" N
20° 54' 31.612" N+ | 82° 9' 38.076" E
82° 9' 37.988" E
82° 9' 39.382" E | | | | | | |
| 0 G 1 + G 2 G G 3 G G 4 G G 5 G G 6 + G 7 G G 9 G G 0 G G 1 + G 2 G G | Gariyaband(| Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161
-Com-161 +
Com-161
Com-161
Com-161
Com-161 | 20.000
20.000
20.000
20.000 | 20° 54' 31.688" N
20° 54' 31.612" N+ | 82° 9' 39.382" E | | | | | | |
| 1 + G 2 G G 3 G G 4 G G 5 G G 6 + G 7 G G 9 G G 0 G G 1 + G 2 G G | Sariyaband (
Sariyaband (| Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | +Com-161 +
Com-161
Com-161
Com-161
Com-161 | 20.000
20.000
20.000 | 20° 54' 31.612" N+ | | | | | | | |
| 2 G
3 G
4 G
5 G
6 + G
7 G
8 G
9 G
0 G
1 + G
2 G | Sariyaband (
Sariyaband (| Chhura
Chhura
Chhura
Chhura
Chhura
Chhura
Chhura | Com-161
Com-161
Com-161
Com-161 | 20.000
20.000 | | 82° 9' 41.503" E | + | + | + | + | + | + |
| 4 G 5 G 6 + G 7 G 8 G 9 G 0 G 1 + G 2 G G | Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband | Chhura
Chhura
Chhura
Chhura
Chhura | Com-161
Com-161 | | | 82° 9' 44.032" E | | | | | | , , , , , , , , , , , , , , , , , , , |
| 5 G 6 + G 7 G 8 G 9 G 0 G 1 + G 2 G | Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband | Chhura
Chhura
Chhura
Chhura | Com-161 | | 20° 54' 31.784" N | 82° 9' 45.337" E | | | | | | |
| 6 + G
7 G
8 G
9 G
0 G
1 + G
2 G | Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband
Gariyaband | Chhura
Chhura
Chhura | | 20.000 | 20° 54' 32.073" N | 82° 9' 46.384" E | | | | | | |
| 7 G 8 G 9 G 0 G 1 + G 2 G | Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (| Chhura
Chhura | | 20.000
20.000 | 20° 54' 30.968" N
20° 54' 28.839" N+ | 82° 9' 46.907" E
82° 9' 47.834" E | + | + | + | + | + | + |
| 9 G
0 G
1 + G
2 G | Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (
Gariyaband (| | | 20.000 | 20° 54' 27.184" N | 82° 9' 48.541" E | | | | | | |
| 0 G
1 + G
2 G | Gariyaband (
Gariyaband (
Gariyaband (| · · · · · | | 20.000 | 20° 54' 26.078" N | 82° 9' 47.346" E | | | | | | |
| 1 + G
2 G | Gariyaband (
Gariyaband (| | | 20.000
20.000 | 20° 54' 24.860" N
20° 54' 23.873" N | 82° 9' 45.934" E
82° 9' 44.383" E | | | | | | |
| | | | | 20.000 | | 82° 9' 43.369" E | + | + | + | + | + | + |
| 31 16 | | | | 20.000 | 20° 54' 19.850" N | 82° 9' 40.005" E | | | | | | |
| | Gariyaband (
Gariyaband (| | | 20.000
20.000 | 20° 54' 16.489" N
20° 54' 14.891" N | 82° 9' 40.409" E
82° 9' 33.347" E | | | | | | |
| | Sariyaband (| | | 20.000 | 20° 54' 12.001" N | 82° 9' 34.121" E | | | | | | |
| | Gariyaband (| | | 20.000 | | 82° 9' 29.973¦" E | + | + | + | + | + | + |
| | Sariyaband (| | - | 20.000 | 20° 54' 14.218" N | 82° 9' 26.054" E | | | | | | |
| | Sariyaband (
Sariyaband (| | | 20.000
20.000 | 20° 54' 18.131" N
20° 54' 18.754" N | 82° 9' 26.099" E
82° 9' 22.454" E | | | | | | |
| | Gariyaband (| | _ | 20.000 | 20° 54' 20.075" N | 82° 9' 23.817" E | | | | | | |
| | Gariyaband (| | | 20.000 | | 82° 9' 26.034 " E | + | + | + | + | + | + |
| | Gariyaband (
Gariyaband (| | | 20.000
20.000 | 20° 54' 22.940" N
20° 54' 18.614" N | 82° 9' 26.394" E
82° 9' 15.217" E | | | | | | |
| | Gariyaband (| | | 20.000 | 20° 54' 17.188" N | 82° 9' 15.245" E | | | | | | |
| | Gariyaband (| | | 20.000 | 20° 54' 18.211" N | 82° 9' 11.925" E | | | | | | |
| 1 | Gariyaband (
Gariyaband (| | | 20.000
20.000 | 20° 54' 19.334" N ₊
20° 54' 20.496" N | 82° 9' 7.897" ₊ E
82° 9' 7.666" E | + | + | + | + | + | + |
| | Gariyaband (| | | 20.000 | | 82° 9' 5.876" E | | | | | | |
| | Gariyaband (| | | 20.000 | 20° 54' 20.017" N | 82° 9' 5.460" E | | | | | | |
| | Sariyaband (| | | 20.000 | | 82° 9' 0.192" E | | | | | | |
| | Sariyaband (
Sariyaband (| | | 20.000
20.000 | $20^{\circ}_{+} 54' 22.751" N_{+}$
$20^{\circ} 54' 24.589" N$ | 82° 8' 55.928" E
82° 8' 58.044" E | + | + | + | + | + | + |
| | Gariyaband (| | | 20.000 | 20° 54' 23.854" N | 82° 8' 59.618" E | | | | | | |
| | Gariyaband (| | - | 20.000 | 20° 54' 24.880" N | 82° 8' 59.924" E | | | | | | |
| | Gariyaband (
Gariyaban <u>d</u> (| | | 20.000
20.000 | 20° 54' 26.210" N
20 ₋ ° 54' 27.449" N ₊ | 82° 9' 2.103" E
82° 9' 1.483" E | | | | | | |
| | Gariyaband (| | | 20.000 | 20° 54' 28.704" N | 82° 9' 2.604" E | + | + | + | + | + | + |
| | Gariyaband (| | | 20.000 | 20° 54' 29.881" N | 82° 9' 2.366" E | | | | | | |
| | Gariyaband (
Gariyaband (| | - | 20.000
20.000 | 20° 54' 32.537" N
20° 54' 33.060" N | 82° 9' 3.675" E
82° 9' 4.974" E | | | | | | |
| | Bariyaband (| | | 20.000 | 20° 54′ 33.000′ N
20° 54′ 35.173″ N ₊ | 82° 9' 7.447"_E | + | + | + | + | + | I |
| 2 G | Gariyaband (| Chhura | Com-160 | 20.000 | 20° 54' 37.505" N | 82° 9' 5.637" E | au | T | Ŧ | op | Г | + |
| | Gariyaband (| | | 20.000 | 20° 54' 37.970" N | 82° 9' 6.220" E | | | | | | |
| | Gariyaband (
Gariyaband (| | - | 20.000
20.000 | 20° 54' 38.328" N
20° 54' 38.271" N | 82° 9' 6.882" E
82° 9' 8.063" E | | | | | | |
| 6 ₊ G | Gariyaband (| Chhura | Com-160 | 20.000 | 20°_{+} 54' 38.488" N ₊ | 82° 9' 9.070"_E | + | + | + | + | + | + |
| | Gariyaband (| | | 20.000 | | 82° 9' 10.270" E | · | | · | | · | I |
| | Gariyaband (
Gariyaband (| | | 20.000
20.000 | 20° 54' 34.556" N
20° 54' 31.807" N | 82° 9' 12.980" E
82° 9' 13.840" E | | | | | | |
| | Sariyaband (| | | 20.000 | 20° 54' 31.007' N | 82° 9' 14.272" E | | | | | | |
| 1 ₊ G | Gariyaband (| Chhura | + + | 20.000 | 20° 54' 25.067" N ₊ | 82° 9' 15.660" E | + | + | + | + | + | + |
| | Gariyaband (
Gariyaband (| | | 20.000
20.000 | | 82° 9' 16.793" E
82° 9' 15.955" E | | | | | | |
| | Sariyaband (| | | | 20° 54' 21.396' N
20° 54' 18.614" N | 82° 9' 15.955 E
82° 9' 15.217" E | | | | | | |
| -+ - + - | | | • | 1 | -
- | <u>.</u> | | | | | | |
| + | + | | + + | | + + | + | + | + | + | + | + | - |
| | | | | | | | | | | | | |

82°6'15"E

82°6'30"E

+ + +++ Range Chhura Division Cor Gariyaband Gariyaband Chhura + +

82°5'30"E

82°5'45"E

82°6'0"E

82°5'15"E

82°4'45"E

82°5'0"E

20°52'0"r

| A forest Land | Coordinate System: GC | em: GCS WGS 1 | |
|--------------------|-----------------------|------------------------------------|---|
| mpartment | Area(Ha) | + Datum: WGS 1984
Units: Degree | + |
| Com-1 +61 + | + 20 + | + | + |
| Com-160 | 20 | | |
| + + + | + + 0 | + | + |

82°6'45"E

82°7'0"E

Coordinate System: GCS WGS 1984 + Datum: WGS 1984 + Units: Degree

82°7'30"E

82°7'15"E

82°7'45"E

GE

| 82°8'0"E | 82°8'15"E | 82°8'30"E | 82°8'45"E | 82°9'0"E | 82°9'15"E | 82°9'30"E | 82°9'45"E | 82° 10'0"E | 82°10'15"E | 82°10'30"E | 82°10'45"E | -20°56'0"N |
|----------|-----------|---------------|-----------|--|--|---|--|------------|------------|------------|-----------------|-------------|
| GEO-RE | FERENCE | ED BOUN | DARY MA | AP (IN SHA | PE FILE) | OF CA(CO | OMPENSA | | FOREST | ATION) | N
▲ | 20 300 N |
| + | | LAND A
+ R | T GARIYA | ABAND DIV
FOREST L
ENT NO-16 | VISION AC | GAINST D
SECL GE | VERSION
/RA OCP. | + OF 94.29 | | + | \bigwedge_{+} | −20°55'45"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°55'30"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°55'15"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°55'0"N |
| + | + | + | + | + | +
45146 ¹⁴⁷ | + | + | + | + | + | + | −20°54'45"N |
| + | + | + | + | + 138
136
137
136
137
136
137
137
137
137
137
137
137
137
137
137 | 141
148
149
150
150
151
152
153 | +
12283 84 90 91 92 93 5 | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | + | + | + | + | −20°54'30"N |
| + | + | + | + | + | + | 120,121
119
118Comp-160,Area
117
116
115 | 20.000 HA
113
+ | + | + | + | + | −20°54'15"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°54′0"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°53'45"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°53'30"N |
| + | + | + | + | + | + | + | + | + | + | + | + | −20°53'15"N |
| + | + | + | + | + + | + | + | + | + | + | + | + | −20°53'0"N |

| + Prc | oject ₊ GE | O-REFERE
(COMPEN | NCED BOUNDARY MAP
ISATORY AFFORESTATI
AT GARIYABAND DIV | ON)FOREST LAND + | + | Job Number
+ 50 | 3308 | + |
|--------------|--|---------------------|---|--|---------------------------|---------------------------|------|---|
| Subject | t | | Activity | Name | Designation | Signature | Date | |
| +
(CC | PLAN SHOWING OF CA
OMPENSATORY AFFOREST
FOREST LAND
COMPARTMENT NO-161& | ATION) | + +
Surveyed &Processed | + +
By Madhusudan Banik | +
Sr.Surveyor (C) | + - | F | + |
| + | (AREA-20.000 HA) EAC
+ AGAINST 94.293 HA
REVENUE FOREST LAND
GEVRA OCP OF | H + | Checked By | Up ⁺ endra Pand ⁺ ey | Officer Survey | , + - | F | + |
| + | GEVRA AREA(SECL)
+ + | + | Approved + | Sudhanshu Mishra | Chief Manager
(Mining) | + - | F | + |
| A STORE | cmpdi | | Scale 0 255 | 510 1,020 M | 1:10,000 | Sheet | 1 | |



ANNEXURES



DRAWINGS & COMPACT DISC

Job No.: 503308

STRICTLY RESTRICTED FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

GEO-REFERENCED BOUNDARY MAP

(IN SHAPE FILE) COMPENSATORT AFFORESTATION (CA) FOREST LAND (AREA-54.00 HA) GEVRA PROJECT GEVRA AREA, SECL



JANUARY-2023



| | INDEX | |
|----------|---|------|
| Chapter | TOPIC | Page |
| 1.0 | Introduction | 1 |
| 2.0 | Background | 1-3 |
| 3.0 | Location | 3 |
| 4.0 | Scope of Services | 3 |
| 5.0 | Methodology | 3-4 |
| 6.0 | Survey Instrument | 4-5 |
| 7.0 | Details of Field Activity | 5-8 |
| 8.0 | Computation | 8 |
| 9.0 | Documents Submitted | 9 |
| Table | TABLES | |
| I | Geo-Referenced Boundary Map (in shape file) of Compensatory
Afforestation (CA) Forest Land (Area-54.00 Ha) for Gevra OCP, Gevra
Area,SECL | 8-9 |
| Annexure | ANNEXURES | |
| I | letter G-FORS/16/0003/2022-Forest, SECL HQ- SOUTH EASTERN COALFILDS
LIMITED (Computer No 753101) | |
| Drawing | DRAWINGS | |
| 1 | CMPDI/RI5/BSP/GEOM/2022/DGPS/90 | |
| CD | CD | |
| 1 | Soft copy of shape files and KML files in CD | |



GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF COMPENSATORY AFFORESTATION (CA) FOREST LAND (AREA-54.00 HA) AT GARIYABAND DIVISION FOR GEVRA OCP, GEVRA AREA, SECL

1.0 Introduction

A proposal for DGPS survey of 54.000hectarecompensatory afforestation (CA) forest land at Gariyaband division has been received in CMPDIL through e-office along with details of forest land allotted by forest department duly forwarded through General Manager, Gevra Area, South Eastern Coalfields Limited (SECL) vide letter G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101).As per annual action plan for the year 2022-2023(CMPDI/RI-5/EXPL/2022-23/03 Dated 01-04-2022) DGPS survey of forest land is to be taken up by CMPDIL.

As per work order No.G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101). the CA land (Area-54.00Ha) for 94.293 Ha revenue forest land proposal of Gevra OCP has been identified at Gariyaband Forest Division.

Colliery authorities identified the patch on the ground with the help of forest officials.DGPS survey has been carried out at selected ground locations identified by forestpersonnelas per requirement.

DGPS report containing geo-referenced boundary map and shape files in projected and geographical coordinate system is submitted herewith. A geo-referenced boundary map in 1:10000 scale and corresponding KML files are also enclosed herewith in order to facilitate SECL to apply through online application portal PARIVESH.

Soft copies of the map and shape files are given in CD for further necessary action by SECL. Relevant documents are given as annexures in this report.

The following table shows the land schedule of the proposed Compensatory Afforestation (CA) Forest Land.

| Land Schedule of Compensatory Afforestation(CA) Forest Land | | | | | | |
|---|------------|------------|-------|------------|--------|--|
| SL. NO. Division Range Comp Area(HA) | | | | | (HA) | |
| 1 | Gariyaband | Fingeshwar | COM-5 | 54.00 | | |
| | | | | Total Area | 54.000 | |

2.0 Background

Electricity is a very important commodity that cannot be dispensed for the modern lifestyle of people and communities worldwide. India being a growing economy is not an exception. Electricity produced through thermal power stations meets about seventy percentage of total electricity requirement of our country. Coal plays a vital role in these thermal power stations. With growing



concern for increasing power production, the thrust is on increasing production on coal producing companies, such as SECL.

Coal demand for other industrial and domestic consumption has also increased over the years. Coal producing companies, in general, are always required to mine more coal through open cast and underground coal mines in order to meet the coal demand by thermal power stations.

Coal producing companies are left with only two options. Either they should open new coal mines or increase the capacity of existing mines. While it is not very easy to open up new coal mines, the only option left is to expand the existing mines in terms of its capacity or in terms of physical extent of the existing mine.

In most of the mining lease hold areas it is observed that the coal bearing area is falling in forest areas that has been left out for want of forestry clearance. These forest lands are categorized into the following three types:

- Reserved Forest
- Protected Forest
- Revenue Forest

In order to carry out mining activities in these forest lands, forest clearance is required to obtain from the Ministry of Environment, Forest and Climate Change(MOEFCC).

To check irrational exploitation of forest and to maintain the ecological balance, Forest Conservation Act (FRA), 1980 has been enacted. Under this act, no forest land can be used for non-forestry purpose without prior approval from the ministry.

For getting forest clearance from MOEFCC the coal producing companies are required to apply through recently updated web portal called "Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-Window Hub (PARIVESH)" which is a web based, role-based workflow application that has been developed for online submission and monitoring of proposals submitted by the proponents for seeking environment, forest, wildlife, and CRZ clearances from central state and district level authorities.

It automates the entire tracking of proposals which includes online submission of a new proposal, editing/updating the details of proposals and displays status of the proposals at each stage of the workflow.

The procedure for forest clearance envisaged under the act mandates a two-stage approval process consisting of two stages:

Stage I

Upon prima facie review the proposal is either accepted or rejected. If approved, the project authority is required to deposit an amount for compensation of the opportunity cost of the forest (NPV, compensatory afforestation, additional expenses towards mitigating probable environmental damage etc.)

Job No: 503308



> Stage II

Following the deposit of above-mentioned costs, the land is handed over to the project authorities provided they have obtained all other requisite clearances.

Reserve forest boundaries are generally marked on the ground with large forest pillars while the boundaries of protected forests are marked on the ground with trenches, fencing and other markings.

As per the circular of MOEFCC, one of the pre-requisites for getting forestry clearance is a georeferenced boundary map in shape file format of the desired forest land.

3.0 Location

The salient points of CA forest land identified for this project are located at fingeshwar,District-Gariyaband, Chhattisgarh.Nearest Gariyaband.

4.0 Scope of Services

The scope of services of CMPDIL to provide Geo-referenced boundarymap (in shape files and pdf format), converted geographical coordinates of forest boundary after making DGPS observation at salient points and KML files etc.

5.0 Methodology

Static DGPS (Differential Global Positioning System) survey is appropriate for determining geographical co-ordinates of forest boundary.

The Global Positioning System (GPS) is a satellite-based location, timing and navigation system in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. Presently, 30 orbiting satellites of GPS constellation of USA and 24 GLONASS (*Globalnaya navigatsionnaya sputnikovaya sistema* or Global Navigation Satellite System) satellites of Russia are operational for the purpose of GPS survey.

In addition to these primary GPS constellation, European space agency and Chinese have their own constellation such as Galileo and BeiDou respectively.

India's prestigious GAGAN (GPS Aided Geo Augmented Navigation (GAGAN) system) navigation system is also presently operational providing vital positional information to civil aviation and other industries.

The Global Positioning System is a system of communication made up of three independent aspects such as:

➢ GPS satellites orbiting the Earth;

Job No: 503308



- Control and monitoring stations on Earth;
- GPS receivers owned by users.

GPS satellites transmit the satellites number, its position in space, and the exact time. These informations are sent through the transmitted signals at regular intervals by all the satellites are all times.

These signals are picked up by various types of GPS receivers on ground. With signals from three or more satellites, a GPS receiver can triangulate its location on the ground (i.e., longitude and latitude) from the known position of the satellites. With four or more satellites, a GPS receiver can determine a 3D position (i.e., latitude, longitude, and ellipsoidal height).Differential Global Positioning System (DGPS) refers to using two or more GPS receivers to achieve greater positional accuracy. There are three basic methods of doing DGPS survey.

- > Static
- Rapid-Static
- Real-time Kinematic (RTK).

For doing DGPS survey of forest land, post-processed static survey is found to be most suitable where one GPS receiver is used as base station and other GPS receivers are used as rover stations. Base receiver is stationed at a point of known co-ordinates for longer duration and rover stations are kept at unknown stations for comparatively shorter duration. DGPS observation is done in each rover stations for compensatory afforestation.

Data from base and rovers are downloaded and then post-processed in GPS data processing software, Leicainfinity to achieve sub-centimeter level accuracies.

ArcGIS 10.2 version software is used for preparation of shape files, KML file and geo-referenced map of the forest land in WGS-84 co-ordinates.

6.0 Survey Instrument

For providing geographical (spherical) co-ordinates of the stations along the boundary, Differential Global Positioning System (DGPS) consisting of one base receiver and a rover receiver were used. CMPDIL has the latest hardware and software of Leica make DGPS instrument which has dual-frequency GPS signal receivers that provide accurate results after post processing in relevant software. Brief specifications of DGPS are provided in the table below.



| Α | DGPS Instrument: | | | | |
|---|----------------------------|---|--|--|--|
| | Make | Leica | | | |
| | Model | GS25 & GS16 | | | |
| | Signal | GPS: L1, L2&L5 carrier, CA, L1P, L2P, L2C | | | |
| | | GLONASS: L1, L2&L5 carrier, L1CA, L2CA, L1P, L2P | | | |
| | | GALILEO: E2-L1-E1, E5, E6 | | | |
| | Channels | 72 | | | |
| | Accuracy: | sub-centimeter
3mm +0.5ppm horizontal, 5mm + 0.5ppm vertical | | | |
| | Post Processed Static DGPS | | | | |
| | Real Time RTK | 10mm + 1 ppm horizontal, 15mm + 1 ppm vertical | | | |
| | Power: | | | | |
| | Internal Battery | 2 Li-Ion, 3900mAh, 7.2V | | | |
| | Communication: | | | | |
| | Bluetooth | Bluetooth standard 1.2 | | | |
| | USB | 1.1 Version | | | |
| В | DGPS Software | Inbuilt Leica software for data recording | | | |
| | | Leicainfinity for data processing | | | |

7.0 Details of Field Activity

DGPS survey has been carried out in ground locations identified by forest authorities in the presence of Gevra colliery authority. The following table Showing Details of DGPS Survey Point (WGS84).

| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|------------|------------|-------------------|------------------|
| COMP-5/0 | DGPS | 20° 59' 4.590" N | 82° 4' 18.600" E |
| COMP-5/1 | DGPS | 20° 59' 4.767" N | 82° 4' 18.673" E |
| COMP-161/1 | DGPS | 20° 54' 11.925" N | 82° 9' 34.198" E |
| COMP-161/2 | DGPS | 20° 54' 14.178" N | 82° 9' 25.998" E |
| COMP-160/1 | DGPS | 20° 54' 17.188" N | 82° 9' 15.245" E |
| COMP-160/2 | DGPS | 20° 54' 22.751" N | 82° 8' 55.928" E |
| COMP-160/3 | DGPS | 20° 54' 36.413" N | 82° 9' 5.846" E |
| COMP-161/3 | DGPS | 20° 54' 32.253" N | 82° 9' 37.466" E |
| COMP-160/4 | DGPS | 20° 54' 11.756" N | 82° 9' 34.117" E |
| COMP160/5 | DGPS | 20° 54' 18.211" N | 82° 9' 11.925" E |
| COMP161/5 | DGPS | 20° 54' 19.334" N | 82° 9' 7.897" E |
| COMP161/6 | DGPS | 20° 54' 20.496" N | 82° 9' 7.666" E |
| COMP161/7 | DGPS | 20° 54' 20.682" N | 82° 9' 5.876" E |
| COMP161/8 | DGPS | 20° 54' 20.017" N | 82° 9' 5.460" E |
| COMP161/9 | DGPS | 20° 54' 21.436" N | 82° 9' 0.192" E |
| COMP161/10 | DGPS | 20° 54' 24.048" N | 82° 8' 56.827" E |
| COMP161/11 | DGPS | 20° 54' 25.146" N | 82° 8' 57.939" E |

Job No: 503308

Page 5 of 9



| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|----------------|------------|-------------------|-------------------|
| COMP161/12A | DGPS | 20° 54' 25.238" N | 82° 8' 59.211" E |
| COMP161/13 | DGPS | 20° 54' 25.238" N | 82° 8' 59.211" E |
| COMP161/14 | DGPS | 20° 54' 31.236" N | 82° 9' 2.013" E |
| COMP161/15 | DGPS | 20° 54' 32.886" N | 82° 9' 3.310" E |
| COMP161/16 | DGPS | 20° 54' 39.708" N | 82° 9' 10.530" E |
| COMP161/17 | DGPS | 20° 54' 32.359" N | 82° 9' 14.908" E |
| COMP-160/6 | DGPS | 20° 54' 23.052" N | 82° 9' 18.662" E |
| COMP-160/7 | DGPS | 20° 54' 22.374" N | 82° 9' 18.139" E |
| COMP-160/8 | DGPS | 20° 54' 22.614" N | 82° 9' 17.407" E |
| COMP-160/9 | DGPS | 20° 54' 18.843" N | 82° 9' 15.765" E |
| COMP-160/10 | DGPS | 20° 54' 18.638" N | 82° 9' 15.449" E |
| COMP-160/11 | DGPS | 20° 54' 18.614" N | 82° 9' 15.217" E |
| COMP-232/2 (2) | DGPS | 20° 47' 8.409" N | 82° 11' 40.715" E |
| COMP-232/2 | DGPS | 20° 47' 8.291" N | 82° 12' 7.217" E |
| COMP-232/3 | DGPS | 20° 47' 21.258" N | 82° 12' 18.006" E |
| COMP-232/4 | DGPS | 20° 47' 22.843" N | 82° 12' 20.237" E |
| COMP-232/5 | DGPS | 20° 47' 24.003" N | 82° 12' 20.031" E |
| COMP-232/6 | DGPS | 20° 47' 25.247" N | 82° 12' 17.680" E |
| COMP-232/7 | DGPS | 20° 47' 15.819" N | 82° 12' 10.124" E |
| COMP-232/8 | DGPS | 20° 47' 15.029" N | 82° 11' 58.708" E |
| COMP-232/9 | DGPS | 20° 47' 12.570" N | 82° 11' 59.043" E |
| GPS1 | DGPS | 20° 54' 25.514" N | 82° 9' 34.720" E |
| GPS2 | DGPS | 20° 54' 23.099" N | 82° 9' 34.149" E |
| GPS3 | DGPS | 20° 54' 22.569" N | 82° 9' 35.874" E |
| GPS4 | DGPS | 20° 54' 32.478" N | 82° 9' 46.245" E |
| GPS5 | DGPS | 20° 54' 27.306" N | 82° 9' 49.140" E |
| GPS6 | DGPS | 20° 54' 24.819" N | 82° 9' 45.968" E |
| GPS7 | DGPS | 20° 54' 23.782" N | 82° 9' 44.482" E |
| GPS8 | DGPS | 20° 54' 23.764" N | 82° 9' 44.440" E |
| GPS9 | DGPS | 20° 54' 20.938" N | 82° 9' 43.413" E |
| GPS10 | DGPS | 20° 54' 19.819" N | 82° 9' 40.200" E |
| GPS11 | DGPS | 20° 54' 16.423" N | 82° 9' 40.497" E |
| GPS12 | DGPS | 20° 54' 15.493" N | 82° 9' 35.603" E |
| GPS13 | DGPS | 20° 54' 13.718" N | 82° 9' 40.360" E |
| GPS14 | DGPS | 20° 54' 13.509" N | 82° 9' 35.836" E |
| GPS15 | DGPS | 20° 54' 12.788" N | 82° 9' 35.701" E |
| GPS16 | DGPS | 20° 54' 12.588" N | 82° 9' 34.546" E |
| Comp_5_1 | DGPS | 20° 59' 2.251" N | 82° 4' 22.559" E |
| Comp_5_2 | DGPS | 20° 59' 0.401" N | 82° 4' 25.740" E |
| Comp_5_3 | DGPS | 20° 58' 56.197" N | 82° 4' 34.008" E |
| Comp_5_4 | DGPS | 20° 59' 0.150" N | 82° 4' 44.734" E |
| Comp 5 5 | DGPS | 20° 59' 1.507" N | 82° 4' 56.450" E |
| lob No: 503308 | | | Page 6 of 9 |

Job No: 503308

Page 6 of 9



| INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|------------|--|---|
| DGPS | 20° 58' 58.278" N | 82° 4' 58.791" E |
| DGPS | 20° 59' 1.681" N | 82° 5' 5.499" E |
| DGPS | 20° 58' 57.705" N | 82° 5' 12.824" E |
| DGPS | 20° 58' 59.135" N | 82° 5' 11.385" E |
| DGPS | 20° 59' 4.588" N | 82° 5' 12.861" E |
| DGPS | 20° 59' 16.593" N | 82° 5' 6.343" E |
| DGPS | 20° 59' 18.581" N | 82° 5' 5.575" E |
| DGPS | 20° 59' 10.103" N | 82° 4' 44.914" E |
| DGPS | 20° 59' 4.744" N | 82° 4' 18.581" E |
| DGPS | 20° 54' 18.715" N | 82° 9' 22.345" E |
| DGPS | 20° 54' 20.635" N | 82° 9' 23.322" E |
| DGPS | 20° 54' 20.899" N | 82° 9' 25.905" E |
| DGPS | 20° 54' 23.274" N | 82° 9' 26.204" E |
| DGPS | 20° 54' 11.992" N | 82° 9' 34.149" E |
| DGPS | 20° 54' 14.207" N | 82° 9' 25.938" E |
| DGPS | 20° 54' 17.201" N | 82° 9' 15.286" E |
| DGPS | 20° 54' 36.483" N | 82° 9' 5.791" E |
| DGPS | 20° 54' 32.343" N | 82° 9' 37.390" E |
| DGPS | 20° 54' 13.127" N | 82° 9' 29.957" E |
| DGPS | 20° 54' 14.176" N | 82° 9' 26.019" E |
| DGPS | 20° 54' 22.815" N | 82° 8' 55.914" E |
| DGPS | 20° 54' 12.540" N | 82° 9' 34.612" E |
| DGPS | 20° 54' 12.709" N | 82° 9' 35.836" E |
| DGPS | 20° 54' 13.331" N | 82° 9' 35.882" E |
| DGPS | 20° 54' 13.569" N | 82° 9' 40.489" E |
| DGPS | 20° 54' 25.412" N | 82° 9' 34.718" E |
| DGPS | 20° 54' 23.042" N | 82° 9' 34.158" E |
| DGPS | 20° 54' 22.487" N | 82° 9' 35.855" E |
| DGPS | 20° 54' 32.439" N | 82° 9' 46.319" E |
| DGPS | 20° 54' 27.245" N | 82° 9' 49.085" E |
| DGPS | 20° 54' 24.661" N | 82° 9' 45.944" E |
| DGPS | 20° 54' 23.828" N | 82° 9' 44.441" E |
| DGPS | 20° 54' 20.755" N | 82° 9' 43.543" E |
| DGPS | 20° 54' 15.465" N | 82° 9' 35.535" E |
| DGPS | 20° 54' 16.375" N | 82° 9' 40.456" E |
| DGPS | 20° 54' 19.755" N | 82° 9' 40.145" E |
| DGPS | 20° 54' 20.809" N | 82° 9' 43.498" E |
| DGPS | 20° 54' 23.840" N | 82° 9' 44.430" E |
| DGPS | 20° 54' 24.661" N | 82° 9' 45.943" E |
| DGPS | 20° 54' 32.440" N | 82° 9' 46.318" E |
| DGPS | 20° 47' 7.400" N | 82° 11' 38.400" E |
| DGPS | 20° 47' 5.900" N | 82° 11' 39.900" E |
| | DGPS
DGPS
DGPS
DGPS
DGPS
DGPS
DGPS
DGPS | DGPS 20° 58' 58.278" N DGPS 20° 59' 1.681" N DGPS 20° 58' 57.705" N DGPS 20° 58' 59.135" N DGPS 20° 59' 4.588" N DGPS 20° 59' 16.593" N DGPS 20° 59' 16.593" N DGPS 20° 59' 16.593" N DGPS 20° 59' 10.103" N DGPS 20° 59' 10.103" N DGPS 20° 59' 4.744" N DGPS 20° 54' 20.635" N DGPS 20° 54' 20.899" N DGPS 20° 54' 11.992" N DGPS 20° 54' 14.207" N DGPS 20° 54' 14.207" N DGPS 20° 54' 32.343" N DGPS 20° 54' 13.127" N DGPS 20° 54' 13.127" N DGPS 20° 54' 12.709" N DGPS 20° 54' 13.31" N DGPS 20° 54' 13.331" N DGPS 20° 54' 13.331" N DGPS 20° 54' 23.428" N </td |

Job No: 503308

Page 7 of 9



| POINT_ID | INSTRUMENT | LATITUDE(WGS84) | LONGITUDE(WGS84) |
|----------|------------|-------------------|-------------------|
| 232_F3 | DGPS | 20° 47' 6.900" N | 82° 11' 47.000" E |
| 232_F4 | DGPS | 20° 47' 9.300" N | 82° 11' 57.100" E |
| 232_F5 | DGPS | 20° 48' 6.400" N | 82° 11' 55.600" E |
| 232_F6 | DGPS | 20° 47' 14.800" N | 82° 12' 12.400" E |

8.0 Computation

Data recorded is downloaded from both rover and base receivers of DGPS and processed in Leica infinity software to get post-processed WGS-84 co-ordinates. The geographical co-ordinates of the forest land(CA) are tabulated below.

TABLE-I GEOGRAPHICAL COORDINATES (WGS-84) 54.000 HA FOREST LAND (CA) GEVRAOCP, GEVRAAREA, SECL

| Point | | | | Latitude | Longitude |
|--------|--------|------------|------------|-------------------|------------------|
| ld | Layer | Division | Range | (DMS) | (DMS) |
| 0 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 6.405" N | 82° 4' 25.201" E |
| 1 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 7.692" N | 82° 4' 30.514" E |
| 2 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 8.401" N | 82° 4' 35.275" E |
| 3 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 9.238" N | 82° 4' 40.100" E |
| 4 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 10.103" N | 82° 4' 44.914" E |
| 5 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 12.642" N | 82° 4' 51.183" E |
| 6 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 16.304" N | 82° 5' 0.040" E |
| 7 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 18.581" N | 82° 5' 5.575" E |
| 8 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 16.593" N | 82° 5' 6.343" E |
| 9 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 15.063" N | 82° 5' 7.667" E |
| 10 | COM 5 | Gariyaband | Fingeshwar | 20° 59' 14.608" N | 82° 5' 8.019" E |
| 11 | COM 5 | Gariyaband | Fingeshwar | 20° 59' 14.066" N | 82° 5' 8.192" E |
| 12 | COM 5 | Gariyaband | Fingeshwar | 20° 59' 12.342" N | 82° 5' 8.123" E |
| 13 | COM 5 | Gariyaband | Fingeshwar | 20° 59' 11.821" N | 82° 5' 8.168" E |
| 14 | COM 5 | Gariyaband | Fingeshwar | 20° 59' 11.096" N | 82° 5' 8.456" E |
| 15 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 6.806" N | 82° 5' 11.811" E |
| 16 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 5.985" N | 82° 5' 12.355" E |
| 17 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 5.381" N | 82° 5' 12.602" E |
| 18 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 4.588" N | 82° 5' 12.861" E |
| 19 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 3.296" N | 82° 5' 11.857" E |
| 20 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.481" N | 82° 5' 11.382" E |
| 21 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 59.135" N | 82° 5' 11.385" E |
| 22 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 59.957" N | 82° 5' 10.526" E |
| 23 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.569" N | 82° 5' 9.803" E |
| 24 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.897" N | 82° 5' 9.101" E |
| 25 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.960" N | 82° 5' 8.643" E |
| 26 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.987" N | 82° 5' 7.911" E |
| Job No | 503308 | - | | | Page 8 of 0 |

Job No: 503308

Page 8 of 9



| Point
Id | Layer | Division | Range | Latitude
(DMS) | Longitude
(DMS) |
|-------------|-------|------------|------------|-------------------|--------------------|
| 27 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 1.183" N | 82° 5' 7.035" E |
| 28 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 1.887" N | 82° 5' 5.417" E |
| 29 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 1.333" N | 82° 5' 4.634" E |
| 30 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 59.684" N | 82° 5' 2.872" E |
| 31 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 58.605" N | 82° 5' 1.332" E |
| 32 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 58.278" N | 82° 4' 58.791" E |
| 33 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 1.507" N | 82° 4' 56.450" E |
| 34 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.150" N | 82° 4' 44.734" E |
| 35 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 56.197" N | 82° 4' 34.008" E |
| 36 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 58.390" N | 82° 4' 30.191" E |
| 37 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 0.401" N | 82° 4' 25.740" E |
| 38 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 1.574" N | 82° 4' 23.719" E |
| 39 | COM_5 | Gariyaband | Fingeshwar | 20° 58' 58.694" N | 82° 4' 17.926" E |
| 40 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 3.051" N | 82° 4' 13.698" E |
| 41 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 4.744" N | 82° 4' 18.581" E |
| 42 | COM_5 | Gariyaband | Fingeshwar | 20° 59' 6.405" N | 82° 4' 25.201" E |

9.0 Documents Submitted

Drawing Number: CMPDI/RI5/BSP/GEOM/2022/DGPS/90

Soft copy of shape files & KML files in CD.

DISCLAIMER:

- 1. DGPS REPORT IS BASED ON SURVEY DATA.
- 2. DGPS REPORT IS FOR FOREST LAND(CA) APPLICATION ONLY & NOT VALID FOR ANY OTHER PURPOSE
- 3. CMPDIL IS NOT RESPONSIBLE FOR ANY FUTURE DISPUTE WITH RESPECT TO FOREST LAND DETAILS.

महाप्रबधव General Manager एस.ई.सी.एल., गेवरा क्षेत्र SECL, Gevra Area

नोडल ऑफीसर (पर्यावरण/वन) Nodal Officer (ENV/Forest) SECL/Govra Area एस.ई.सी.एल./गेवरा क्षेत्र

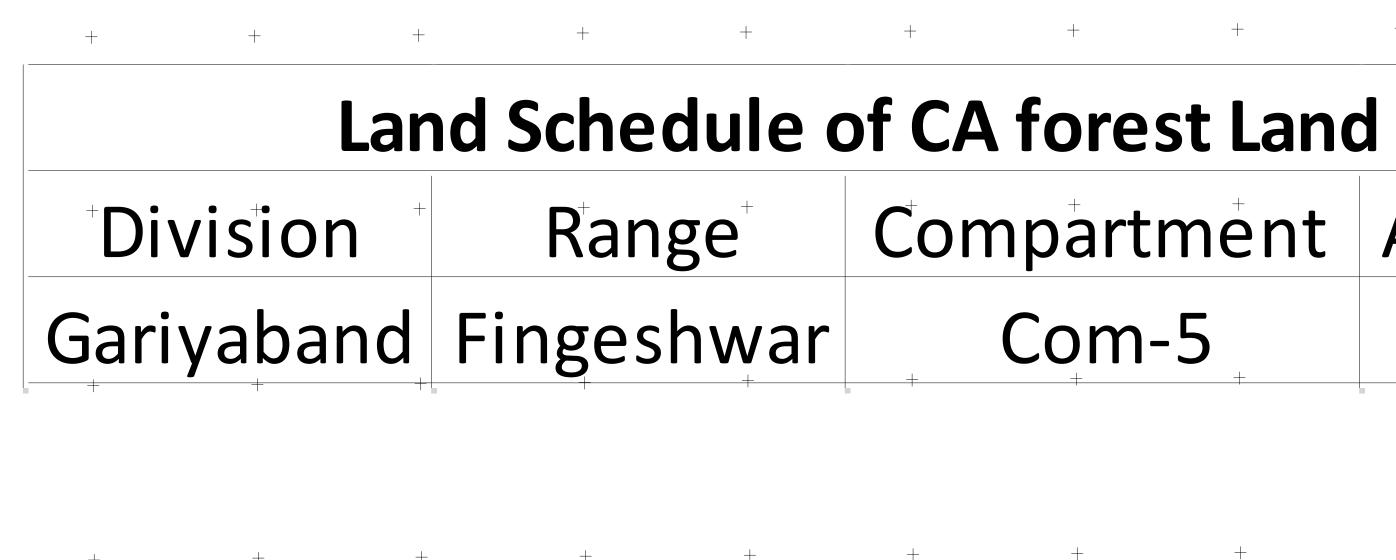
वन परिक्षेत्र अधिकारी फिंगेश्वर

अंयुवन यनमंडलाधिकारी राजिम वनमंडल गरियाबंद

Job No: 503308Page 9 of 9

Divisional Forest Officer Gariaband Division Gariaband

| | FID | | Division | Range | Compartment | Area(Ha) | Latitude(WGS84) | Longitude(WGS84) | |
|---|-----|------------|---------------------------------------|------------|-------------|---------------------|---|---|-----|
| | 0 | | <u> </u> | Fingeshwar | | 54.000 | 20° 59' 6.405" N | 82° 4' 25.201" E | + |
| + | 1 | + | , | Fingeshwar | | 54.000 | 20° 59' 7.692" N | 82° 4' 30.514" E | _ |
| | 2 | | ,
, | Fingeshwar | | 54.000 | 20° 59' 8.401" N | 82° 4' 35.275" E | - |
| | 3 | | <u>,</u> | Fingeshwar | | 54.000 | 20° 59' 9.238" N | 82° 4' 40.100" E | - |
| + | 4 | + | , | Fingeshwar | | +54.000 + | 20° 59' ⁺10.103" ℕ | 82° ⁺ 4' 44.914" E | + |
| | 5 | | , | Fingeshwar | | 54.000 | 20° 59' 12.642" N | 82° 4' 51.183" E | - |
| | 6 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 16.304" N | 82° 5' 0.040" E | _ |
| + | 7 | + | Gariyaband | Fingeshwar | Com-5 | +54.000 + | 20° 59' +18.581" N | 82°+5' 5.575"+ E | + |
| | 8 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 16.593" N | 82° 5' 6.343" E | |
| | 9 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 15.063" N | 82° 5' 7.667" E | |
| + | 10 | _ <u>_</u> | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 14.608" N | 82° ₊ 5' 8.019" ₊ E | + |
| | 11 | T | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 14.066" N | 82° 5' 8.192" E | |
| | 12 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 12.342" N | 82° 5' 8.123" E | |
| | 13 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 11.821" N | 82° 5' 8.168" E | |
| + | 14 | + | Gariyaband | Fingeshwar | Com-5 | ⁺ 54.000 | 20° 59' 11.096" N | 82° 5' 8.456" E | + |
| | 15 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 6.806" N | 82° 5' 11.811" E | - |
| | 16 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 5.985" N | 82° 5' 12.355" E | Tu |
| + | 17 | + | Gariyaband | Fingeshwar | Com-5 | +54.000 | 20° 59'+5.381" N ⁺ | 82° 5' 12.602" E | + |
| | 18 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 4.588" N | 82° 5' 12.861" E | +- |
| | 19 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 3.296" N | 82° 5' 11.857" E | - |
| + | 20 | + | Gariyaband | Fingeshwar | Com-5 | -54.000 | + 20° 59'+0.481" N+ | 82° 5' 11.382" E | + |
| | 21 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 58' 59.135" N | 82° 5' 11.385" E | |
| | 22 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 58' 59.957" N | 82° 5' 10.526" E | - |
| | 23 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 0.569" N | 82° 5' 9.803" E | + |
| + | 24 | + | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 0.897" N | 82° 5' 9.101" E | - ' |
| | 25 | | Gariyaband | Fingeshwar | Com-5 | 54.000 | 20° 59' 0.960" N | 82° 5' 8.643" E | - |
| | 26 | | | Fingeshwar | | 54.000 | 20° 59' 0.987" N | 82° 5' 7.911" E | - |
| + | 27 | + | . | Fingeshwar | | ⁺ 54.000 | ⁺ 20° 59′ ⁺ 1.183″ N ⁺ | 82° ⁺ 5' 7.035" ⁺ E | + |
| | 28 | | , | Fingeshwar | | 54.000 | 20° 59' 1.887" N | 82° 5' 5.417" E | |
| | 29 | | | Fingeshwar | | 54.000 | 20° 59' 1.333" N | 82° 5' 4.634" E | - |
| + | 30 | + | | Fingeshwar | | -54.000 | + 20° 58' 59.684" N | 82° ⁺ 5' 2.872"+E | + |
| | 31 | | | Fingeshwar | | 54.000 | 20° 58' 58.605" N | 82° 5' 1.332" E | - |
| | 32 | | | Fingeshwar | | 54.000 | 20° 58' 58.278" N | 82° 4' 58.791" E | - |
| | 33 | 1 | , | Fingeshwar | | 54.000 | + 20° 59' +1.507" N+ | 82° 4' 56.450'' ₊ E | + |
| + | 34 | Τ | | Fingeshwar | | 54.000 | 20° 59' 0.150" N | 82° 4' 44.734" E | - |
| | 35 | | | Fingeshwar | | 54.000 | 20° 58' 56.197" N | 82° 4' 34.008" E | - |
| | 36 | | , | Fingeshwar | | 54.000 | 20° 58' 58.390" N | 82° 4' 30.191" E | - |
| + | 37 | + | + | Fingeshwar | + + | 54.000 | 20° 59' 0.401" N | 82° 4' 25.740" E | + |
| | 38 | | . | Fingeshwar | | 54.000 | 20° 59' 1.574" N | 82° 4' 23.719" E | - |
| | 39 | | | Fingeshwar | | 54.000 | 20° 58' 58.694" N | 82° 4' 17.926" E | - |
| + | 40 | + | , | Fingeshwar | | 54.000 | ⁺ 20° 59' 3.051" N ⁺ | 82° 4' 13.698" E | + |
| | 41 | | , , , , , , , , , , , , , , , , , , , | Fingeshwar | | 54.000 | 20° 59' 4.744" N | 82° 4' 18.581" E | - |
| | 42 | | • | Fingeshwar | | 54.000 | 20° 59' 6.405" N | 82° 4' 25.201" E | - |
| ļ | -76 | 1 | | | | | + + + + | + + + | + |



82°0'45"E

82°1'0"E

82°1'15"E

82°1'30"E

82°0'0"E

82°0'15"E

82°0'30"E

Compartment Area(Ha) 54

+

82°2'0"E

+

+

+

82°1'45"E

+

+ +

82°2'30"E

+

+

82°2'15"E

+Coordinate System: WGS 1984 UTM Zone 44N Projection: Transverse Mercator Datum: WGS 1984 False Easting: 500,000.0000 False Northing: 0.0000 Central Meridian: 81.0000 Scale Factor: 0.9996 Latitude Of Origin: 0.0000 Units: Meter

++

+

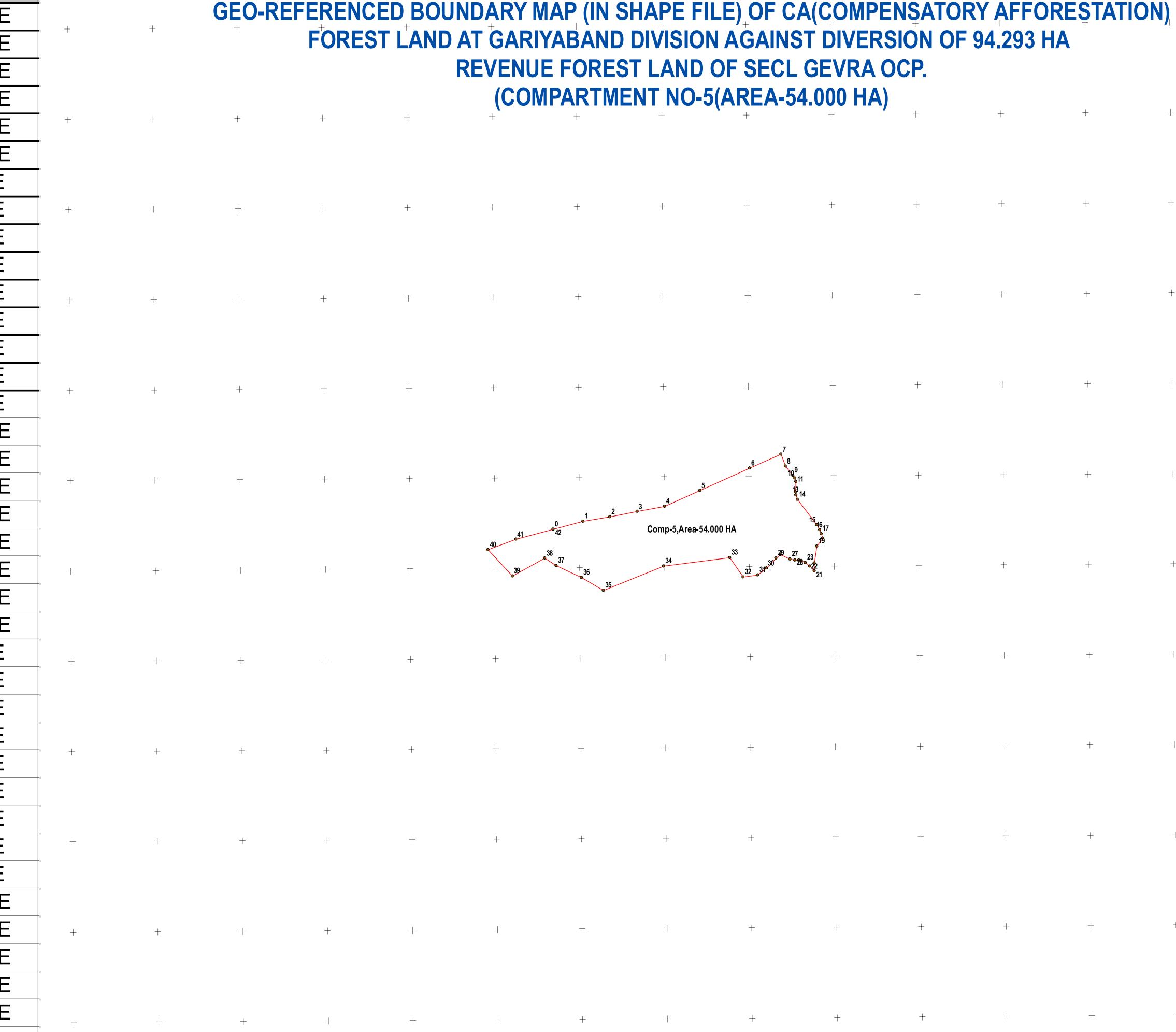
82°3'15"E

+

82°3'0"E

82°2'45"E

| 82°6'30" | 82°6'15"E | 82°6'0" E | 82°5'45"E | 82°5'30"E | 82°5'15"E | 82°5'0"E | 82°4'45"E | 82°4'30"E | 82°4'15"E | 82°4'0"E | 82°3'45"E | 82°3'30"E |
|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|-----------|-----------|
| + | + | + | + | + | + | + | + | + | + | + | + | + |
| N | | | | | | | | | | | | , I |
| IN | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |



| + + + + Customer | + | + + +
SOUTH EAS | STERN |
|--|-----------------------|--|---------|
| + Projetct + | | NCED BOUNDARY MAP (I
ISATORY AFFORESTATIO
AT GARIYABAND DIVI | N)FORES |
| Subject | | Activity | Name |
| + + +
PLAN SHOWING O
(COMPENSATORY AFFOF
FOREST LANE
COMPARTMENT N | F CA
RESTATION) | + + + + + Surveyed &Processed B | y Madhu |
| + + (AREA-54.000 H
AGAINST 94.293
REVENUE FOREST LA | A) +
HA
AND FOR | + Checked By + | Upend |
| GEVRA OCP O
GEVRA AREA(SE
+ + + | | + Approvęd + | Sudhar |
| Compdi
Cannoso A Mini Ratna Company | | | 510
 |
| Carina A Mini Ratna Company | + | + Dwg + CMPDI/RI5/ | BSP/GE(|

82°5'0"E

82°3'30"E 82°3'45"E 82°4'0"E 82°4'15"E 82°4'30"E 82°4'45"E



| EVRA O
)00 HA)
+ | + | + | + | + | + | —21°0'15"N |
|------------------------|---|---|---|---|---|---------------|
| + | + | + | + | + | + | —21°0'0"N |
| + | + | + | + | + | + | −20° 59'45"N |
| + | + | + | + | + | + | −20°59'30"N |
| + | + | + | + | + | + | −20° 59'1 5"N |
| 617
19
+
11 | + | + | + | + | + | −20°59'0"N |
| + | + | + | + | + | + | −20° 58'45"N |
| + | + | + | + | + | + | −20°58'30"N |
| + | + | + | + | + | + | −20°58'15"N |
| + | + | + | + | + | + | −20°58'0"N |
| + | + | + | + | + | + | -20° 57'45"N |

COALFIELDS LIMITED

| E FILE) OF CA
ST LAND | + + | Jøb Number
503 | +
3308 | + | −20°57'15"N |
|--------------------------|---|----------------------|------------------|------------|-------------|
| e
+ | Designation | Signature | + Date | + | -20°57'0"N |
| usudan Banik | Sr.Surveyor (C) | | | | |
| tra Pandey | + Officer Survey | + | + | + | −20°56'45"N |
| nsٍhu Mishra | Chief Manager (Mining) | + | + | + | −20°56'30"N |
| 1,020 M | 1:10,000 | Sheet | 1 | | |
| OM/2023/DC | +
SPS/90 | Rev ⁺ No. | + | + | —20°56'15"N |
| | | | 0000014 = 111 | 02°6/20.85 | |

82°6'30"I



ANNEXURES



DRAWINGS & COMPACT DISC

Job No.: 503308

STRICTLY RESTRICTED FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

GEO-REFERENCED BOUNDARY MAP

•

•

•

•

•

•

•

........

•

•

•

•

•

•

•

•

(IN SHAPE FILE) COMPENSATORT AFFORESTATION (CA) FOREST LAND (AREA-58.00 HA) GEVRA PROJECT GEVRA AREA, SECL



DECEMBER-2022



| | INDEX | |
|----------|--|------|
| Chapter | TOPIC | Page |
| 1.0 | Introduction | 1 |
| 2.0 | Background | 1-3 |
| 3.0 | Location | 3 |
| 4.0 | Scope of Services | 3 |
| 5.0 | Methodology | 3-4 |
| 6.0 | Survey Instrument | 4-5 |
| 7.0 | Details of Field Activity | 5-6 |
| 8.0 | Computation | 6 |
| 9.0 | Documents Submitted | 8-9 |
| Table | TABLES | |
|] | Geo-Referenced Boundary Map (in shape file) of Compensatory
Afforestation (CA) Forest Land (Area-58.00 Ha) for Gevra OCP,Gevra
Area,SECL | 6-8 |
| Annexure | ANNEXURES | |
| 1 | letter G-FORS/16/0003/2022-Forest, SECL HQ- SOUTH EASTERN COALFILDS
LIMITED (Computer No 753101) | |
| Drawing | DRAWINGS | |
| 1 | CMPDI/RI5/BSP/GEOM/2022/DGPS/90 | |
| CD | CD | |
| 1 | Soft copy of shape files and KML files in CD | |

Job No.: 505381

•

•

٠

•

•

•

•

•

••••



GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF COMPENSATORY AFFORESTATION (CA) FOREST LAND (AREA-59.577 HA) AT KATHGHORA DIVISION FOR GEVRA OCP, GEVRA AREA, SECL

1.0 Introduction

A proposal for DGPS survey of 58.000 hectare compensatory afforestation (CA) forest land at Katghora division has been received in CMPDIL through e-office along with details of forest land allotted by forest department duly forwarded through General Manager, Gevra Area, South Eastern Coalfields Limited (SECL) vide letter G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101). As per annual action plan for the year 2022-2023(CMPDI/RI-5/EXPL/2022-23/03 Dated 01-04-2022) DGPS survey of forest land is to be taken up by CMPDIL.

As per work order No. G-FORS/16/0003/2022-Forest,SECL HQ- SOUTH EASTERN COALFILDS LIMITED (Computer No 753101). The CA land (Area-58.00 Ha) for 94.293 Ha revenue forest land proposal of Gevra OCP has been identified at Kathghora Forest Division.

Colliery authorities identified the patch on the ground with the help of forest officials.DGPS survey has been carried out at selected ground locations identified by forest personnel as per requirement.

DGPS report containing geo-referenced boundary map and shape files in projected and geographical coordinate system is submitted herewith. A geo-referenced boundary map in 1:10000 scale and corresponding KML files are also enclosed herewith in order to facilitate SECL to apply through online application portal PARIVESH.

Soft copies of the map and shape files are given in CD for further necessary action by SECL. Relevant documents are given as annexures in this report.

The following table shows the land schedule of the proposed Compensatory Afforestation (CA) Forest Land.

| | Land Schedule of | Compensator | Afforestation | CA) Forest Land | |
|---------|------------------|-------------|---------------|-----------------|--------|
| SL. NO. | Division | Range | Comp | Area(| HA) |
| 1 | Kathghora | Pali | OA599 | 58.0 | 0 |
| | | | | Total Area | 58.000 |

2.0 Background

Electricity is a very important commodity that cannot be dispensed for the modern lifestyle of people and communities worldwide. India being a growing economy is not an exception. Electricity produced through thermal power stations meets about seventy percentage of total electricity requirement of our country. Coal plays a vital role in these thermal power stations. With growing

Job No: 503308



concern for increasing power production, the thrust is on increasing production on coal producing companies, such as SECL.

Coal demand for other industrial and domestic consumption has also increased over the years. Coal producing companies, in general, are always required to mine more coal through open cast and underground coal mines in order to meet the coal demand by thermal power stations.

Coal producing companies are left with only two options. Either they should open new coal mines or increase the capacity of existing mines. While it is not very easy to open up new coal mines, the only option left is to expand the existing mines in terms of its capacity or in terms of physical extent of the existing mine.

In most of the mining lease hold areas it is observed that the coal bearing area is falling in forest areas that has been left out for want of forestry clearance. These forest lands are categorized into the following three types:

- Reserved Forest
- Protected Forest
- Revenue Forest

In order to carry out mining activities in these forest lands, forest clearance is required to obtain from the Ministry of Environment, Forest and Climate Change (MOEFCC).

To check irrational exploitation of forest and to maintain the ecological balance, Forest Conservation Act (FRA), 1980 has been enacted. Under this act, no forest land can be used for non-forestry purpose without prior approval from the ministry.

For getting forest clearance from MOEFCC the coal producing companies are required to apply through recently updated web portal called "Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-Window Hub (PARIVESH)" which is a web based, role-based workflow application that has been developed for online submission and monitoring of proposals submitted by the proponents for seeking environment, forest, wildlife, and CRZ clearances from central state and district level authorities.

It automates the entire tracking of proposals which includes online submission of a new proposal, editing/updating the details of proposals and displays status of the proposals at each stage of the workflow.

The procedure for forest clearance envisaged under the act mandates a two-stage approval process consisting of two stages:

Stage I

Upon prima facie review the proposal is either accepted or rejected. If approved, the project authority is required to deposit an amount for compensation of the opportunity cost of the forest (NPV, compensatory afforestation, additional expenses towards mitigating probable environmental damage etc.)

Job No: 503308



Stage II

Following the deposit of above-mentioned costs, the land is handed over to the project authorities provided they have obtained all other requisite clearances.

Reserve forest boundaries are generally marked on the ground with large forest pillars while the boundaries of protected forests are marked on the ground with trenches, fencing and other markings.

As per the circular of MOEFCC, one of the pre-requisites for getting forestry clearance is a georeferenced boundary map in shape file format of the desired forest land.

3.0 Location

The salient points of CA forest land identified for this project are located at Ratija (OA599), District-Korba, Chhattisgarh.Nearest Township is Pali.

4.0 Scope of Services

The scope of services of CMPDIL to provide Geo-referenced boundary map (in shape files and pdf format), converted geographical coordinates of forest boundary after making DGPS observation at salient points and KML files etc.

5.0 Methodology

Static DGPS (Differential Global Positioning System) survey is appropriate for determining geographical co-ordinates of forest boundary.

The Global Positioning System (GPS) is a satellite-based location, timing and navigation system in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. Presently, 30 orbiting satellites of GPS constellation of USA and 24 GLONASS (*Globalnaya navigatsionnaya sputnikovaya sistema* or Global Navigation Satellite System) satellites of Russia are operational for the purpose of GPS survey.

In addition to these primary GPS constellation, European space agency and Chinese have their own constellation such as Galileo and BeiDou respectively.

India's prestigious GAGAN (GPS Aided Geo Augmented Navigation (GAGAN) system) navigation system is also presently operational providing vital positional information to civil aviation and other industries.

The Global Positioning System is a system of communication made up of three independent aspects such as:

GPS satellites orbiting the Earth;

Job No: 503308

Page 3 of 9



- Control and monitoring stations on Earth;
- GPS receivers owned by users.

GPS satellites transmit the satellites number, its position in space, and the exact time. These informations are sent through the transmitted signals at regular intervals by all the satellites are all times.

These signals are picked up by various types of GPS receivers on ground. With signals from three or more satellites, a GPS receiver can triangulate its location on the ground (i.e., longitude and latitude) from the known position of the satellites. With four or more satellites, a GPS receiver can determine a 3D position (i.e., latitude, longitude, and ellipsoidal height).Differential Global Positioning System (DGPS) refers to using two or more GPS receivers to achieve greater positional accuracy. There are three basic methods of doing DGPS survey.

- Static
- Rapid-Static
- Real-time Kinematic (RTK).

For doing DGPS survey of forest land, post-processed static survey is found to be most suitable where one GPS receiver is used as base station and other GPS receivers are used as rover stations. Base receiver is stationed at a point of known co-ordinates for longer duration and rover stations are kept at unknown stations for comparatively shorter duration. DGPS observation is done in each rover stations for compensatory afforestation.

Data from base and rovers are downloaded and then post-processed in GPS data processing software, Leica infinity to achieve sub-centimeter level accuracies.

ArcGIS 10.2 version software is used for preparation of shape files, KML file and geo-referenced map of the forest land in WGS-84 co-ordinates.

6.0 Survey Instrument

For providing geographical (spherical) co-ordinates of the stations along the boundary, Differential Global Positioning System (DGPS) consisting of one base receiver and a rover receiver were used. CMPDIL has the latest hardware and software of Leica make DGPS instrument which has dual-frequency GPS signal receivers that provide accurate results after post processing in relevant software. Brief specifications of DGPS are provided in the table below.



| Α | DGPS Instrument: | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|
| | Make | Leica | | | | | | | | | |
| | Model | GS25 & GS16 | | | | | | | | | |
| | Signal | GPS: L1, L2&L5 carrier, CA, L1P, L2P, L2C | | | | | | | | | |
| | Make
Model
Signal
Channels
Accuracy: | GLONASS: L1, L2&L5 carrier, L1CA, L2CA, L1P, L2F | | | | | | | | | |
| | | GALILEO: E2-L1-E1, E5, E6 | | | | | | | | | |
| | Channels | 72 | | | | | | | | | |
| | Accuracy: | sub-centimeter | | | | | | | | | |
| | Post Processed Static DGPS | 3mm +0.5ppm horizontal, 5mm + 0.5ppm vertical | | | | | | | | | |
| | Real Time RTK | 10mm + 1 ppm horizontal, 15mm + 1 ppm vertical | | | | | | | | | |
| | Power: | | | | | | | | | | |
| | Internal Battery | 2 Li-lon, 3900mAh, 7.2V | | | | | | | | | |
| | Communication: | | | | | | | | | | |
| | Bluetooth | Bluetooth standard 1.2 | | | | | | | | | |
| | USB | 1.1 Version | | | | | | | | | |
| В | DGPS Software | Inbuilt Leica software for data recording | | | | | | | | | |
| | | Leica infinity for data processing | | | | | | | | | |

7.0 Details of Field Activity

•

•

•

•

•

•

•

۲

•

•

•

•

•

••••••

•

•

•

DGPS survey has been carried out in ground locations identified by forest authorities in the presence of Gevra colliery authority. The following table Showing Details of DGPS Survey Point (WGS84).

| Point_Id | Instrument | Latitude(wgs84) | Longitude(wgs84) |
|----------|------------|-------------------|-------------------|
| B1 | DGPS | 22° 18' 36.332" N | 82° 29' 5.994" E |
| B2 | DGPS | 22° 18' 34.671" N | 82° 29' 5.375" E |
| B4 | DGPS | 22° 18' 30.540" N | 82° 28' 57.513" E |
| B5 | DGPS | 22° 18' 34.407" N | 82° 28' 56.637" E |
| B6 | DGPS | 22° 18' 36.506" N | 82° 28' 57.005" E |
| B7 | DGPS | 22° 18' 43.449" N | 82° 28' 56.091" E |
| B8 | DGPS | 22° 18' 43.385" N | 82° 28' 55.080" E |
| B9 | DGPS | 22° 18' 32.072" N | 82° 29' 3.697" E |
| B10 | DGPS | 22° 18' 35.055" N | 82° 29' 2.895" E |
| B11 | DGPS | 22° 18' 33.472" N | 82° 29' 8.280" E |
| B12 | DGPS | 22° 18' 36.833" N | 82° 29' 10.234" E |
| B13 | DGPS | 22° 18' 30.837" N | 82° 29' 2.173" E |
| B14 | DGPS | 22° 18' 36.392" N | 82° 28' 55.701" E |
| B15 | DGPS | 22° 18' 34.942" N | 82° 28' 55.344" E |
| B16 | DGPS | 22° 18' 32.966" N | 82° 28' 52.705" E |
| B17 | DGPS | 22° 18' 31.998" N | 82° 28' 49.026" E |
| B18 | DGPS | 22° 18' 31.763" N | 82° 28' 48.195" E |
| B19 | DGPS | 22° 18' 34.010" N | 82° 28' 47.147" E |
| B20 | DGPS | 22° 18' 31.645" N | 82° 28' 47.530" E |

Job No: 503308

Page 5 of 9



| B21 | DGPS | 22° 18' 36.297" N | 82° 28' 47.266" E |
|-----|------|-------------------|-------------------|
| B22 | DGPS | 22° 18' 38.508" N | 82° 28' 48.088" E |
| B23 | DGPS | 22° 18' 40.348" N | 82° 28' 46.387" E |
| B24 | DGPS | 22° 18' 44.612" N | 82° 28' 46.171" E |
| B25 | DGPS | 22° 18' 44.799" N | 82° 28' 45.357" E |
| B26 | DGPS | 22° 18' 42.531" N | 82° 28' 43.577" E |
| B27 | DGPS | 22° 18' 42.825" N | 82° 28' 42.035" E |
| B28 | DGPS | 22° 18' 38.441" N | 82° 28' 39.548" E |
| B29 | DGPS | 22° 18' 38.531" N | 82° 28' 37.622" E |
| B30 | DGPS | 22° 18' 35.365" N | 82° 28' 36.470" E |
| B31 | DGPS | 22° 18' 33.610" N | 82° 28' 32.021" E |
| B32 | DGPS | 22° 18' 36.696" N | 82° 28' 28.531" E |
| B33 | DGPS | 22° 18' 47.373" N | 82° 28' 30.251" E |
| B34 | DGPS | 22° 18' 49.011" N | 82° 28' 28.780" E |
| B35 | DGPS | 22° 18' 41.508" N | 82° 28' 25.660" E |
| B36 | DGPS | 22° 18' 42.257" N | 82° 28' 22.538" E |
| B37 | DGPS | 22° 18' 47.418" N | 82° 28' 15.544" E |
| B38 | DGPS | 22° 18' 48.854" N | 82° 28' 16.181" E |
| B39 | DGPS | 22° 18' 52.812" N | 82° 28' 21.166" E |
| B40 | DGPS | 22° 18' 53.246" N | 82° 28' 19.600" E |
| B41 | DGPS | 22° 18' 54.860" N | 82° 28' 19.185" E |
| B42 | DGPS | 22° 18' 57.349" N | 82° 28' 29.301" E |
| B43 | DGPS | 22° 18' 59.077" N | 82° 28' 30.188" E |
| B44 | DGPS | 22° 18' 59.438" N | 82° 28' 33.124" E |
| B45 | DGPS | 22° 18' 56.323" N | 82° 28' 37.046" E |
| B46 | DGPS | 22° 18' 54.586" N | 82° 28' 50.750" E |
| B47 | DGPS | 22° 18' 47.778" N | 82° 28' 58.590" E |
| P1 | DGPS | 22° 18' 32.889" N | 82° 29' 7.241" E |
| P2 | DGPS | 22° 18' 34.080" N | 82° 29' 5.785" E |
| P3 | DGPS | 22° 18' 36.317" N | 82° 29' 8.049" E |

8.0 Computation

•

۲

•

Data recorded is downloaded from both rover and base receivers of DGPS and processed in Leica infinity software to get post-processed WGS-84 co-ordinates. The geographical co-ordinates of the forest land (CA) are tabulated below.

TABLE-I GEOGRAPHICAL COORDINATES (WGS-84) 58.000 HA FOREST LAND (CA) GEVRA OCP, GEVRA AREA, SECL

| FID | area | Comp | Division | Range | Latitude | Longitude |
|-----|-------------|-------|-----------|-------|-----------------|------------------|
| | | | | | 22° 18' 36.522" | |
| 0 | 58.00042319 | OA599 | Khatghora | Pali | Ν | 82° 29' 6.020" E |

Job No: 503308

Page 6 of 9



| 1 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 34.857"
N | 82° 29' 2.775" E |
|----------|----------------------------|----------------|------------------------|--------------|----------------------|----------------------|
| 2 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 30.601"
N | 82° 29' 2.171" E |
| 3 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 30.429"
N | 82° 28' 57.606"
E |
| 4 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 36.382"
N | 82° 28' 57.664"
E |
| 5 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 44.015"
N | 82° 28' 56.739"
E |
| 6 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 43.764"
N | 82° 28' 54.500"
E |
| 7 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 36.233"
N | 82° 28' 55.096"
E |
| 8 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 34.842"
N | 82° 28' 54.587"
E |
| 9 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 32.966"
N | 82° 28' 52.705"
E |
| 10 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 32.063"
N | 82° 28' 47.266"
E |
| 11 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 40.360"
N | 82° 28' 48.183"
E |
| 12 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 44.846"
N | 82° 28' 46.615"
E |
| 13 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 44.892"
N | 82° 28' 45.414"
E |
| 14 | 58.00042319 | OA599 | Khatghora | Pali | 22° 18' 42.980"
N | 82° 28' 41.934"
E |
| 14 | 58.00042319 | OA599 | | Pali | 22° 18' 42.431"
N | 82° 28' 40.996"
E |
| | | | Khatghora | | 22° 18' 37.403" | 82° 28' 35.095" |
| 16 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 35.147" | E
82° 28' 33.035" |
| 17 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 35.301" | E
82° 28' 30.781" |
| 18 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 36.696" | E
82° 28' 28.899" |
| 19 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 47.875" | E
82° 28' 31.419" |
| 20 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 48.822" | E
82° 28' 28.553" |
| 21 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 42.848" | E
82° 28' 25.671" |
| 22 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 42.144" | E
82° 28' 23.382" |
| 23 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 43.062" | E
82° 28' 22.697" |
| 24 | 58.00042319 | OA599 | Khatghora | Pali | N
22° 18' 43.702" | E
82° 28' 22.319" |
| 25
26 | 58.00042319
58.00042319 | OA599
OA599 | Khatghora
Khatghora | Pali
Pali | N
22° 18' 47.482" | E
82° 28' 23.516" |

Job No: 503308

•

۲

•

•

•

•

۲

•

•

•

•

•

•

•

•••••

•

•

•

Page 7 of 9



| | | | | | N | E |
|----|---------------|----------------|-----------|-------|-----------------|-----------------|
| | | | | | 22° 18' 48.270" | 82° 28' 21.203' |
| 27 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 44.194" | 82° 28' 20.156' |
| 28 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 45.054" | 82° 28' 18.003' |
| 29 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 45.442" | 82° 28' 16.920' |
| 30 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 46.028" | 82° 28' 16.239 |
| 31 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 46.562" | 82° 28' 16.059 |
| 32 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 47.892" | 82° 28' 15.915' |
| 33 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 48.568" | 82° 28' 18.100 |
| 34 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 49.748" | 82° 28' 18.750 |
| 35 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 50.771" | 82° 28' 20.051 |
| 36 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| - | | | | | 22° 18' 52.909" | 82° 28' 22.467 |
| 37 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 55.242" | 82° 28' 25.474 |
| 38 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | 1.025 00000000 | 5.500 | | 22° 18' 56.446" | 82° 28' 28.011 |
| 39 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 57.030" | 82° 28' 29.451 |
| 40 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 58.573" | 82° 28' 30.345 |
| 41 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | | 22° 18' 58.984" | 82° 28' 33.223 |
| 42 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | | | _ | 22° 18' 56.025" | 82° 28' 37.048 |
| 43 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | | 0.000 | 10.1.1 | D. II | 22° 18' 55.565" | 82° 28' 38.589 |
| 44 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| | 50.000.000.00 | 04500 | 16 at 1 | Dett | 22° 18' 54.350" | 82° 28' 50.747 |
| 45 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| 10 | 50.00040040 | 04500 | Khatabar | Dell | 22° 18' 49.612" | 82° 28' 55.847 |
| 46 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| 47 | 50.00040040 | 04500 | Khatshar | Dell | 22° 18' 47.541" | 82° 28' 58.588 |
| 47 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| 10 | 50.000.000.00 | 04500 | Khat | Dell | 22° 18' 36.597" | 82° 29' 10.232 |
| 48 | 58.00042319 | OA599 | Khatghora | Pali | N | E |
| 10 | 50.000.000.0 | 04500 | Khatalaa | Dell | 22° 18' 36.522" | 000 001 0 0001 |
| 49 | 58.00042319 | OA599 | Khatghora | Pali | N | 82° 29' 6.020" |

9.0 Documents Submitted

Job No: 503308

۲

۲

۲

•

۲

•

•

•

•

•

•

•

•

•

•

.....

•



- Drawing Number: CMPDI/RI5/BSP/GEOM/2022/DGPS/89
- Soft copy of shape files & KML files in CD.

DISCLAIMER:

- 1. DGPS REPORT IS BASED ON SURVEY DATA.
- 2. DGPS REPORT IS FOR FOREST LAND (CA) APPLICATION ONLY & NOT VALID FOR ANY OTHER PURPOSE
- 3. CMPDIL IS NOT RESPONSIBLE FOR ANY FUTURE DISPUTE WITH RESPECT TO FOREST LAND DETAILS.

0 General Manager

General Manager एस.ई.सी.एल., गेवरा क्षेत्र SECL, Gevra Area

mil 20

मोडल ऑफॉसर (पर्यावरण/वन) Nodal Officar (ENV/Forest) SECL/Gavra Area एस.ई.सी.एस./ नेवस क्षेत्र



उप वनम नाधकारी

पाली, जिला-योद्रेख (छ.ग.)

वनमण्डलाधिकारी कटघोरा वनमण्डल, कटघोरा

Page 9 of 9

| Г | | 14.3.9 | 61.2 | 6 | | | | _ | Na | 0.6 | FOU | 6 | | | | _ | _ | N. | | 181 | 060 | 6 | - | - | | _ | - | Nu | 02. | 81. | 22 | 11 | | | _ | - | | N. | 1 | 810 | 22 | _ | _ | | | | NU. | 5.18 | .6 |
|---|---|--|--|-------------------|-------------------|-------------------|---------------|--|-------------|-------------------|-------------------|----------------|-------------------|---------------|----------------------------|-------------------|-------------|---------------|--------------------|--|-------------|-------------------|--------------------|------------|-------------------|------------|-------------------|------------------|-------------------|----------------|-------------------|-------------------|-------------------|-------------------|------------|-------------------|-------------------|-----------------|----------------------------------|-------------------|---|----------------|-----------------------------|---|-------------------|--------------------|-----------------|------------------------------|----|
| | z- | | < | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | a | 503308 | Date | | Ĩ | | | - | 0 |] |
| | | | 14 | | | | | | | 4 | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | ITED | Job Number | 503 | Signature | | | | | Sheet | RevNo. | |
| | ATION) | | | | | | | | | | | | | | | | | | | 1 | | | | | 48 | | | | | | | | | | | | | | S LIN | 5 | | Designation | Surveyor (M) | | (W) Jo Kawing | Chief Manager | 1:10,000 | 65.30 | |
| | OREST | | | | | | | | | | | | | | | | | | | | | | / | / | 1 | 43 | | | | | | | | | | | | | SOUTH EASTERN COALFIELDS LIMITED | APE FILE) OI | (COMPENSATORY AFFORESTATION)FOREST LAND
AT KATGHORA (XVISION | Desi | | | | Matra Chief | 220 M | CMPDI/RESE/GEOM/2023/DGPS-90 | |
| 0 | RY AFF | 007-40 | | | | | | | | | | | | | | | | | | | / | / | | | | 1 | _ | _ | N. | | | | | | | | | | COAL | MAP (IN SH | A DVISION | Name | Sriker Paul | | Pradip Das | Sudhanshu Mistra | 911 55 | MRISBSP/GI | |
| | VSATO! | CP. | (A | | | | | | | t | | | | | | | ., | 1 | / | 4 | | | | | 4 | | | | 3 | ŧ | | | | | | | | | TERN | BOUNDARY | RY AFFORE
I KATGHOR | Activity | Surunum | a formation | Surveyed | Approved | Scale 0 | Dwg CMPE | |
| | OMPEN | VRA O | 1000 H | | | | | | | | | | | | 1 | 46 | / | | | 6 5 | E | _ | _ | _ | 7 | 2 | | | | | | | | | | | | | HEAS | FERENCED | OMPENSATO | | ESTATION) | 04599 | HA DR | | | | |
| | F CA(C | CL GE | REA-58 | | | | | | | | | | 45 | 1 | / | | | | | | | | | | | | 5 | | | | | | | | | | | | SOUT | CEO-RE | 22 | | COMPENSATORY AFF ORESTATION | FOREST LAND
COMPARTMENT NO-0A599
(A SEA - 58 000 HAI) | AGAINST 94.293 HA | GEVRA OCP OF | | In the Same | |
| | FILE) O | IS JO 0 | A599(A | | | | | | | ł | 2 | | | | HA | 5 | | | 1240 | | / | - | • | | | - | - | 2 | | t | | | | | | | | | Gustomer | Project | | Subject | COMPENSAT | COMPAR | AGA | CEVER CEVER | | A Inter | |
| | SHAPE | ST LAN | T NO-O | | | | | | | | | | | | 58 000 | 20000 | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| | GEO-REFERENCED BOUNDARY MAP (IN SHAPE FILE) OF CA(COMPENSATORY AFFORESTATION) | REVENUE FOREST LAND OF SECL GEVRA OCP. | (COMPARTMENT NO-OA599(AREA-58.000 HA) | | | | | | | | | 43 | # | | Ccmp-OA 500 Araa-58 000 HA | non l'an | | | | | | 1 | | 100 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| | ARY M | VENUE | OMPAF | | | | | | | | - | / | | | DA50 | | UC | - | | | | | | | | 19 | | | | | | | | | | | | | | | | | | | | | | | |
| | UND | RE | 0 | | | | | | | + | 4 | 39.40 | 1 | | mou | 5 | N. | _ | | + | | - | - | - | 61 | 1 | | | | + | | | | | | | | | 4 | | | | | | | | | ł | |
| | NCED | VE91 P | | | | | | | | | | | See. | 37 | | | 1 | 97 | _ | 25 | 24 22 | 52 | | | | | | | | | | | | | | | | | | | | | | | | S 1984 | | | |
| | EFERE | 2 | | | | | | | | | | | | | 00 | 38 | 84 2 | 1 | 20 | 30 28 | | | | | | | | | | | | | | | | | | | | | | | | | | GCS WGS 1984 | | | |
| | GEO-R | 1 | +- | | | | | | | Ŧ | - | | | | | | 22 | 32 | 10 | + | | | | | | | | | ł | F | | | | | | | | | 4 | 1 | | | | | | | S 1984 | 9 | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Coordinate System: | Datum: WGS 1984 | Units: Degree | |
| | 5S84) | u u | ш ш | LU LU | | ш
Б | | ц ц | ш | ш | | u u | | L
L | а.
Ш | u
b | | | | | u u | J Lu | ш. | 3" E |)" E | ш. | | | u u | | | ш
Ц | ш | н. | ш | ш | | | | u
m | ш | ш. | ſ | | ŀ | - | | | |
| | Longitude(WGS84)
82° 29' 6.020" E | 82° 29' 2.171" E
82° 29' 2.171" E | 82° 28' 57.606" E
82° 28' 57.664" E | 82° 28' 56.739" E | 82° 28' 55.096" F | 82° 28' 54.587" E | 28' 52.705" E | 82" 28' 41.266" E
82° 28' 48 183" E | 28' 46.61 | 82° 28' 45.414" E | 82° 28' 41.934" E | 82 28 40.996 E | 82° 28' 33.035" E | 28' 30.781" E | 82° 28' 28.899" E | 82° 28' 31.419" E | 28' 28.55 | 79.22.87 | 82° 28' 23.382" E | 82° 28' 22.697" E | 28' 23 516" | 28' 21.203" E | 82° 28' 20.156" E | 28' 18.003 | 82° 28' 16.920" E | 28' 16.239 | 82° 28' 16.059" E | 82° 28 15.915 E | 82° 28' 18 750" E | 28' 20 051" | 82° 28' 22.467" E | 82° 28' 25.474" E | 82° 28' 28.011" E | 82° 28' 29.451" E | 28' 30.345 | 82° 28' 33.223" E | 82° 28' 37.048" E | 32, 28 38,384 E | 87" 28' 55 847" F | 82° 28' 58.588" E | 29' 10.232" | 82° 29' 6.020" | | - | | Area(Ha) | ER DOO | | |
| | | _ | | ++ | + | + + | - | - | - | | + | + | - | 82° | - | - | -+ | -+- | - | - | + | 82° | 82° | 1 | | con l | - | - | | 82° | + | - | + | | - | | -+- | + | + | | | | | Lanc | | - | | - | |
| | Latitude (WGS84)
22° 18' 36.522" N | 22° 18' 34.857" N
22° 18' 30.601" N | 22° 18' 30.429" N
22° 18' 36.382" N | 22° 18' 44.015" N | 18'36.233" N | 18' 34.842" N | 18' 32.966" N | 22" 18" 32.063" N
22" 18' 40 360" N | 18' 44.846" | 18' 44.892" N | 18' 42.980" N | ZZ 18 42.431 N | 18' 35.147" N | 18' 35.301" N | 22° 18' 36.696" N | 22° 18' 47.875" N | 18' 48.822" | 18' 42.848' N | 22° 18' 42. 144" N | 22° 18' 43.062" N
22° 18' 43.062" N | 18' 47 487" | 22° 18' 48.270" N | 22° 18' 44. 194" N | 45.054" | 22° 18' 45.442" N | 46.028" | 18' 46.562" N | N 22 18 41.692 N | N 000.04 01 72 | 22 10 43.140 N | 22° 18' 52.909" N | 22° 18' 55.242" N | 18' 56.446" N | ° 18' 57.030" N | . 58.573" | 22° 18' 58.984" N | 22° 18' 56.025" N | N 000.00 81 | N "C13 04.330 N | 22° 18' 47.541" N | 18' 36.597" N | 18' 36.522" | | Schedule CA Forest Land | | Compartment | 0 | | |
| | | - | | 22° | 220 | 22° | - | + | + | 22° | 22° | 27 | 32° | 22° | 22° | - | 22° | + | + | - | + | + | 1 | 1 | 1 1 | | 22 | + | - | 220 | + | + | 22 | 22 | 22 | | 22 | 270 | + | 22° 18 | + | 22° | | A Fo | | oarti | | | |
| | Compartment Area(Ha)
0A599 58.000 | 58.000 | 58.000 | 58.000 | 58,000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 28.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58,000 | 58.000 | 58.000 | 58.000 | 20.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 26.000 | 28.000 | 20,000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 58.000 | 28.000 | 20.000 | 58.000 | 58.000 | 58.000 | | le C | | E o D | | 1 | |
| | npartment
OA599 | 0A599
0A599 | OA599
OA599 | 0A599 | OA599 | 0A599 | OA599 | OA599 | A599 | 0A599 | 0A599 | CA500 | 0A599 | 0A599 | OA599 | OA599 | 0A599 | 4599 | 0A599 | 0A599 | 0 500 | OA599 | 0A599 | 0A599 | 0A599 | OA599 | 0A599 | CASSO | CASOO | OA599 | 0A599 | 0A599 | OA599 | OA599 | OA599 | 0A599 | 0A599 | UA589 | 04500 | 0A599 | 0A599 | 0A599 | | nedu | | | | | |
| | je Comp | | | | | | | - | | | | | | | | _ | - | - | | - | + | | | | | | _ | - | + | + | - | \downarrow | | | | | + | + | | - | - | Ц | | 1 Sch | | Range | iled | - | |
| | L. | ora Pali
ora Pali | ora Pali | | ora Pali | | _ | Ora Pali | + | | | Ind Pall | | | | - | ora Pali | - | _ | ora Pali | - | _ | - | - | | | - | _ | iled mo | | - | - | + | | _ | | - | _ | In Pali | _ | | | | Land | | ion | c.u.c | | |
| | FID Division
0 Khatghora | 1 Khatghora
2 Khatghora | 3 Khatghora
4 Khatghora | | 5 Khatohora | | | 10 Khatghora | - | - | | 15 Khatghora | Khatchora | 18 Khatghora | 19 Khatghora | 20 Khatghora | - | | | 24 Khatghora | 25 Khatchom | | | | | | | 33 Khatghora | | 35 Khatohora | | | | 40 Khatghora | | | _ | 44 Khatghora | 45 Khatchora | | | 49 Khatghora | | | | Division | Khatahora | Idibi | |



ANNEXURES

Job No.: 503308

•

0

•

0

•

•

•

•

•

•

•

•

•

•

•

•

•



DRAWINGS & COMPACT DISC

Job No.: 503308

•

•

•

•

•

•

•

•

•

•