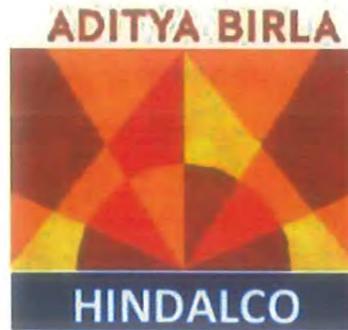


M/s Hindalco Industries Limited (HIL)



**DGPS Survey report of Gare Palma IV/5 Coal Mine
(Block Area: 797.655 Hectares)**

**Survey & Demarcation of Forest Boundary in GP IV/5
Total Forest Area is 319.730 Hectares**



August 2019



**DGPS SURVEY AND GIS MAPPING DONE BY:
Geotrax International Services
Raipur, Chhattisgarh.**

Page 1 of 42


Dipankar Khan
Authorised Person
Gare Palma IV/5 Coal Mine
Hindalco Industries Ltd.

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1. Introduction and Background

1.1 Background- Coal Block Allocation and Transfer of lease

Gare Palma IV/5 Coal Mine has been vested with M/s Hindalco Industries Ltd. with effect from 1st April 2015 vide Vesting Order No. 104/13/2015/NA dated 23rd March 2015. As per the vesting order, coal from this mine is used only for captive consumption in the captive power plant of Aditya Alumina projects at Lapanga and Hindalco complex, HiraKud, Odisha

Ministry of Environment and Forests, Govt. Of India vide their letter No F.No.8-69/1998-FC to M/s Hindalco Industries Limited accorded transfer of approval granted by the Ministry vide its letters of even number dated 11.8.2000 under the Forest (Conservation) Act, 1980 in respect of diversion of 340.60 Ha of forest land for underground coal mining in Gare Palma IV/5 coal mine in Raigarh District in the state of Chhattisgarh from the prior allottee i.e., M/s Monnet Ispat Limited in whose favor the coal mine was -previously allotted by the Ministry of Coal.

As per the notice issued from the office of Nominated Authority, Government of India, Ministry of Coal, New Delhi vide F.No. 104/28/2015/NA dated 13.10.2015 the coordinates of coal block has been revised by CMPDIL, Ranchi and the block boundary has been demarcated accordingly vide CMPDIL letter No.CMPDI/BD/C(886-A)/E-175692/I-4079 dated 03.07.2018. The total area has been revised as mentioned below:

Type of Land (Ha)	Revised Area
Block Area	797.655
Forest Land	319.730

1.2 GP IV/5 Coal Mine – Proposal for land use change

1.2.1 Introduction

Gare Palma IV/5 coal mine (GP IV/5), located in Tamnar Tehsil of Raigarh District of Chattisgarh, was allocated vide e-auction conducted under Coal Mines Special Provisions Act 2015 to Hindalco Industries Limited vide Vesting Order dated 23rd March 2015. It is an underground mine with a peak rated capacity of 1.1 MTPA as per last approved Mining Plan, though the existing EC limits the production capacity to 1 MTPA only. The mine supplies coal to Captive Power Plants at Aditya & HiraKud

in Sambalpur district of Odisha. The mine became operational in April 2016 after e-auction and have produced the peak rated capacity of 1 MTPA in FY 16-17.

1.2.2 Strategic Initiative

As a logical first step for scientific development of mineral deposit, Hindalco had carried out exhaustive systematic exploration and geological modelling to know the resources fully. The results of exploration have been encouraging wherein the total known reserves have increased by 60%. Additional coal seams were found which were not known at the time of acquisition. The reserves have been tabulated below-

Geological Reserve (MT)		
Unit	At The Time of Acquisition	Post Exploration
GP IV/5	89	143

After exploration & geological modelling, an exercise has been carried out in association with industry experts and international agencies so as to arrive at best method to exploit the mineral wealth. The study reveals that continuing with the underground method will not allow any additional coal to be mined despite the increase of geological reserves by about 60 %. However, if the mine is converted to opencast, the mineable reserves will increase by 3.4 times i.e. from 27.6 MT to 93 MT, which is a quantum jump in reserves wherein we get the control of 3.4 times of mineable reserve from the same allotted area.

Mine	Geological Reserves	Mineable Reserves (Current Method) (As on March 21)			Mineable Reserves (Post conversion) (As on March 21)		
		OC	UG	Total	OC	UG	Total
GP IV/5	143	-	27.6	27.6	93	-	93

1.2.3 Present v/s Proposed operation

Mining operation at GP IV/5 Coal Mine is by underground only with working in two seams. Underground workings have been done by conventional method of drilling and blasting, which leaves negligible scope for mechanisation. Development of Seam II is completed & going forward extraction of coal from Seam II is possible only through depillaring. The process of depillaring has also been started from 2017. The present approved mining plan allows us to go for depillaring by partial extraction method. Partial extraction method of pillar extraction is presently banned by DGMS, Government of India, who grants permission for methods of coal extraction.

Moreover, even with this method the total percentage of coal extraction will be very less and it would not last for the entire mining lease period.

Depillaring with stowing, which includes filling of voids by sand after coal extraction, not only adds cost to production but also slows down the rate of extraction because of addition of one more cycle of activity i.e. filling of voids. Because of slow rate of extraction, it is not possible to adhere to the annual capacity on year on year basis, making the project unviable.

Taking all above factors into account the most suitable method for going forward is conversion of underground workings into opencast which is techno-economically viable. This conversion will not only enhance the percentage of extraction but also will enable us to achieve the desired level of production on year on year basis. This will also ensure consistent flow of revenues to the state exchequer. Any upside potential of increasing the capacity will further increase the revenue contribution to the state.

A comparative table for flow of revenue to state exchequer is given below for current mining method & conversion to opencast.

Table: Revenue Flow to State Exchequer of GP IV/5

Financial Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Current Method									
Production	1.00	0.68	0.54	0.65	0.55	0.55	0.55	0.55	0.55
Revenue to Exchequer	463	355	287	316	268	268	268	268	268
Conversion to Opencast									
Production							1.10	1.10	1.10
Revenue to Exchequer							523	523	523

1.2.4 Alternative Explored

The only alternative available is to continue with the present method. As explained above with the current method of operation the rate of production will decrease year on year with reducing revenue flow. Continuing with this method will make this mine unviable as the economics and the rate of production will not remain sustainable. As the mine acts as a lifeline by providing direct & indirect employment to the surrounding area, the hindrance in operation of the mine with the current method of

working will have a negative socio-economic impact also. Hence, there is no alternative except to change the method of mining & convert to opencast method.

1.2.5 Conclusion

Looking at the above advantages of the proposed change in method of operation, it is proposed to convert the underground operations at Gare Palma IV/5 Coal Mine into opencast with an annual capacity, of 1.1 MTPA, which will also ensure safe working condition and better operational management as there is no other suitable alternative for the sustainability of the mine.

1.3 GP IV/5 Coal Block – Re-diversion of Forest land

Ministry of Environment and Forests, Govt. of India vide their circular No.F.No.-11-9/98-FC, dated 08-07-2011 have stipulated that to ensure accurate delineation of forest area proposed to be diverted for non-forestry purposes under Section-2 of Forest Conservation Act, 1980 the diversion proposal under Forest Conservation Act shall be accompanied by DGPS/ETS surveyed reports of the forest land proposed for diversion as per guidelines laid down in the circular issued by ministry of forest and environment, Government of India from time to time.

While submitting proposal for diversion of forest land for non-forest purpose, the user agency has to submit the Georeferenced boundary, using DGPS in shape file containing maps along with hard copy authenticated by Divisional Forest Officer (DFO) concerned.

The conventional methods of survey to delineate and demarcate the forest land with reference to the earlier Cadastral/Forest Compartment/compartment base map are time consuming. Further, the conventional surveys are "Unprojected" Surveys, hence linking them to geospatial domain is a challenging task.

The modern survey technique using Differential Global Positioning System (DGPS) with Georeferenced high resolution satellite image bring efficacy in survey in shorter time span compared to old method of survey and record preparation. High-resolution space-borne remote sensing image data show a high level of detail and provide many opportunities to be used as base for Cadastral/Forest Compartment map generation.

The combination of GIS and GPS activities play a crucial role in developing the survey of the forest boundary points and making forest Cadastral/Forest Compartment maps. Area, length other measures in the GIS numerical database are considerably easy to compute and correlate with already available data with line department.

Geotrax is empanelled for DGPS Survey and mapping by Chhattisgarh Council of Science and Technology (CGCOST), Raipur, Chhattisgarh.

1.4 Coal Block salient features

1	Location	Mand Raigarh Coal Field, Raigarh District
2	Area of Block	As per CMPDI revised Block Boundary area of the coal block as is 797.655 Ha. Out of which 319.730 Ha is forest Land (approx. 316.246 Ha. is protected forest and reserved forest and approx. 3.484 Ha is revenue forest), 113.135 Ha is Government Land, 261.089 Ha is Tribal Pvt. Land and 103.701 Ha is Non-Tribal Private Land.
4	Re-Diversion of Forest Land	M/s HIL has to obtain clearance of re-diversion of forest land from all statutory authorities. The one of activities for compliance under FC Act 1980 is DGPS survey and submission of Geo-referenced map
5	Villages fall under GP IV/5 Coal Block	1. Banjikhhol 2. Lamdarha 3. Konkel 4. Milupara 5.Sarasmal

1.5 Location of Coal Block

The Gare Palma IV/5 Mine , bounded by Latitude 22°08'21.975"N & 22° 10'42.92"N and Longitude 83°30'13.268." "E & 83°32'39.482"E, is located in the North-Eastern part of Mand - Raigarh Coalfield covering an area of 8.85 Sq.km. It is lies adjacent to and west of Gare Palma IV/4 Coal Mine in Raigarh District of Chhattisgarh state. The block is covered under Survey of India Toposheet No. 64N/12 (OSM: F44L12) on RF 1:50000. The area can be approached from Ambikapur- Raigarh state highway (SH No.1) at a distance of about 55km from Raigarh through an all-weather road.



Fig-1: GP IV/5 Coal Block Boundary on Satellite Imagery

1.6 Geotrax Empanelment Certificate in Chhattisgarh- from CGCOST



छत्तीसगढ़ विज्ञान एवं प्रौद्योगिकी परिषद

एम.आई.जी. 25, इन्द्रावती कॉलोनी, रायपुर, (छ.ग.) 492 001

Chhattisgarh Council of Science & Technology

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Prof. M.M. Hambarde
Director General

No. 2470 /CCOST/2026

Date: 23/01 /2016

प्रति

Geotrax International Services

(Survey and Mapping Consultancy),

H/o. 23-88A,

Krishnavan Nagar, Kothipat,

Hyderabad (A.P.) 500 058,

Email: info@geotrax.in, Web: www.geotrax.in

विषय :- DGPS / GIS Services प्रदान करने हेतु Empanelment के संबंध में।

परिषद द्वारा पूर्व में DGPS / GIS Services प्रदान करने हेतु firms के empanelment हेतु EOI (Expression of Interest) बुलाये गये थे। जिसके संदर्भ में आपके द्वारा आवेदन प्रस्तुत किया गया था।

दिनांक 28.12.2015 को आपके द्वारा विषय विशेषज्ञ समिति के समक्ष दिये गये प्रस्तुतिकरण के आधार पर समिति द्वारा डीजीपीएस सर्वे कार्य हेतु आपकी संस्था का empanelment किया जाता है।

कृपया अपनी सहमति परिषद को प्रदान करने का कष्ट करें।


(सहनिदेशक)

खनिज साधन विभाग
मंत्रालय, महानदी भवन, नया रायपुर

नया रायपुर, दिनांक 5 जून 2014

क्रमांक एक 7-14/2013/12.—रज्य शासन एतद्वारा चौक कंट्रोलर आफ माईन्स, भारतीय खान ब्यूरो, नयापुर के परिचय क्रमांक N-118132/MP/90/CCOM Vol-VII, Circular No. 2/2010, दिनांक 06-04-2010 के पैरा-02 के बिन्दु क्रमांक-02 के तात्पर्य में Differential Global Positioning System (डिजीपीएस) का उपयोग करते हुए सर्वेक्षण करने के लिए नीचे तालिका के कालम नंबर-02 में दर्शित संस्थान को कालम नंबर-03 में दर्शित खनिज से संबंधित खनिज रियायतों के लिए अधिमान्यता प्रदान करता है —

तालिका

क्र.	एजेंसी का नाम एवं पता	अधिमान्यता का विवरण
1.	उत्तीसगढ़ विज्ञान एवं प्रौद्योगिकी परिषद्, एम.आई.जी.-25 इन्द्रावती कॉलोनी, रायपुर-492001 (उत्तीसगढ़)	रज्य में समस्त खनिजों को खनिज रियायतों से संबंधित डिजीपीएस सर्वे कार्य हेतु
2.	स्टील अथॉरिटी आफ इंडिया लिमिटेड, पिलाई इस्पात संयंत्र, पिलाई-490001, बिता-दुर्ग (उत्तीसगढ़)	रज्य में स्टील खनिजों की खनिज रियायतों से संबंधित डिजीपीएस सर्वे कार्य हेतु
3.	भारतीय सर्वेक्षण विभाग, उत्तीसगढ़ बिल्डिंग-स्पेशल डायरेक्टर, सर्वे आफ इंडिया, टीना अपार्टमेंट 3यें फ्लोर, पंचमैट्टी नरका, धमती रोड, रायपुर-492001 (उत्तीसगढ़)	रज्य में समस्त खनिजों की खनिज रियायतों से संबंधित डिजीपीएस सर्वे कार्य हेतु

2. अधिमान्यता प्राप्त संस्थान के लिये शर्तें —

1. Coordinates of boundry pillars shall be established in the World Geodetic System 1984 (WGS-84) Datum.
2. Each boundry pillar shall be surveyed using DGPS, at least 2-Hours observation, for its ground position.
3. The maximum distance between any two successive pillars should not be more than 100 meter.
4. All corner pillar should be of pyramid shaped which base of 1 meter and height of 2 meter and should be placed 1 meter above the ground and 1 meter below the ground.
5. Distance and bearing to the forward and backward pillars and latitudes and longitudes should be marked on all the corner pillars.

3. शर्तों के अतिरिक्त निम्नलिखित शर्तों को भी ध्यान दिया जाना होगा :-

1. इसीका बिन्दु में दर्शित कार्य के लिए खनिज रियायतधारी द्वारा अधिमान्यता प्राप्त संस्थान को भुगतान करना होगा डिजीपीएस सर्वे कार्य हेतु खनिजों का निर्धारित अधिमान्यता प्राप्त संस्थान एवं खनिज रियायतधारी के मध्य आपसी समझौते से किया जाएगा
2. डिजीपीएस सर्वे के संयोग में भारतीय खान ब्यूरो/राज्य खान ब्यूरो/सर्वे एवं माईन्स प्रो. सर्वे निदेशों का कालम अधिमान्यता प्राप्त संस्थान को करना होगा
3. यह अधिमान्यता इस आदेश के जारी होने से तत्पश्चात् आदेश परंतु प्रभावशाली होगी

उत्तीसगढ़ के राज्यपाल के नाम से तथा आदेशानुसार,
डी.डी. मंत्रालय, नया-रायपुर

2. Scope of Work

1. Using the CMPDI established base station as reference, Geotrax will establish one or more temporary benchmark control points near/inside the Coal block land boundary.
2. DGPS Survey for collection of ground coordinates of the forest boundary pillars and lease boundary pillars.
3. Assessment of total forest area inside the GP IV/ 5 Coal mine, which includes Protected Forest area, Reserve Forest area, and Revenue forest area.
4. Preparation of village wise non-forest area statement.
5. Review of revenue forest Khasras together with revenue records (P-II) and revenue maps.
6. Wherever needed Stake out forest compartment boundary pillar points and pillar fixing of compartment boundary points.
7. Data processing and interpretation:-
 - a. Creation of lease boundary vector map using the DGPS Surveyed data
 - b. Superimposition of lease boundary layer on Georeferenced forest maps, SOI Toposheet and Satellite imagery.
 - c. Computation of lease boundary area and validation of referenced boundary point coordinates given by CMPDI
 - d. Preparation of Geo-referenced forest map at 1:15000 scale, SOI Toposheet at 1:50000 scale and Satellite imagery map at 1:10000 scale.
 - e. Preparation of DGPS survey report along with soft copy of – maps in shapefile format and kml file
8. Printing of DGPS Survey report and Georeferenced maps.

3. Deliverables

The deliverables envisaged for the assignment are described below

1. Post processed DGPS observations data as well as raw data in RINEX format.
2. DGPS Reports - Base line & network adjustment report for the primary and Secondary Control Points.
3. Geo-referenced SOI maps & forest block maps based on DGPS observations – Hard and Soft Copy (SHP and KML formats).
4. Lease Boundary area statement as per DGPS Survey

4. Brief description of the Technical approach

4.1 Input Data

CMPDI certified block boundary coordinates and block boundary map was provided by M/s Hindalco Industries Limited (HIL). M/s HIL also provided the village maps, topographical land plan and SOI maps required for geo-referencing to Geotrax International Services. The land schedule of the GP IV/5 Block was also provided to Geotrax.

The forest stock map No. 64N12/1 and 64N12/2 was obtained by Geotrax.

4.2 CMPDI Certified Base Station DGPS Surveyed Coordinates

Station Name	Observed Geographic Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing	Easting
IV/6A1	22°07'34.83780N	83°28'58.84973E	2448902.828	756128.955
INC1	22°10'36.84758N	83°31'33.94548E	2454576.194	760481.886
INC2	22°10'37.51716N	83°31'35.42479E	2454597.502	760523.935
INC4	22°09'43.06445N	83°31'55.03758E	2452931.452	761113.932
STN5	22°09'40.12060N	83°31'55.33190E	2452841.016	761123.878
N1	22°10'19.19977N	83°32'40.38537E	2454065.018	762394.959
N2	22°10'16.48556N	83°32'44.05654E	2453983.271	762501.568
B1	22°09'08.84703N	83°32'34.25895E	2451897.424	762255.652
B3	22°09'09.20966N	83°32'35.17976E	2451909.024	762281.857

4.4 Letter to Forest Department regarding DGPS Survey



Ref: HIL/GP Mines/Forest/2019-20/ ०७ - 1३६

Date 02.08.2019

To,
The Divisional Forest Officer,
District- Raigarh, Raigarh
Chhattisgarh

Dear Sir,

Sub: DGPS Survey of the Forest Boundary within Mining Lease area of Gare Palma-IV/4 & IV/5, Tehsil- Tamnar, District Raigarh, Chhattisgarh

Ref:

1. Forest Clearance Ref no- F No. 8-112/2002-FC dated 18th May 2015 & F No. 8-69/1998-FC dated 18th May 2015, MoEFCC, Government of India, New Delhi.

It may kindly be recalled that Gare Palma IV/4 & IV/5 coal mines were allocated to Hindalco Industries Limited, being successful bidder in the auction process conducted by Ministry of Coal, Government of India as per Coal Mines Special Provision Act, 2015. The mine was allocated vide the Vesting Order issued by Nominated Authority under the Act, on 23.03.2015. The relevant Forest Clearances were transferred in the name of Hindalco Industries Limited vide letters as mentioned in ref.1.

Recently online registration for applications of re-diversion & related forest clearance have been submitted in portal also and the referred applications are –
FP/CG/MIN/40028/2019 dated 03.05.19 & FP/CG/MIN/41338/2019 dated 25.07.19 respectively for Gare Palma IV/4 & IV/5 Coal Mines.

Reference to the above cited applications it is intended to undertake DGPS field survey of Forest Boundary (R.F., P.F. & Revenue Forest) within the Mining Lease areas of Gare Palma IV/4 & 5 Coal Blocks work immediately. The field work may continue for approximately a week starting.

Hindalco Industries Limited
Gare Palma Mines (IV/4 & IV/5), Vill & Po: Milupara, Tehsil: Tamnar Dist: Raigarh- 496107, Chhattisgarh
T: +91 7762 228212, Website : www.hindalco.com E mail : hindalco@adityabirla.com
Registered Office : Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road Andheri (East) , Mumbai 400093, India
T: + 912266917000 | Fax: + 912266917001
Corporate ID No: L27020MH1958PLC011238

The work has been awarded to M/s Geotrax International Services, Raipur.

We request your co-operation in this work for carrying out the field and related office work successfully and smoothly.

Thanking you.

Yours sincerely,
For Hindalco Industries Limited



Vivek Mishra
Head- Chhattisgarh Coal Mines

Copy To-

- 1) Collector, District Raigarh for kind information.
- 2) Sub Divisional Officer (Revenue), Gharghoda for kind information and necessary advice to the concerned.
- 3) Sub Divisional Officer (Forest), Gharghoda for kind information and necessary advice to the concerned.
- 4) Tehsildar, Tamnar for kind information and with a request to depute a representative from the Land & Revenue Department to be associated in the above field survey.
- 5) Range Officer, Tamnar- Range for kind information and with a request to depute a representative from the Land & Revenue Department to be associated in the above field survey.

4.5 Establishment of Temporary control Benchmark (TBM) points

The Temporary Control Point are established in Real Time Kinematic (RTK) Mode using DGPS Instrument with reference to the INC1 and other CMPDI established base stations

Below table lists the coordinates of TBMs:

TBM	Location	Easting (UTM Zone 44)	Northing (UTM Zone 44)	Latitude	Longitude
Base - INC 04	Fan house Structure (IV/5)	761113.932	2452931.452	22°09'43.06445"N	83°31'55.03758E
TBM-1	Fixed Stone	762501.436	2453983.175	22° 10'16.48251"N	83°32'44.5187"E
TBM-2	Fixed Stone	763883.808	2453437.144	22° 9'57.98577"N	83°33'31.95321"E
TBM-3	Top of Hill-Fixed Stone	762372.099	2453046.541	22° 9'46.12031"N	83°32'38.99226"E
TBM-4	Top of Dumping Area-Fixed Stone	762403.97	2452449.047	22° 9'26.68941"N	83°32'39.75466"E
TBM-5	Roof on Building	761111.633	2452939.355	22° 9'43.32246"N	83°31'54.96196"E
TBM-6	Top of Hill-Fixed Stone	762187.204	2451155.469	22° 8'44.77690"N	83°32'31.43833"E
TBM-7	Roof on Building	761201.459	2454626.673	22° 10'38.9782"N	83°31'59.7785"E

4.6 DGPS Survey Procedure

Geotrax started the DGPS Survey using the above mentioned CMPDI Base station control points. The coordinate of the Base Station is as follows:

Point ID	Latitude (d:m:s)	Longitude (d:m:s)	Ellipsoidal Height (m)
INC1	22°10'36.84758N	83° 31'33.94548E	NA

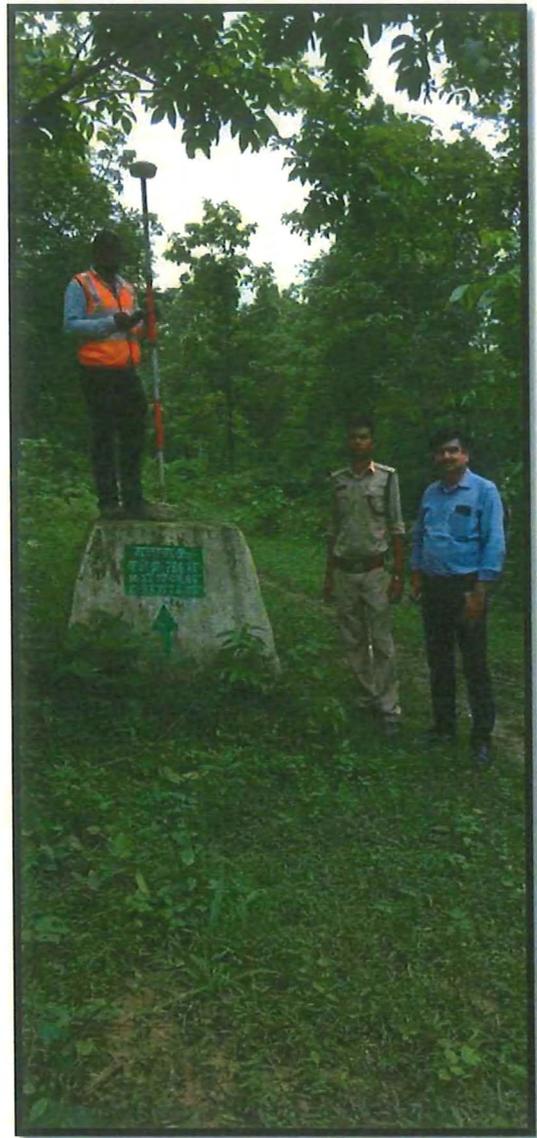


Fig-3: Images showing CMPDI Base Station

DGPS survey was carried out using a pair of DGPS instrument. One DGPS Instrument was used as Base Station (INC1). With reference to Base station other TBM are established which are spread out through-out the lease block. The forest pillar coordinates are collected with reference to CMPDI Base station and TBM base stations. The distance between the Base Station and rover was always less than 5km.

The survey was conducted in Real Time Kinematic (RTK) mode. The Survey team collected DGPS coordinates of forest pillars and block boundary points by walking along the forest compartment boundary and/or block boundary. DGPS readings were collected at every 50m distance along forest compartment boundary and at every turn or bend. For Geo-referencing village maps ground control points were also collected.

4.7 Forest Compartment Pillar Photographs taken during DGPS Survey



4.8 Creation of forest compartment boundary map

The forest pillars surveyed points captured through DGPS were plotted in the GIS Software and the forest compartment boundary line was created by joining the forest pillar points. The forest compartment boundary polygon was created using the boundary lines.

The block boundary coordinates given by CMPDI was used for creating the GP IV/5 block boundary polygon.

The forest map and Survey of India map are geo-referenced to the WGS 84 datum and UTM Projection system. The village maps are also geo-referenced and mosaicked to the same datum (WGS 84) and UTM Projection system (UTM Zone 44N).

The Cadastral map is geo-referenced and revenue forest Khasras are digitized. After digitization and some editing of the boundary of the revenue forest Khasra, a village wise revenue forest area statement is prepared.

The forest compartment boundary layer and revenue forest Khasra layer is superimposed on survey of India Map and Forest stock map.

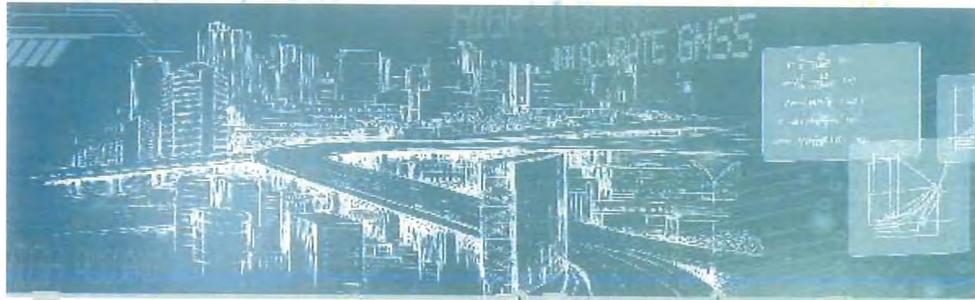
A final map is composed in Arc GIS Software showing the forest compartment boundary, revenue forest Khasra boundary and detailed forest land schedule.

4.9 Specification of DGPS Equipment

Geotrax deployed the most advanced and hi-precision devices to carry out the DGPS survey. The DGPS performance specifications are given below. The corresponding fact sheets are placed below for ready reference.

COMNAV

T300 GNSS Receiver



Features

- **Ultra small**
- **Super light**
- **Many user-friendly conveniences built in**
- **GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2**
- **Low power consumption**
- **Support long baseline E-RTK**

RTK robust enough for challenging environments, in a device that is light and easy to carry

With decades of experience in the surveying GNSS receiver, the T300 is a product which combines lots of market proved advantages together. It can track all the working GNSS constellations. By using ComNav's unique QUAN™ algorithm technology, it can function in RTK mode with all the GNSS constellations or by using any single GNSS constellation such as GLONASS or BeiDou. The strong anti-interference ability of the receiver makes it possible to work in any environment.

Design driven to improve user experience

Our R&D people are always thinking about how to improve the physical experience of users and workflow in the field. With this in mind, the T300 integrates a cutting edge GNSS board, Bluetooth®, UHF (Rx&Tx) into a compact board. Smart design makes the T300 the lightest and smallest (volume) receiver in the world.

Hot swap battery design

Extending the field working time is also a passion for our R&D people. They do lots of tests and analysis to reduce the power consumption, and make the whole system work more efficiently. In parallel, they've designed in the capability to hot swap the battery source. When the warning sounds and LED flashes, put your second battery in place. Then recharge the first while you keep working.

Consumer grade batteries... always available

Losing power in the field is significantly inconvenient for users, as the batteries for GNSS receivers are often unusual types and not readily available. Once again our R&D people developed a solution so that the T300 runs on normal consumer batteries.

Technical Specifications

T300

Signal Tracking

- 256 channels with simultaneously tracked satellite signals
- GPS: L1 C/A, L1 C, L2 P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1, L2
- SBAS: WAAS, EGNOS, MSAS, GAGAN

Performance Specifications

- Cold start: <50 s
- Warm start: <30 s
- Hot start: <15 s
- Initialization time: <10 s
- Singal re-acquisition: <2 s
- Initialization reliability: >99.9%

Positioning Specifications

- Post Processing Static
 - Horizontal: 2.5 mm + 0.5 ppm RMS
 - Vertical: 5 mm + 0.5 ppm RMS
- Real Time Kinematic
 - Horizontal: 8 mm + 1 ppm RMS
 - Vertical: 15 mm + 1 ppm RMS
- E-RTK¹ (baseline <100 km)
 - Horizontal: 0.2 m + 1 ppm RMS
 - Vertical: 0.4 m + 1 ppm RMS
- Code differential GNSS positioning
 - Horizontal: 0.25 m + 1 ppm RMS
 - Vertical: 0.5 m + 1 ppm RMS
- SBAS: Typically <1 m 3D RMS
- Standalone: <1.5 m 3D RMS

Communications and Memory

- 1 Serial port (7 pin Lemo), Baud rates up to 921,600 bps.
- Radio modem: Tx/Rx with full frequency range from 410-470 MHz²
 - Transmit power: 0.5-2W adjustable
 - Range: 1-4 km
- Position data output rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz
- 5 LEDs (indicating Power, Satellite Tracking, Bluetooth[®] and Differential Data)
- Bluetooth[®] : V 2.X protocol, work compatible with Windows 7, Windows mobile and Android

Data Format

- Correction data I/O:
 - RTCM 2.x, 3.x, CMR (GPS only), CMR+ (GPS only).
- Position data output:
 - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST, PJK, PTNL
 - ComNav Binary update to 20 Hz

Physical

- Size(WxH): 15.8 cm x 7.5 cm
- Weight: 0.95 kg (include 2 batteries)

Environmental

- Operating temperature: -40 °C to +65 °C (40 °F to 149 °F)
- Storage temperature: -40 °C to +85 °C (40 °F to 185 °F)
- Humidity: 100% condensation
- Waterproof and dust proof: IP67 protected from temporary immersion to depth of 1 meter, floats
- Shock: survives a 2 meter drop on to concrete

Electrical

- Input Voltage: 5-27 VDC
- Power consumption: 2.85 W (3 constellations)³
- Li-ion battery capacity: 2 x 1800 mAh, up to 8 hours typically
- Memory: 256 MB internal with up to 16 GB pluggable memory card

Software

- ComNav field data collection software CGSurvey
- Carlson's SurvCE field data collection software (optional)
- MicroSurvey's FieldGenius field data collection software (optional)

- 1 E-RTK, BeiDou B3 signal used in RTK calculate engine; concern the current situation, this mode can be used in APAC.
- 2 410-470 MHz, 3 frequency range, 410-430, 430-460, 460-470, need to clarify when place the order.
- 3 Power consumption will increase if using internal radio modem transmitter.

Specifications subject to change without notice.

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5. DGPS Survey and Mapping Results

The total forest area inside the GP IV/5 block boundary is approximately 319.730 Ha.

There are total of 5 forest compartments touching the GP IV/5 block boundary. Out of the 5 forest compartments, 3 compartments are of Reserved Forest (RF) Category and 2 of them are of Protected Forest (PF) Category.

The total Reserved Forest area is 222.888 Ha, the Protected Forest area is 93.358 Ha. The total revenue forest area is 3.484 Ha.

The total forest land including revenue forest is 319.73 Ha and the total non-forest land is 477.925 Ha.

The DGPS Survey coordinates of forest compartment boundary points and herewith annexed and marked as Annexure-1. The geo-referenced maps are herewith annexed and marked as **Annexure -2**. The CMPDI block boundary pillar coordinates table is herewith annexed and marked as **Annexure-3**.

M/S HINDALCO INDUSTRIES LIMITED (HIL) GARE PALMA IV/5 COAL MINE (TOTAL BLOCK AREA 797.655 HA) Final Schedule of Forest Land	
Total Proposed PF & RF Area (Ha.)	316.246
Total Proposed Revenue ^{Forest} Area (Ha.) ^{PF}	3.484
Total Proposed Forest Area (Ha.)	319.73



वन परिक्षेत्र अधिकारी
तमनार

Dipankar Khan
Authorised Person
Gare Palma IV/5 Coal Mine
Hindalco Industries Ltd.

वन मञ्जलाधिकारी
रावगढ, वनमण्डल

वन परिक्षेत्र अधिकारी
कौडकेल वन मण्डल



M/S HINDALCO INDUSTRIES LIMITED (HIL)

GARE PALMA IV/5 COAL BLOCK (TOTAL BLOCK AREA 797.655 HA)

SCHEDULE OF FOREST LAND (PROTECTED FOREST, RESERVED FOREST & REVENUE FOREST)

Details of Protected Forest and Reserved Forest

Sl. No	Circle	Division	Range	Compartment No	Forest Type	Patch No	Proposed Area (Ha.)	Patch Wise Proposed Area (Ha.)
1	Bilaspur	Raigarh	Tamnar	P 785	Protected Forest	Patch - 1	4.399	174.276
2				RF 784	Reserved Forest		156.748	
3				RF 782		13.129		
4				RF 722		53.011		
5				P 788	Protected Forest	Patch - 3	88.959	
Total Proposed Area (Ha.)							316.246	316.246

Details of Revenue Forest (Chote Jhad Ka Jungle (C.JJ) + Bade Jhad Ka Jungle (B.JJ))

Sl. No	District	Tehsil	Village	Proposed Area (Ha.)		Village Wise Total Area (Ha.)
				C.JJ Proposed Area (Ha.)	B.JJ Proposed Area (Ha.)	
1	Raigarh	Tamnar	Kondke	3.009	0.475	3.484
Total Proposed Area (Ha.)				3.009	0.475	3.484

मनोज कुमार महिलांगे
वनरक्षक कोटक/राजसमूहारा

राजसमूहारा वन परिक्षेत्र अधिकारी
तमनार

Authorised Person
Gare Palma IV/5 Coal Mine
Hindalco Industries Ltd.



REVENUE FOREST LAND DETAILS OF GARE PALMA IV/5 COAL BLOCK					
Village	SL.No.	Khasra No.	Type	Area of plot (in hec.)	Area Proposed ML (in hec.)
KONDKEL (PATWARI HALKA No. 18) TEHSIL- TAMNAR, DIST- RAIGARH	1	153/1	Bhade Jhar ka Jungle	0.467	0.467
	2	153/5	Bhade Jhar ka Jungle	0.008	0.008
	3	81/1	Chote Jhar Ka Jungle	0.943	0.943
	4	179/1	Chote Jhar Ka Jungle	6.224	0.853
	5	179/5	Chote Jhar Ka Jungle	2.428	0.275
	6	252/1	Chote Jhar Ka Jungle	0.406	0.129
	7	252/5	Chote Jhar Ka Jungle	0.809	0.809
			TOTAL	11.285	3.484
			Total CJJ		
			Total BJJ		
			Grand Total	11.285	3.484

M/S HINDALCO INDUSTRIES LIMITED (HIL)	
GARE PALMA IV/5 COAL BLOCK (TOTAL BLOCK AREA 797.655 HA)	
Total Proposed PF/RF Area (Ha.)	316.246
Total Proposed Revenue Forest Area (Ha.)	3.484
Total Proposed Forest Area for diversion (Ha.)	319.730


 Dipanka
 Authorised P.
 GARE PALMA IV/5 COAL Mine
 Hindalco Industries Ltd.


 Dipanka
 Authorised P.
 GARE PALMA IV/5 COAL Mine
 Hindalco Industries Ltd.


 वन परिक्षेत्र अधिकारी
 तमनार


 वन परिक्षेत्र अधिकारी
 तमनार


 मनोज कुमार महिलांगे
 वनरक्षक कोडकेल/मिलुपारा



6. Background of Organization

Geotrax International Services (www.geotrax.in) is a Professional Land Mapping and Services provider across India established in the year 1999. During the last 15+ years, we had an opportunity to execute a variety of surveying jobs all over India and in the Middle East to various customer specifications for RIS, LIS, and Municipal GIS oriented jobs. Cadastral Surveys using ETS/DGPS and Provision of Ground control conforming to stringent accuracy standards using high end instruments as RTK/GPRS DGPS is our speciality. We also have a UAV (Drone) and Ground Penetrating Radar (on Roaster).

Geotrax is headed by Mr. V.V.S Bandhakavi (Ex-Survey of India employee) who has more than 40+ years' experience in the field of surveying in India and abroad.

Some of our major clients include:

- Odisha Space Application Centre (ORSAC)
- Steel Authority of India (SAIL)
- National Thermal Power Corporation (NTPC)
- Survey Settlement and Land Records Department (Govt. Of Gujarat)
- Survey Settlement and Land Records Department (Govt. Of Madhya Pradesh)
- Irrigation Dept. (Govt. of Jammu and Kashmir)
- National Remote Sensing Agency (Hyderabad)
- Meinhardt India Private Limited (Delhi),
- Nagarjuna Construction Company (NCC, Hyderabad)
- Consulting Engineering Services (CES, New Delhi)
- Lee Associates of South Asia (LASA, Delhi)
- Power development Corporation (Govt. of Jammu and Kashmir)



Geotrax expertise covers:

- ❖ DGPS Surveys for Mining lease boundary, and Forest Diversion
- ❖ Consultancy services for Mining Plan & EIA
- ❖ Boundary and cadastral surveys using DGPS and Total station;
- ❖ Topographic surveys.
- ❖ Ground control surveys for photogrammetric projects, including Airborne GPS.
- ❖ Only one of the two companies in India who are empanelled by NRSA for DGPS survey for ground control point collection
- ❖ Route and alignment surveys combining conventional and photogrammetric methods.
- ❖ Construction and cross-section surveys (from road design to precision layout and quality control).

Being a client focused organization, Geotrax's combination of survey equipment, personnel, and computer resources allow for the tailoring of the project approach to match the orders of accuracy and precision requirements for each project. Geotrax's equipment resources include 250 DGPS, 33 hand-held GPS units, theodolites, electronic digital and automatic levels, 19 Electronic Total Stations, and data collectors.

On the mapping side, our CAD and GIS professionals assist the survey projects by creating accurate maps. We have dedicated CAD experts who have extensive experience with different CAD software.



7. Annexure

7.1 Annexure – 1: Forest Compartment Boundary Points DGPS Coordinates

7.1.1 Forest Compartment Patch Boundary Points Coordinates

Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
1	P1	Patch - 1	762308.188	2454114.764	22°10'20.86337"	83°32'37.38752"
2	P2		762190.958	2454206.158	22°10'23.89674"	83°32'33.35145"
3	P3		762126.150	2454218.739	22°10'24.34081"	83°32'31.09801"
4	P4		762077.759	2454240.312	22°10'25.06807"	83°32'29.42249"
5	P5		762012.377	2454260.334	22°10'25.75421"	83°32'27.15334"
6	P6		761970.850	2454284.025	22°10'26.54657"	83°32'25.71853"
7	P7		761910.835	2454312.021	22°10'27.48884"	83°32'23.64126"
8	P8		761857.001	2454337.483	22°10'28.34545"	83°32'21.77814"
9	P9		761801.684	2454388.114	22°10'30.02060"	83°32'19.87793"
10	P10		761733.356	2454421.681	22°10'31.14842"	83°32'17.51388"
11	P11		761695.149	2454440.081	22°10'31.76702"	83°32'16.19178"
12	P12		761660.993	2454452.372	22°10'32.18496"	83°32'15.00739"
13	P13		761579.903	2454409.144	22°10'30.82446"	83°32'12.15331"
14	P14		761523.716	2454367.760	22°10'29.51034"	83°32'10.16908"
15	P15		761502.786	2454325.298	22°10'28.14203"	83°32'09.41416"
16	P16		761533.093	2454317.298	22°10'27.86565"	83°32'10.46675"
17	P17		761467.331	2454160.328	22°10'22.80112"	83°32'08.08114"
18	P18		761517.807	2454110.839	22°10'21.16574"	83°32'09.81313"
19	P19		761534.532	2454118.086	22°10'21.39214"	83°32'10.40080"
20	P20		761569.309	2454097.107	22°10'20.69158"	83°32'11.60176"
21	P21		761605.158	2454082.547	22°10'20.19903"	83°32'12.84384"
22	P22		761612.196	2454065.528	22°10'19.64224"	83°32'13.07940"
23	P23		761632.756	2454048.804	22°10'19.08767"	83°32'13.78689"
24	P24		761685.030	2454024.366	22°10'18.26525"	83°32'15.59618"
25	P25		761755.958	2454007.720	22°10'17.68582"	83°32'18.06076"
26	P26		761801.988	2453971.420	22°10'16.48136"	83°32'19.64529"
27	P27		761855.027	2453901.762	22°10'14.18920"	83°32'21.45484"
28	P28		761896.440	2453857.149	22°10'12.71715"	83°32'22.87346"
29	P29		761908.649	2453809.899	22°10'11.17526"	83°32'23.27178"

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 Hindalco Industries Ltd.

मनमोहन कुमार महिलांगे
 वन विभाग काँडकोल/मिलपारा

वन विभाग काँडकोल/मिलपारा

वन परिक्षेत्र अधिकारी
 तमनार

उप-परिक्षेत्र अधिकारी
 वरयोडा उप-कामगुहा



Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
30	P30		761957.728	2453739.076	22°10'08.84743"	83°32'24.94247"
31	P31		761674.539	2453233.093	22°09'52.56110"	83°32'14.76865"
32	P32		761687.141	2453241.198	22°09'52.81762"	83°32'15.21295"
33	P33		761677.728	2453266.227	22°09'53.63596"	83°32'14.89922"
34	P34		761676.050	2453321.346	22°09'55.42780"	83°32'14.87283"
35	P35		761645.764	2453331.276	22°09'55.76689"	83°32'13.82213"
36	P36		761617.933	2453329.518	22°09'55.72488"	83°32'12.85030"
37	P37		761562.107	2453351.954	22°09'56.48418"	83°32'10.91600"
38	P38		761509.287	2453382.550	22°09'57.50698"	83°32'09.09131"
39	P39		761486.873	2453390.245	22°09'57.76916"	83°32'08.31392"
40	P40		761489.628	2453401.416	22°09'58.13063"	83°32'08.41654"
41	P41		761455.202	2453412.279	22°09'58.50229"	83°32'07.22199"
42	P42		761452.455	2453402.060	22°09'58.17174"	83°32'07.12021"
43	P43		761397.729	2453422.586	22°09'58.86837"	83°32'05.22315"
44	P44		761336.423	2453435.844	22°09'59.33242"	83°32'03.09232"
45	P45		761278.223	2453442.979	22°09'59.59582"	83°32'01.06627"
46	P46		761219.250	2453432.354	22°09'59.28258"	83°31'59.00291"
47	P47		761160.908	2453422.219	22°09'58.98491"	83°31'56.96184"
48	P48		761107.478	2453412.447	22°09'58.69636"	83°31'55.09235"
49	P49		761047.711	2453396.972	22°09'58.22595"	83°31'52.99846"
50	P50		760967.989	2453318.133	22°09'55.70753"	83°31'50.17166"
51	P51		760949.728	2453220.706	22°09'52.55183"	83°31'49.47797"
52	P52		760938.045	2453160.109	22°09'50.58925"	83°31'49.03519"
53	P53		760926.826	2453100.908	22°09'48.67177"	83°31'48.60943"
54	P54		760904.596	2453086.724	22°09'48.22293"	83°31'47.82576"
55	P55		760863.184	2453091.922	22°09'48.41426"	83°31'46.38421"
56	P56		760801.110	2453145.532	22°09'50.18977"	83°31'44.25006"
57	P57		760759.013	2453185.016	22°09'51.49547"	83°31'42.80455"
58	P58		760671.854	2453275.036	22°09'54.46758"	83°31'39.81649"
59	P59		760623.746	2453343.194	22°09'56.70819"	83°31'38.17793"
60	P60		760594.470	2453393.963	22°09'58.37362"	83°31'37.18617"
61	P61		760558.537	2453443.986	22°10'00.01839"	83°31'35.96177"
62	P62		760523.106	2453492.432	22°10'01.61168"	83°31'34.75395"
63	P63		760451.161	2453579.295	22°10'04.47295"	83°31'32.29467"

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मनोज कुमार महिलांगे
 वनरक्षक कोडकेल/मिलुपारा

वन मण्डलाधिकारी
 रायगड, वनमण्डल

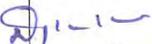
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 लमनार

वन मण्डलाधिकारी
 रायगड, वनमण्डल



Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
64	P64		760395.664	2453680.050	22°10'07.77669"	83°31'30.41720"
65	P65		760273.216	2453715.303	22°10'08.98832"	83°31'26.16617"
66	P66		760237.813	2453548.585	22°10'03.59044"	83°31'24.83446"
67	P67		760208.727	2453496.165	22°10'01.90292"	83°31'23.78940"
68	P68		760154.058	2453455.905	22°10'00.62432"	83°31'21.85901"
69	P69		760129.917	2453443.716	22°10'00.24132"	83°31'21.00982"
70	P70		759955.090	2454164.994	22°10'23.77156"	83°31'15.32921"
71	P71		759987.349	2454168.813	22°10'23.87823"	83°31'16.45680"

Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
72	P72		760040.042	2454152.519	22°10'23.32036"	83°31'18.28556"
73	P73		760102.998	2454147.384	22°10'23.11951"	83°31'20.47882"
74	P74		760163.768	2454141.390	22°10'22.89192"	83°31'22.59531"
75	P75		760347.022	2454091.097	22°10'21.15874"	83°31'28.95896"
76	P76		760409.049	2454090.779	22°10'21.11487"	83°31'31.12259"
77	P77		760526.910	2454128.934	22°10'22.29086"	83°31'35.25633"
78	P78		760629.528	2454184.305	22°10'24.03442"	83°31'38.86834"
79	P79	Patch - 1	760764.296	2454285.246	22°10'27.24121"	83°31'43.62843"
80	P80		760882.045	2454302.212	22°10'27.72870"	83°31'47.74602"
81	P81		761031.930	2454457.528	22°10'32.69397"	83°31'53.06521"
82	P82		761102.026	2454530.166	22°10'35.01609"	83°31'55.55285"
83	P83		761201.312	2454626.527	22°10'38.09317"	83°31'59.07265"
84	P84		761304.829	2454616.274	22°10'37.70387"	83°32'02.67797"
85	P85		761306.075	2454658.051	22°10'39.06059"	83°32'02.74578"
86	P86		761323.170	2454694.499	22°10'40.23558"	83°32'03.36341"
87	P87		760084.988	2453351.440	22°09'57.26732"	83°31'19.38903"
88	P88		760093.104	2453298.660	22°09'55.54802"	83°31'19.64154"
89	P89		760029.153	2453266.221	22°09'54.52854"	83°31'17.39192"
90	P90	Patch - 2	760055.547	2453219.440	22°09'52.99428"	83°31'18.28550"
91	P91		760110.695	2453151.812	22°09'50.76711"	83°31'20.17003"
92	P92		760142.050	2453149.037	22°09'50.66003"	83°31'21.26220"
93	P93		760222.528	2453182.671	22°09'51.70938"	83°31'24.08900"


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 रांघराड, वनमण्डल


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Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
94	P94		760330.240	2453287.335	22°09'55.05194"	83°31'27.90705"
95	P95		760486.049	2453263.989	22°09'54.20915"	83°31'33.32862"
96	P96		760569.615	2453235.522	22°09'53.23900"	83°31'36.22713"
97	P97		760576.394	2453115.245	22°09'49.32729"	83°31'36.39375"
98	P98		760579.248	2453056.876	22°09'47.42922"	83°31'36.45941"
99	P99		760583.714	2452969.997	22°09'44.60393"	83°31'36.56474"
100	P100		760560.565	2452915.385	22°09'42.84200"	83°31'35.72554"
101	P101		760542.253	2452860.592	22°09'41.07156"	83°31'35.05496"
102	P102		760529.815	2452793.946	22°09'38.91283"	83°31'34.58240"
103	P103		760515.103	2452656.679	22°09'34.46070"	83°31'33.98954"
104	P104		760495.803	2452555.484	22°09'31.18310"	83°31'33.25759"
105	P105		760440.776	2452532.916	22°09'30.47956"	83°31'31.32507"
106	P106		760390.076	2452543.505	22°09'30.85102"	83°31'29.56272"
107	P107		760382.093	2452536.254	22°09'30.61974"	83°31'29.28004"
108	P108		760331.851	2452544.909	22°09'30.92811"	83°31'27.53256"
109	P109		760283.215	2452545.683	22°09'30.97951"	83°31'25.83648"
110	P110		760227.123	2452553.994	22°09'31.27985"	83°31'23.88474"
111	P111		760223.194	2452549.221	22°09'31.12692"	83°31'23.74492"
112	P112		760172.143	2452556.590	22°09'31.39390"	83°31'21.96845"
113	P113		760122.526	2452605.309	22°09'33.00367"	83°31'20.26597"
114	P114		760077.067	2452633.307	22°09'33.93793"	83°31'18.69649"
115	P115		760002.042	2452618.737	22°09'33.50500"	83°31'16.07104"
116	P116		759916.838	2452596.198	22°09'32.81864"	83°31'13.08590"
117	P117		759853.006	2452595.138	22°09'32.81864"	83°31'10.85872"
118	P118		759745.047	2452587.269	22°09'32.62115"	83°31'07.08837"
119	P119		759679.337	2452607.753	22°09'33.32217"	83°31'04.80813"
120	P120		759616.095	2452628.117	22°09'34.01789"	83°31'02.61389"
121	P121		759562.029	2452630.516	22°09'34.12497"	83°31'00.72936"
122	P122		759476.683	2452631.078	22°09'34.18921"	83°30'57.75265"
123	P123		759393.948	2452650.828	22°09'34.87550"	83°30'54.87810"
124	P124		759312.550	2452672.548	22°09'35.62503"	83°30'52.05130"
125	P125		759184.912	2452706.025	22°09'36.78145"	83°30'47.61836"
126	P126		759177.867	2452723.703	22°09'37.35965"	83°30'47.38280"
127	P127		759178.930	2452733.607	22°09'37.68088"	83°30'47.42563"

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Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
128	P128		759143.750	2452744.888	22°09'38.06636"	83°30'46.20496"
129	P129		759090.028	2452777.776	22°09'39.16385"	83°30'44.35000"
130	P130		759073.652	2452793.375	22°09'39.67950"	83°30'43.78776"
131	P131		759963.412	2452117.005	22°09'17.22348"	83°31'14.43297"
132	P132		759976.694	2452097.169	22°09'16.57182"	83°31'14.88479"
133	P133		760003.770	2452059.445	22°09'15.33145"	83°31'15.80735"
134	P134		760015.085	2452058.314	22°09'15.28862"	83°31'16.20139"
135	P135		760020.241	2452043.637	22°09'14.80892"	83°31'16.37271"
136	P136	Patch No - 3	760029.882	2452039.842	22°09'14.68043"	83°31'16.70679"
137	P137		760040.956	2452053.208	22°09'15.10873"	83°31'17.10083"
138	P138		760080.145	2452029.689	22°09'14.32341"	83°31'18.45413"
139	P139		760182.840	2451997.650	22°09'13.22696"	83°31'22.01761"
140	P140		760363.293	2451897.304	22°09'09.86906"	83°31'28.25370"
141	P141		760390.721	2451901.978	22°09'10.00612"	83°31'29.21310"
142	P142		760416.781	2451870.775	22°09'08.97819"	83°31'30.10397"

Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
143	P143		760400.361	2451785.483	22°09'06.21574"	83°31'29.48177"
144	P144		760357.824	2451652.132	22°09'01.90585"	83°31'27.92077"
145	P145		760301.376	2451475.173	22°08'56.18657"	83°31'25.84931"
146	P146		760185.457	2451255.340	22°08'49.10630"	83°31'21.67878"
147	P147		760116.383	2451140.825	22°08'45.42272"	83°31'19.20325"
148	P148		760049.835	2450975.803	22°08'40.09669"	83°31'16.78661"
149	P149		759792.704	2450855.418	22°08'36.32371"	83°31'07.74872"
150	P150	Patch - 3	759790.100	2450848.885	22°08'36.11285"	83°31'07.65412"
151	P151		759769.945	2450836.287	22°08'35.71436"	83°31'06.94385"
152	P152		759733.517	2450806.087	22°08'34.75273"	83°31'05.65587"
153	P153		759676.418	2450752.062	22°08'33.02806"	83°31'03.63315"
154	P154		759637.321	2450713.105	22°08'31.78332"	83°31'02.24702"
155	P155		759616.730	2450691.974	22°08'31.10781"	83°31'01.51664"
156	P156		759645.243	2450810.926	22°08'34.95750"	83°31'02.57987"
157	P157		759679.706	2450901.103	22°08'37.86900"	83°31'03.83398"
158	P158		759698.146	2450948.404	22°08'39.39598"	83°31'04.50448"

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 वन नडलाधिकारी
 वन नडलाधिकारी



Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
159	P159		759697.444	2451011.306	22°08'41.44019"	83°31'04.51636"
160	P160		759676.180	2451081.882	22°08'43.74481"	83°31'03.81550"
161	P161		759660.304	2451134.574	22°08'45.46545"	83°31'03.29224"
162	P162		759548.118	2451116.953	22°08'44.95331"	83°30'59.36917"
163	P163		759428.981	2451098.241	22°08'44.40943"	83°30'55.20301"
164	P164		759536.783	2450945.603	22°08'39.39185"	83°30'58.87480"
165	P165		759555.797	2450795.648	22°08'34.50922"	83°30'59.45133"
166	P166		759437.752	2450795.584	22°08'34.57067"	83°30'55.33413"
167	P167		759392.317	2450800.125	22°08'34.74267"	83°30'53.75208"
168	P168		759381.051	2450809.580	22°08'35.05595"	83°30'53.36458"
169	P169		759355.253	2450835.468	22°08'35.91097"	83°30'52.47976"
170	P170		759277.181	2450903.271	22°08'38.15604"	83°30'49.79589"
171	P171		759245.325	2450923.483	22°08'38.82992"	83°30'48.69646"
172	P172		759226.227	2450939.510	22°08'39.36094"	83°30'48.03963"
173	P173		759218.675	2450947.090	22°08'39.61128"	83°30'47.78059"
174	P174		759180.656	2451010.177	22°08'41.68157"	83°30'46.49095"
175	P175		759210.081	2451064.676	22°08'43.43656"	83°30'47.54870"
176	P176		759236.916	2451137.344	22°08'45.78330"	83°30'48.52660"
177	P177		759235.813	2451159.471	22°08'46.50285"	83°30'48.50090"
178	P178		759205.381	2451217.494	22°08'48.40452"	83°30'47.47297"
179	P179		759169.332	2451258.815	22°08'49.76652"	83°30'46.23946"
180	P180		759163.718	2451286.404	22°08'50.66595"	83°30'46.05957"
181	P181		759168.931	2451327.617	22°08'52.00226"	83°30'46.26516"
182	P182		759198.899	2451386.639	22°08'53.90393"	83°30'47.34448"
183	P183		759239.427	2451430.809	22°08'55.31733"	83°30'48.78358"
184	P184		759296.330	2451464.969	22°08'56.39665"	83°30'50.78804"
185	P185		759376.658	2451508.216	22°08'57.75865"	83°30'53.61484"
186	P186		759396.562	2451552.045	22°08'59.17205"	83°30'54.33439"
187	P187		759420.392	2451574.472	22°08'59.88793"	83°30'55.17853"
188	P188		759474.425	2451596.047	22°09'00.55987"	83°30'57.07565"
189	P189		759553.985	2451630.891	22°09'01.64920"	83°30'59.87082"
190	P190		759576.308	2451642.007	22°09'01.99836"	83°31'00.65586"
191	P191		759659.691	2451510.047	22°08'57.66577"	83°31'03.48794"
192	P192		759714.789	2451465.966	22°08'56.20379"	83°31'05.38424"

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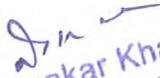
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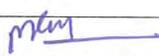
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Sl. No	Pillar Id	Patch No	Easting (m)	Northing (m)	Latitude (°N)	Longitude (°E)
193	P193		759725.398	2451550.754	22°08'58.95303"	83°31'05.80331"
194	P194		759822.068	2451663.976	22°09'02.57978"	83°31'09.24063"
195	P195		759850.209	2451706.100	22°09'03.93331"	83°31'10.24656"
196	P196		759846.898	2451813.379	22°09'07.42083"	83°31'10.19315"
197	P197		759790.545	2451880.485	22°09'09.63165"	83°31'08.26637"
198	P198		759739.989	2451957.080	22°09'12.14763"	83°31'06.54730"
199	P199		759772.617	2451975.297	22°09'12.72194"	83°31'07.69591"
200	P200		759769.537	2451989.177	22°09'13.17461"	83°31'07.59650"
201	P201		759729.697	2451985.382	22°09'13.07277"	83°31'06.20466"
202	P202		759680.454	2451993.002	22°09'13.34688"	83°31'04.49145"
203	P203		759638.104	2452029.208	22°09'14.54613"	83°31'03.03522"
204	P204		759654.834	2452029.343	22°09'14.54151"	83°31'03.61882"
205	P205		759710.872	2452035.964	22°09'14.72642"	83°31'05.57730"
206	P206		759760.997	2452042.577	22°09'14.91429"	83°31'07.32952"
207	P207		759779.970	2452053.569	22°09'15.26121"	83°31'07.99768"
208	P208		759795.379	2452057.383	22°09'15.37685"	83°31'08.53734"
209	P209		759830.904	2452069.836	22°09'15.76233"	83°31'09.78370"
210	P210		759870.020	2452087.885	22°09'16.32769"	83°31'11.15855"
211	P211		759902.626	2452098.708	22°09'16.66176"	83°31'12.30212"
212	P212		759938.138	2452111.952	22°09'17.07293"	83°31'13.54848"


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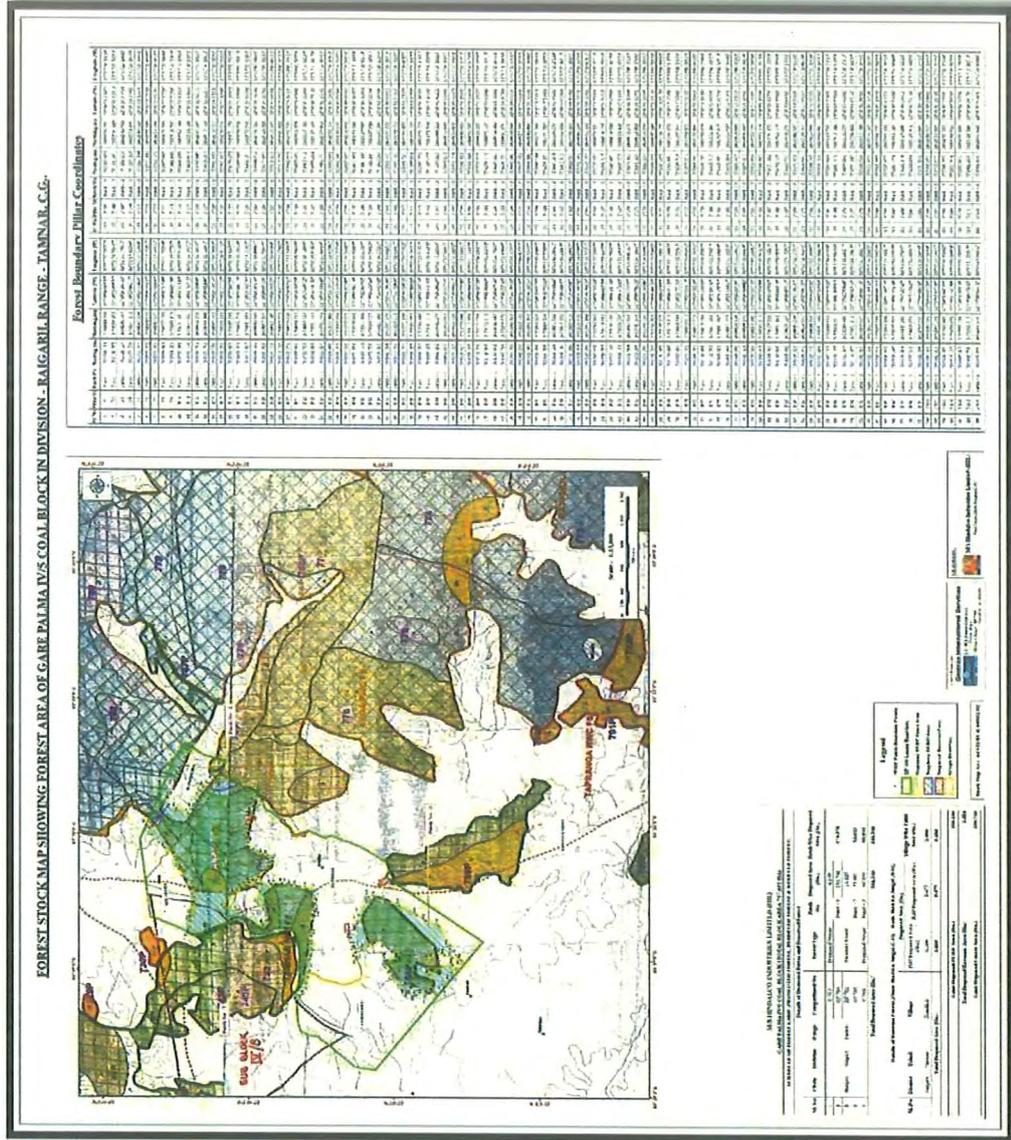

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7.2.2 GP IV/5 Block Boundary on Forest Stock Map



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Note: The map when printed from this page should be treated as NOT TO SCALE

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7.3 Annexure-3: CMPDI Block Boundary Pillar coordinates

Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
5	22°10'20.85047"N	83°32'37.37796"E	2454114.363	762307.9
6	22°10'18.64146"N	83°32'35.74405"E	2454045.61	762262.2
7	22°10'16.51508"N	83°32'34.16975"E	2453979.428	762218.2
8	22°10'15.42191"N	83°32'33.78884"E	2453945.61	762207.9
9	22°10'13.80567"N	83°32'33.22567"E	2453895.61	762192.6
10	22°10'12.18942"N	83°32'32.66251"E	2453845.61	762177.3
11	22°10'10.57318"N	83°32'32.09936"E	2453795.61	762161.9
12	22°10'08.95693"N	83°32'31.53620"E	2453745.61	762146.6
13	22°10'06.99115"N	83°32'30.85127"E	2453684.797	762128
14	22°10'08.15498"N	83°32'27.97565"E	2453719.226	762045
15	22°10'09.28066"N	83°32'25.19425"E	2453752.527	761964.7
16	22°10'07.44743"N	83°32'24.12875"E	2453695.61	761935.1
17	22°10'05.83698"N	83°32'23.19272"E	2453645.61	761909.1
18	22°10'04.22654"N	83°32'22.25671"E	2453595.61	761883.1
19	22°10'02.61609"N	83°32'21.32070"E	2453545.61	761857.1
20	22°10'01.00564"N	83°32'20.38470"E	2453495.61	761831.1
21	22°09'59.39518"N	83°32'19.44870"E	2453445.61	761805.2
22	22°09'57.78473"N	83°32'18.51271"E	2453395.61	761779.2
23	22°09'56.17427"N	83°32'17.57673"E	2453345.61	761753.2
24	22°09'54.56381"N	83°32'16.64075"E	2453295.61	761727.2
25	22°09'52.74576"N	83°32'15.58413"E	2453239.165	761697.8
26	22°09'52.12671"N	83°32'12.85036"E	2453218.808	761619.8
27	22°09'51.58820"N	83°32'10.47218"E	2453201.1	761551.9
28	22°09'50.83555"N	83°32'09.28420"E	2453177.373	761518.2
29	22°09'49.81209"N	83°32'08.71433"E	2453145.61	761502.4
30	22°09'49.39276"N	83°32'08.48085"E	2453132.596	761496
31	22°09'48.35561"N	83°32'07.89048"E	2453100.402	761479.6
32	22°09'46.91499"N	83°32'06.28761"E	2453055.309	761434.4
33	22°09'44.99007"N	83°32'05.30113"E	2452995.61	761407.1
34	22°09'43.45726"N	83°32'04.51562"E	2452948.072	761385.4
35	22°09'42.62717"N	83°32'02.44148"E	2452921.539	761326.4
36	22°09'41.17420"N	83°32'01.70038"E	2452876.479	761305.9
37	22°09'40.23261"N	83°31'59.03153"E	2452846.231	761229.9
38	22°09'38.25812"N	83°31'58.18225"E	2452785.073	761206.5
39	22°09'36.96875"N	83°31'58.61891"E	2452745.61	761219.7
40	22°09'35.33510"N	83°31'59.17216"E	2452695.61	761236.4
41	22°09'33.49973"N	83°31'59.79371"E	2452639.436	761255.2
42	22°09'32.08661"N	83°31'59.06892"E	2452595.61	761235.1
43	22°09'30.47442"N	83°31'58.24205"E	2452545.61	761212.2
44	22°09'28.86222"N	83°31'57.41520"E	2452495.61	761189.4
45	22°09'26.74876"N	83°31'56.33126"E	2452430.064	761159.4

Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
46	22°09'25.62050"N	83°31'56.87629"E	2452395.61	761175.6
47	22°09'24.41251"N	83°31'57.45983"E	2452358.721	761192.9
48	22°09'22.37465"N	83°31'56.60322"E	2452295.61	761169.4
49	22°09'20.76015"N	83°31'55.92458"E	2452245.61	761150.8
50	22°09'19.14564"N	83°31'55.24594"E	2452195.61	761132.2
51	22°09'17.53114"N	83°31'54.56731"E	2452145.61	761113.6
52	22°09'15.91663"N	83°31'53.88869"E	2452095.61	761094.9
53	22°09'14.30212"N	83°31'53.21006"E	2452045.61	761076.3
54	22°09'12.68761"N	83°31'52.53145"E	2451995.61	761057.7
55	22°09'11.86211"N	83°31'52.18447"E	2451970.045	761048.2
56	22°09'11.07590"N	83°31'51.67236"E	2451945.61	761033.9
57	22°09'09.46713"N	83°31'50.62446"E	2451895.61	761004.7
58	22°09'07.85834"N	83°31'49.57655"E	2451845.61	760975.5
59	22°09'06.24956"N	83°31'48.52866"E	2451795.61	760946.3
60	22°09'04.64077"N	83°31'47.48079"E	2451745.61	760917.1
61	22°09'03.03198"N	83°31'46.43291"E	2451695.61	760887.8
62	22°09'01.42319"N	83°31'45.38503"E	2451645.61	760858.6
63	22°08'59.81440"N	83°31'44.33717"E	2451595.61	760829.4
64	22°08'58.68731"N	83°31'43.60307"E	2451560.581	760809
65	22°08'59.85880"N	83°31'41.47463"E	2451595.61	760747.4
66	22°09'01.42193"N	83°31'38.62830"E	2451642.347	760665
P-1	22°08'23.04807"N	83°31'08.14135"E	2450447.139	759810.7
P-2	22°08'24.12115"N	83°31'06.83171"E	2450479.533	759772.6
P-3	22°08'25.19422"N	83°31'05.52207"E	2450511.927	759734.6
P-4	22°08'26.26728"N	83°31'04.21242"E	2450544.321	759696.5
P-5	22°08'27.34035"N	83°31'02.90276"E	2450576.715	759658.4
P-6	22°08'28.40762"N	83°31'01.58767"E	2450608.928	759620.1
P-7	22°08'29.47261"N	83°31'00.27044"E	2450641.07	759581.8
P-8	22°08'30.53760"N	83°30'58.95320"E	2450673.212	759543.5
P-9	22°08'31.60259"N	83°30'57.63596"E	2450705.355	759505.2
P-10	22°08'32.66757"N	83°30'56.31871"E	2450737.497	759466.9
P-11	22°08'33.73255"N	83°30'55.00145"E	2450769.639	759428.6
P-12	22°08'34.79753"N	83°30'53.68419"E	2450801.781	759390.3
P-13	22°08'35.86251"N	83°30'52.36692"E	2450833.923	759352
P-14	22°08'36.92748"N	83°30'51.04964"E	2450866.065	759313.7
P-15	22°08'37.99245"N	83°30'49.73237"E	2450898.208	759275.4
P-16	22°08'39.05742"N	83°30'48.41508"E	2450930.35	759237.1
P-17	22°08'40.12238"N	83°30'47.09779"E	2450962.492	759198.8
P-18	22°08'41.18734"N	83°30'45.78049"E	2450994.634	759160.5
P-19	22°08'42.25230"N	83°30'44.46319"E	2451026.776	759122.2
P-20	22°08'43.31726"N	83°30'43.14588"E	2451058.918	759083.9
P-21	22°08'44.38221"N	83°30'41.82856"E	2451091.06	759045.6
P-22	22°08'45.44716"N	83°30'40.51124"E	2451123.202	759007.3



Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
P-23	22°08'46.51211"N	83°30'39.19391"E	2451155.344	758969
P-24	22°08'47.57705"N	83°30'37.87658"E	2451187.486	758930.7
P-25	22°08'48.64199"N	83°30'36.55924"E	2451219.628	758892.4
P-26	22°08'49.70693"N	83°30'35.24190"E	2451251.77	758854.1
P-27	22°08'50.77187"N	83°30'33.92455"E	2451283.912	758815.8
P-28	22°08'51.83680"N	83°30'32.60719"E	2451316.054	758777.5
P-29	22°08'52.90173"N	83°30'31.28983"E	2451348.196	758739.2
P-30	22°08'53.96666"N	83°30'29.97246"E	2451380.338	758700.9
P-31	22°08'55.03158"N	83°30'28.65508"E	2451412.48	758662.6
P-32	22°08'56.09650"N	83°30'27.33770"E	2451444.621	758624.3
P-33	22°08'57.16142"N	83°30'26.02032"E	2451476.763	758586
P-34	22°08'58.22634"N	83°30'24.70292"E	2451508.905	758547.7
P-35	22°08'59.29123"N	83°30'23.38550"E	2451541.047	758509.4
P-36	22°09'00.35611"N	83°30'22.06807"E	2451573.187	758471.1
P-37	22°09'01.42098"N	83°30'20.75063"E	2451605.328	758432.8
P-38	22°09'02.48586"N	83°30'19.43319"E	2451637.469	758394.5
P-39	22°09'03.55073"N	83°30'18.11573"E	2451669.61	758356.2
P-40	22°09'04.61559"N	83°30'16.79828"E	2451701.751	758317.9
P-41	22°09'05.68046"N	83°30'15.48082"E	2451733.892	758279.6
P-42	22°09'06.74533"N	83°30'14.16335"E	2451766.033	758241.3
P-43	22°09'07.46899"N	83°30'13.26802"E	2451787.875	758215.3
P-44	22°09'09.58210"N	83°30'13.66660"E	2451853.079	758225.7
P-45	22°09'11.18243"N	83°30'13.96847"E	2451902.461	758233.5
P-46	22°09'12.78277"N	83°30'14.27034"E	2451951.842	758241.3
P-47	22°09'14.38310"N	83°30'14.57221"E	2452001.224	758249.2
P-48	22°09'16.13619"N	83°30'14.90290"E	2452055.319	758257.8
P-49	22°09'17.19781"N	83°30'15.99405"E	2452088.499	758288.5
P-50	22°09'18.40630"N	83°30'17.15985"E	2452126.232	758321.3
P-51	22°09'19.65277"N	83°30'18.27817"E	2452165.112	758352.7
P-52	22°09'20.88625"N	83°30'19.41058"E	2452203.599	758384.6
P-53	22°09'22.16425"N	83°30'20.48124"E	2452243.427	758414.6
P-54	22°09'23.47468"N	83°30'21.51227"E	2452284.234	758443.5
P-55	22°09'24.70402"N	83°30'22.64744"E	2452322.595	758475.4
P-56	22°09'25.85102"N	83°30'23.88294"E	2452358.471	758510.2
P-57	22°09'27.06220"N	83°30'25.04476"E	2452396.286	758542.9
P-58	22°09'28.40739"N	83°30'26.01833"E	2452438.135	758570.1
P-59	22°09'29.71020"N	83°30'27.04490"E	2452478.706	758598.9
P-60	22°09'30.84357"N	83°30'28.29484"E	2452514.169	758634.1
P-61	22°09'32.32494"N	83°30'28.93227"E	2452560.05	758651.6
P-62	22°09'33.92918"N	83°30'28.90088"E	2452609.394	758649.9
P-63	22°09'35.44409"N	83°30'29.51313"E	2452656.294	758666.7
P-64	22°09'36.94735"N	83°30'30.15660"E	2452702.852	758684.4
P-65	22°09'38.14665"N	83°30'31.22754"E	2452740.259	758714.5

Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
P-66	22°09'38.69891"N	83°30'32.86209"E	2452758.025	758761
P-67	22°09'39.11630"N	83°30'34.53720"E	2452771.661	758808.8
P-68	22°09'39.25688"N	83°30'36.27502"E	2452776.81	758858.6
P-69	22°09'39.39693"N	83°30'38.01289"E	2452781.942	758908.3
P-70	22°09'39.51821"N	83°30'39.75170"E	2452786.498	758958.1
P-71	22°09'39.52651"N	83°30'41.49604"E	2452787.581	759008
P-72	22°09'39.64053"N	83°30'43.23579"E	2452791.914	759057.9
P-73	22°09'39.76340"N	83°30'44.97516"E	2452796.519	759107.6
P-74	22°09'39.91568"N	83°30'46.71177"E	2452802.029	759157.3
P-75	22°09'39.82875"N	83°30'48.43558"E	2452800.172	759206.8
P-76	22°09'39.40084"N	83°30'50.10970"E	2452787.8	759255
P-77	22°09'38.78232"N	83°30'51.72273"E	2452769.536	759301.5
P-78	22°09'38.16381"N	83°30'53.33577"E	2452751.271	759348.1
P-79	22°09'37.97687"N	83°30'55.04947"E	2452746.333	759397.3
P-80	22°09'38.08063"N	83°30'56.78989"E	2452750.352	759447.1
P-81	22°09'38.25595"N	83°30'58.50929"E	2452756.563	759496.3
P-82	22°09'38.36968"N	83°31'00.24819"E	2452760.888	759546.1
P-83	22°09'38.27527"N	83°31'01.98894"E	2452758.811	759596
P-84	22°09'38.14338"N	83°31'03.72737"E	2452755.579	759645.9
P-85	22°09'38.06146"N	83°31'05.46797"E	2452753.886	759695.8
P-86	22°09'38.13544"N	83°31'07.21051"E	2452756.991	759745.7
P-87	22°09'38.32099"N	83°31'08.94338"E	2452763.524	759795.3
P-88	22°09'38.68937"N	83°31'10.64131"E	2452775.666	759843.8
P-89	22°09'39.10116"N	83°31'12.32846"E	2452789.139	759891.9
P-90	22°09'39.60645"N	83°31'13.98224"E	2452805.473	759939.1
P-91	22°09'40.37876"N	83°31'15.50753"E	2452829.961	759982.4
P-92	22°09'41.80987"N	83°31'16.07499"E	2452874.264	759997.9
P-93	22°09'43.41568"N	83°31'15.82706"E	2452923.554	759990
P-94	22°09'44.95747"N	83°31'15.28485"E	2452970.734	759973.7
P-95	22°09'46.44458"N	83°31'14.58817"E	2453016.158	759952.9
P-96	22°09'47.92900"N	83°31'13.88174"E	2453061.494	759931.9
P-97	22°09'49.44078"N	83°31'13.24244"E	2453107.705	759912.8
P-98	22°09'50.99557"N	83°31'12.74798"E	2453155.308	759897.9
P-99	22°09'52.58793"N	83°31'12.40615"E	2453204.139	759887.3
P-100	22°09'54.19137"N	83°31'12.13084"E	2453253.343	759878.5
P-101	22°09'55.81342"N	83°31'12.10562"E	2453303.238	759877
P-102	22°09'57.30860"N	83°31'12.67825"E	2453349.515	759892.6
P-103	22°09'58.23104"N	83°31'13.97161"E	2453378.512	759929.2
P-104	22°09'58.28555"N	83°31'15.70217"E	2453381.013	759978.8
P-105	22°09'57.62137"N	83°31'17.25692"E	2453361.318	760023.7
P-106	22°09'57.10514"N	83°31'18.20265"E	2453345.885	760051.1
P-107	22°09'57.41859"N	83°31'19.85827"E	2453356.317	760098.4
P-108	22°09'59.44693"N	83°31'20.90561"E	2453419.225	760127.3



Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
P-109	22°10'01.05853"N	83°31'20.96482"E	2453468.839	760128.2
P-110	22°10'02.64297"N	83°31'20.59378"E	2453517.412	760116.8
P-111	22°10'04.22514"N	83°31'20.19797"E	2453565.904	760104.6
P-112	22°10'05.76881"N	83°31'19.65355"E	2453613.141	760088.2
P-113	22°10'07.26848"N	83°31'18.99914"E	2453658.972	760068.7
P-114	22°10'08.72591"N	83°31'18.23853"E	2453703.452	760046.2
P-115	22°10'10.15792"N	83°31'17.44111"E	2453747.132	760022.6
P-116	22°10'11.50916"N	83°31'16.47417"E	2453788.247	759994.2
P-117	22°10'12.82114"N	83°31'15.44613"E	2453828.125	759964
P-118	22°10'14.15984"N	83°31'14.45748"E	2453868.844	759935
P-119	22°10'15.59564"N	83°31'13.64618"E	2453912.634	759911
P-120	22°10'17.16857"N	83°31'13.38132"E	2453960.904	759902.6
P-121	22°10'18.73541"N	83°31'13.80317"E	2454009.314	759913.9
P-122	22°10'20.31468"N	83°31'14.20865"E	2454058.098	759924.7
P-123	22°10'21.87955"N	83°31'14.67195"E	2454106.467	759937.2
P-124	22°10'23.43725"N	83°31'15.14214"E	2454154.618	759949.9
P-125	22°10'24.85232"N	83°31'15.99711"E	2454198.565	759973.7
P-126	22°10'26.27416"N	83°31'16.82638"E	2454242.707	759996.7
P-127	22°10'27.73890"N	83°31'17.58069"E	2454288.134	760017.6
P-128	22°10'29.17036"N	83°31'18.39795"E	2454332.567	760040.3
P-129	22°10'30.67350"N	83°31'19.05701"E	2454379.129	760058.4
P-130	22°10'32.18763"N	83°31'19.68902"E	2454426.018	760075.7
P-131	22°10'33.70433"N	83°31'20.31053"E	2454472.98	760092.8
P-132	22°10'35.18270"N	83°31'21.03424"E	2454518.812	760112.7
P-133	22°10'36.68562"N	83°31'21.68274"E	2454565.363	760130.6
P-134	22°10'37.66067"N	83°31'21.96443"E	2454595.498	760138.1
P-135	22°10'39.18900"N	83°31'22.40602"E	2454642.732	760150
P-136	22°10'39.38811"N	83°31'24.26336"E	2454649.744	760203.1
P-137	22°10'39.63650"N	83°31'26.57318"E	2454658.488	760269.2
P-138	22°10'39.82259"N	83°31'28.30625"E	2454665.04	760318.8
P-139	22°10'40.00869"N	83°31'30.03933"E	2454671.592	760368.3
P-140	22°10'40.19477"N	83°31'31.77241"E	2454678.145	760417.9
P-141	22°10'40.38086"N	83°31'33.50549"E	2454684.697	760467.5
P-142	22°10'40.56698"N	83°31'35.23856"E	2454691.251	760517
P-143	22°10'40.75311"N	83°31'36.97163"E	2454697.805	760566.6
P-144	22°10'40.93924"N	83°31'38.70471"E	2454704.359	760616.2
P-145	22°10'41.12536"N	83°31'40.43778"E	2454710.914	760665.7
P-146	22°10'41.31148"N	83°31'42.17085"E	2454717.468	760715.3
P-147	22°10'41.49758"N	83°31'43.90393"E	2454724.022	760764.9
P-148	22°10'41.68368"N	83°31'45.63700"E	2454730.576	760814.4
P-149	22°10'41.86977"N	83°31'47.37008"E	2454737.13	760864
P-150	22°10'42.05585"N	83°31'49.10316"E	2454743.684	760913.6
P-151	22°10'42.24193"N	83°31'50.83624"E	2454750.238	760963.2

Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
P-152	22°10'42.42801"N	83°31'52.56932"E	2454756.792	761012.7
P-153	22°10'42.61407"N	83°31'54.30240"E	2454763.346	761062.3
P-154	22°10'42.73122"N	83°31'55.39279"E	2454767.472	761093.5
P-155	22°10'42.92000"N	83°31'57.15199"E	2454774.122	761143.8
P-156	22°10'42.22769"N	83°31'58.75420"E	2454753.587	761190.1
P-157	22°10'41.30887"N	83°32'00.87996"E	2454726.334	761251.5
P-158	22°10'40.62495"N	83°32'02.46243"E	2454706.048	761297.2
P-159	22°10'39.94103"N	83°32'04.04490"E	2454685.763	761342.9
P-160	22°10'39.28536"N	83°32'05.64107"E	2454666.353	761388.9
P-161	22°10'38.63210"N	83°32'07.23841"E	2454647.019	761435
P-162	22°10'37.97884"N	83°32'08.83573"E	2454627.684	761481.2
P-163	22°10'37.32557"N	83°32'10.43305"E	2454608.349	761527.3
P-164	22°10'36.67230"N	83°32'12.03037"E	2454589.014	761573.4
P-165	22°10'36.01902"N	83°32'13.62768"E	2454569.679	761619.5
P-166	22°10'35.36574"N	83°32'15.22499"E	2454550.345	761665.6
P-167	22°10'34.71245"N	83°32'16.82230"E	2454531.01	761711.7
P-168	22°10'34.05917"N	83°32'18.41959"E	2454511.675	761757.8
P-169	22°10'33.40587"N	83°32'20.01689"E	2454492.34	761803.9
P-170	22°10'32.75258"N	83°32'21.61418"E	2454473.005	761850
P-171	22°10'32.09927"N	83°32'23.21146"E	2454453.671	761896.1
P-172	22°10'31.44597"N	83°32'24.80875"E	2454434.336	761942.3
P-173	22°10'30.79266"N	83°32'26.40602"E	2454415.001	761988.4
P-174	22°10'30.13935"N	83°32'28.00330"E	2454395.666	762034.5
P-175	22°10'29.48603"N	83°32'29.60056"E	2454376.331	762080.6
P-176	22°10'28.83271"N	83°32'31.19783"E	2454356.997	762126.7
P-177	22°10'28.10539"N	83°32'32.75029"E	2454335.363	762171.6
P-178	22°10'27.17058"N	83°32'34.17714"E	2454307.286	762212.9
P-179	22°10'26.23576"N	83°32'35.60398"E	2454279.209	762254.3
P-180	22°10'25.30095"N	83°32'37.03083"E	2454251.131	762295.7
P-181	22°10'24.64489"N	83°32'38.03160"E	2454231.426	762324.7
P-182	22°10'23.69500"N	83°32'39.48202"E	2454202.896	762366.8
P-183	22°10'22.33544"N	83°32'38.47603"E	2454160.581	762338.6
P-244	22°09'00.36456"N	83°31'37.83979"E	2451609.437	760642.9
P-245	22°08'59.02654"N	83°31'36.85024"E	2451567.797	760615.2
P-246	22°08'57.68851"N	83°31'35.86069"E	2451526.156	760587.6
P-247	22°08'56.35049"N	83°31'34.87114"E	2451484.516	760559.9
P-248	22°08'55.01246"N	83°31'33.88160"E	2451442.875	760532.2
P-249	22°08'53.67443"N	83°31'32.89207"E	2451401.235	760504.5
P-250	22°08'52.33639"N	83°31'31.90254"E	2451359.594	760476.8
P-251	22°08'50.99836"N	83°31'30.91302"E	2451317.954	760449.2
P-252	22°08'49.66032"N	83°31'29.92350"E	2451276.313	760421.5
P-253	22°08'48.32228"N	83°31'28.93399"E	2451234.673	760393.8
P-254	22°08'46.98424"N	83°31'27.94448"E	2451193.032	760366.1

Point ID	Geographical Co-ordinates (WGS-84)		UTM Co-ordinates	
	Latitude	Longitude	Northing (m)	Easting (m)
P-255	22°08'45.64619"N	83°31'26.95498"E	2451151.391	760338.5
P-256	22°08'44.30815"N	83°31'25.96548"E	2451109.751	760310.8
P-257	22°08'42.97010"N	83°31'24.97599"E	2451068.11	760283.1
P-258	22°08'41.63205"N	83°31'23.98651"E	2451026.47	760255.4
P-259	22°08'40.29399"N	83°31'22.99703"E	2450984.829	760227.7
P-260	22°08'38.95594"N	83°31'22.00755"E	2450943.189	760200.1
P-261	22°08'37.61788"N	83°31'21.01808"E	2450901.548	760172.4
P-262	22°08'36.27982"N	83°31'20.02862"E	2450859.908	760144.7
P-263	22°08'34.94176"N	83°31'19.03916"E	2450818.267	760117
P-264	22°08'33.60369"N	83°31'18.04971"E	2450776.627	760089.4
P-265	22°08'32.26563"N	83°31'17.06026"E	2450734.986	760061.7
P-266	22°08'30.97820"N	83°31'16.10966"E	2450694.922	760035.1
P-267	22°08'29.58949"N	83°31'15.08138"E	2450651.705	760006.3
P-268	22°08'28.25141"N	83°31'14.09195"E	2450610.065	759978.6
P-269	22°08'26.91334"N	83°31'13.10253"E	2450568.424	759951
P-270	22°08'25.57526"N	83°31'12.11311"E	2450526.783	759923.3
P-271	22°08'24.23718"N	83°31'11.12369"E	2450485.143	759895.6
P-272	22°08'22.89910"N	83°31'10.13428"E	2450443.502	759867.9
P-273	22°08'21.97500"N	83°31'09.45098"E	2450414.745	759848.8