REPORT ON DGPS SURVEY FOR

Chhotedongar Iron ore Mine

M/s. Shri. Bajarang Power & Ispat Ltd.,
Village-Narayanpur, District.- Narayanpur,
State - Chhattisgarh

GOEL

2015-16

Prepared By:

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Report On

DGPS Survey & Preparation of Geo-reference Forest Compartment Map of Chhotedongar Iron ore Mine (Lease area : 57.0 Ha)

Range - Chhote Dongar, Div. Narayanpur,

Dist. Narayanpur,

State Chhattisgarh.

For

M/s Shri Bajarang Power & Ispat Ltd.
May, 2015

Prepared by,

For Shri Bajrang Power & Ispat Ltd.

Director/Authorised Signatory

Soham Ferro Manganese Private Limited (SFMPL)
NKY Tower, Block No.16/17, Ajani Sq.Wardha Road,
Nagpur-440015

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M/S SOHAM FERRO MANGANESE PVT. LTD : NAGPUR, INDIA

ACKNOWLEDGEMENT

WE EXPRESS OUR SINCERE GRATITUDE TO THE OFFICIALS OF

M/S SHRI BAJARANG POWER & ISPAT LIMITED, RAIPUR.

FOR THEIR IMMENSE ASSISTANCE AND CO-OPERATION EXTENDED DURING THE COURSE OF DGPS SURVEY AND DICCUSSIONS, WITHOUT WHICH THIS REPORT COULD NOT HAVE BEEN PREPARED SUCCESSFULLY.

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GOEL

OUR EMPANELMENTS

We M/s. Soham Ferro Manganese Pvt. Ltd., would like to impress upon you that, our organization has been duly empanelled by **Govt. of Chhattisgarh, Ministry of Mines and Minerals**, Mahanadi Bhavan – Raipur – 492 0002 vide their notification dt. 10.11.2014 for carrying Differential Global Positioning Systems (DGPS) survey.

Our organization has been also duly empanelled by **Govt. of Maharashtra, Directorate of Geology and Mining** , Old Secretariat Building, Civil Lines, Nagpur vide their order bearing no. NO/MC/AUTHO/NOC/355 dt. 18.05.2011 for carrying Differential Global Positioning Systems (DGPS) survey against Circular No. 02/2010 dt. 06.04.2010 issued by M/s. Indian Bureau of Mines, Govt. of India, who have authorized us for preparing field maps using DGPS Instruments as per the directives mentioned in the said circular and for preparing cadastral maps / other maps vide order no. MC/AUTHO/NOC/355/2011/927 dt. 15.03.2011.

Our organization has been also duly empanelled by **Govt. of Jharkhand, Department of Mines** and Geology, Directorate of Geology, Engineers Hostel, 2nd Floor, Dhurwa – Ranchi. vide their letter bearing no. 1952 dt. 26.12.2014 for carrying Geo referencing and Cadastral Map as per Guide lines issued by IBM Letter No. 02/2010 dt. 06.04.2010 and Subsequent Guide Lines.

For Soham Ferro Manganese Pvt. Ltd.,

(Nitin .Y. Selukar)
Director.

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For Soham Ferro Manganese Pvt. Ltd.,

(Nitin .Y. Selukar)
Director.

By Speed post

छत्तीसगढ़ शासन
खनिज साधन विभाग
मंत्रालय
महानदी भवन, नया रायपुर–492002

//अधिसूचना//

रायपुर, दिनांक 10 NOV 2014 नवम्बर 2014

क्रमांक एफ 7–14/2013/12: राज्य शासन एतद द्वारा चीफ कन्ट्रोलर ऑफ माइन्स भारतीय खान ब्यूरो नागपुर के परिपत्र क्रमांक 2/2010, दिनांक 06.4.2010 के पैरा–2 के बिन्दु–2 के तारतम्य में समस्त खनिजों के खनिज रियायतों के सीमा स्तम्भ का Differential Globle Positioning System (डीजीपीएस) का उपयोग करते हुए सर्वेक्षण करने के लिए तालिका में दर्शित संस्थानों को अधिमान्यता प्रदान करता है–

क्र.	एजेंसी का नाम एवं पता
1	2
1	M/S SHREERAM GEMICON (PVT.) LIMITED GEOLOGICAL AND MINING CONSULTANTS L-09, Songanga Colony Seepat Road, Bilaspur (Chhattisgarh)
2	M/S SINHA MINING CONSULTANCY, GOA Office No. 9, D.Costa Commercial Apartment, Near Old Railway Station Gate, Malbhat, Margo - 403601, Goa-India
3	M/S SPATIAL PLANNING AND ANALYSIS RESEARCH CENTRE PVT. LTD. E 11, Infocity, Chandaka Industrial Estate, Bhubaneshwar, Orissa, India, Pin - 751024
4	M/S SIDDHARTH GEO CONSULTANTS, 21 3, First Floor Ramkund, Samta Colony, Behind Lifeworth Hospital, Raipur (Chhattisgarh) 492001
5	M/S SOHAM FERRO MANGANESE PVT. LTD. Block No. 16,17 Ground Floor N.K.Y. Tower, Anjani Sq. Wardha Road, Nagpur (Maharashtra)
6	M/S SAN SURVEY ENGINEERING , HOOGHLY(WB) Regd. Off. - 465, Jiban Pal Bagan, Karbala (West), P.O. & Dist. - Hooghly, West Bengal, Pin - 712103 Contact Office - Anjali Complex, Bankim Kanan, Chinsurah Station Road, Chinsurah, Hoogly, West Bengal -712102
7	M/S GEOTRAX INTERNATION SERVICES, HYDERABAD (TELANGANA) Plate No 156 & 157, Lokayuta Colony, Badangpet Nadergul, Hyderabad 500058, Telangana
8	M/S RAFT CONTRACTORS AND DESIGNERS, Plot No. D-36, Ground Floor, Koelnagar, Raurkela, Dist. Sundargarh, Orissa, Pin No. - 769014
9	M/S MICRONET SOLUTION, Bisesar House, Opp. HSSC Board Office, (P.B. 85 G.P.O.) Civil Line, Nagpur, Maharashtra - 440001
10	M/S BHARAT ALUMINIUM COMPANY LIMITED (BALCO) P.O. Balco Nagar Korba(C.G.), India, Pin 495684

2/ अधिमान्यता प्राप्त संस्थानों के लिए शर्तें–

2.1. The Survey Agency Shall Be responsible for the accuracy of the data collected and Survey.

2.2. Coordinates of boundry pillars shall be established in the World Geodetic System 1984 (WGS-84) Datum.

2.3 Each boundry pillar shall be surved using DGPS, at least 2 Hours observation for its ground position.

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2.4 The maximum distance between any two successive pillars should not be more than 100 meter.

2.5 All corner pillar should be of pyramid shaped whith base of 1 meter and height of 2 meter and should be placed 1 mater above the ground and 1 meter below the ground.

2.6 Distance and bearing to the forward and backward pillars and latitudes and longitudes should be market on all the corner pillars.

2.7 डीजीपीएस सर्वे कार्य हेतु पारिश्रमिक का निर्धारण अधिमान्य प्राप्त संस्थान एवं खनिज रियायतधारी के मध्य आपसी समन्वय से किया जाएगा। किसी भी प्रकार का आपसी विवाद होने पर राज्य शासन उत्तरदायी नही होगा।

2.8 डीजीपीएस सर्वे कार्य के गुणवत्ता में कमी पाये जाने पर या किसी भी प्रकार की कार्य संबंधी शिकायत पाये जाने पर जाच उपरांत राज्य शासन को यह अधिकार होगा कि उक्त अधिकृत एजेंसी की मान्यता किसी भी समय समाप्त की जा सकती है।

2.9 डीजीपीएस सर्वे के संबंध मे भारतीय खान ब्यूरो/राज्य शासन द्वारा समय-समय पर जारी निर्देशों का पालन अधिमान्यता प्राप्त संस्थान को करना होगा।

2.10 राज्य शासन द्वारा जारी यह अधिमान्यता 03 वर्ष के लिए होगी। समयावधि समाप्ति से 03 माह पूर्व अधिकृत एजेंसी नवीनीकरण हेतु आवेदन कर सकेगा।

2.11 भारत सरकार एवं राज्य शासन द्वारा डीजीपीएस सर्वे के संबंध में समय-समय पर जारी निर्देशों का पालन किया जाना होगा।

3/ यह अधिमान्यता अधिसूचना के जारी होने की तिथि से 03 वर्ष के लिए होगी।

छत्तीसगढ़ के राज्यपाल के नाम से
तथा आदेशानुसार,

(सुबोध कुमार सिंह)
सचिव
छत्तीसगढ़ शासन
खनिज साधन विभाग

पृ. क्रमांक एफ 7-14/2013/12 रायपुर, दिनांक नवम्बर 2014
10 NOV 2014

प्रतिलिपि –

1. सचिव, भारत सरकार, खान मंत्रालय, शास्त्री भवन, नई दिल्ली.
2. कंट्रोलर जनरल, भारतीय खान ब्यूरो, सेकण्ड फ्लोर, ए-ब्लॉक, इन्दरा भवन, सिविल लाईन, नागपुर (महाराष्ट्र)
3. चीफ कन्ट्रोलर ऑफ माईन्स, भारतीय खान ब्यूरो, सेकण्ड फ्लोर, ए-ब्लॉक, इन्दरा भवन, सिविल लाईन, नागपुर (महाराष्ट्र)
4. क्षेत्रीय खान नियंत्रक, भारतीय खान ब्यूरो, छटवां तल, बी एवं सी -ब्लॉक, इन्दरा भवन, सिविल लाईन, नागपुर (महाराष्ट्र)
5. संचालक, भौमिकी तथा खनिकर्म, छत्तीसगढ़ ब्लॉक-4, द्वितीय तल, इन्द्रावती भवन, नया रायपुर,
6. समस्त कलेक्टर, जिला ---------- छत्तीसगढ़

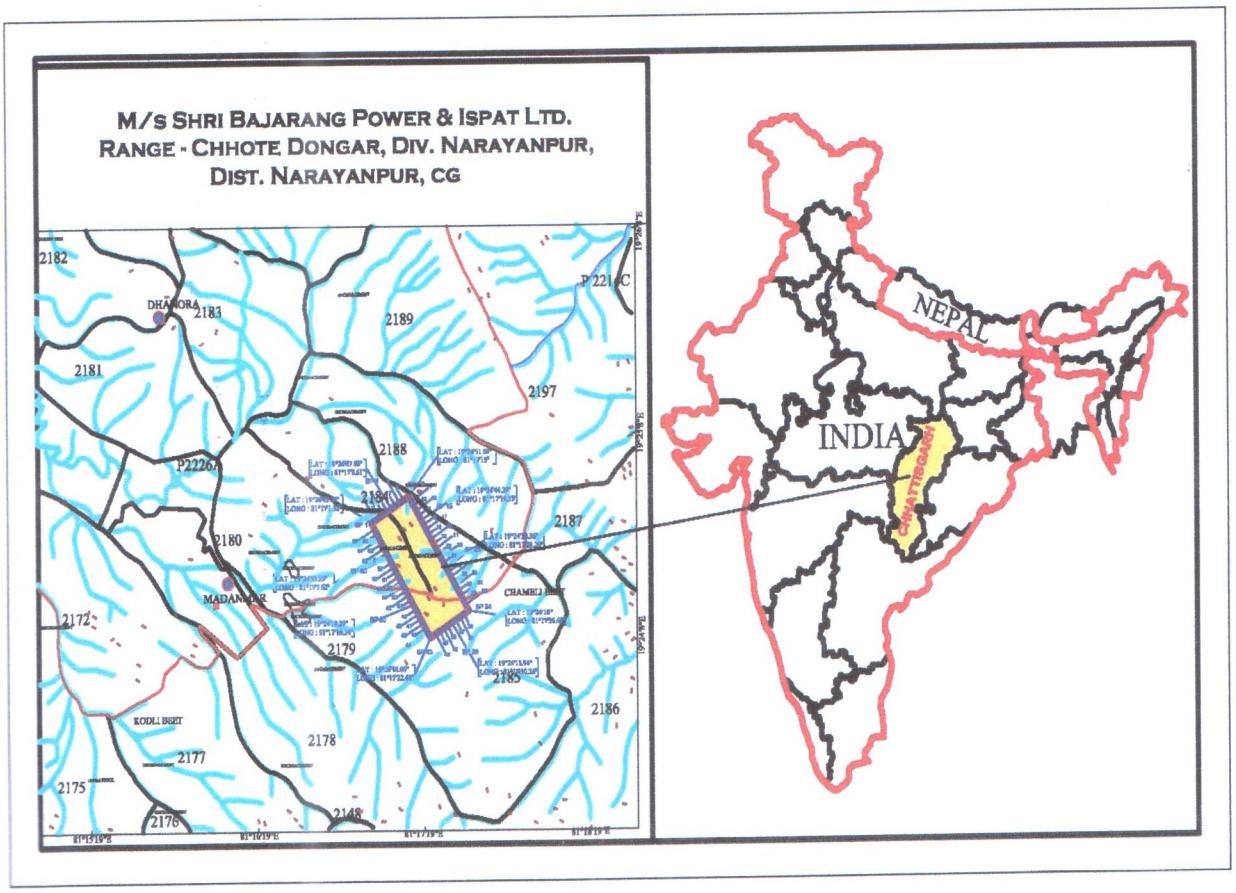
.....3

1) INTRODUCTION

Almost 20-25 Years highly regarded move toward record of growth & performance of well experienced professional on Goel Group boasts a team in Chhattisgarh State. Goel Group is economically Capable, Highly Resourceful & having good position & friendliness in the Corporate Sector.

M/s. Shri Bajarang Power & Ispat Limited have received a Mining Lease area at chhotedongar for Iron ore exploitation. Iron ore is a necessary mineral required in the Steel plants. The work of DGPS survey Mandatory Central & State Government as per the reference to IBM Circular Indian Beuro of Mines (IBM) wide circular No. N/110913-3MP-90-CCOM-V-VII dated 6-4-2010. Directed the entire lease holder to carry out DGPS survey for all the lease boundary pillars. In view of the above Shri Bajarang Power & Ispat Limited vide their Work Order No. SBPIL/WO/16-17/913 Dated 31th May 2015 has awarded work of DGPS survey to our consultancy firm.

3) LOCATION AND ACCESSIBILITY



2) IDENTIFICATION AND DEMARCATION

The Shri Bajarang Power & Ispat having a mining lease area forming part of forest compartment no. 2185, 2184, 2180 & 2179 near village Chhote Dongar falls within Survey of India Toposheet No. 65 E 7/2 having co-ordinates of latitude 19°24'43.92"N and longitude 81 °17' 1.32"E. Located area "Chhote Dongar" which is nearest Dist.6.5 km from Dhaudai village. The mines area is approachable by Rajnandgaon-Narayanpur State Highway Road (SH-05) bifurcating from Dhaudai village, which is exactly 45 kms from narayanpur district. It is about 180 kms from Rajnandgaon railway station connected by broad gauge line from Howrah to Mumbai.

4) SCOPE OF WORK

1.1 Survey of all the lease boundary pillars by using DGPS (At least 2 hours observation) and fix up its ground position and preparation of Geo – referenced plan.

1.2 The Geo – referenced lease map preparing using DGPS shall be superimposed on vectorised cadastral map.

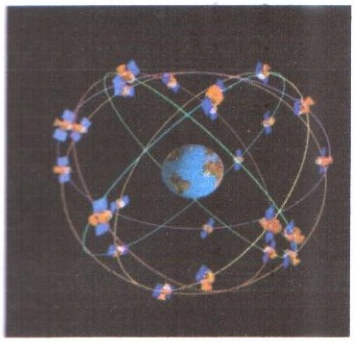
1.3 In case of forest areas, the boundary pillar shall be fixed on ground with reference to at least three permanent ground features in and around Mining Lease Area.

1.4 Purchase of latest high resolution satellite data (cloud free) derived from merging of Cartosat-2 and Liss – IV (Scale 1:5000) covering an area of 500 m from the Mining Lease boundary from NRSC and the geo – referenced map shall be superimposed on high resolution satellite image.

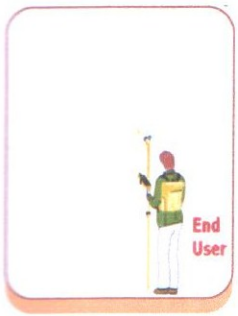
1.5 Preparation of soft copy of all above map in standard format and digitized map in shape file which can be imported by any GIS database.

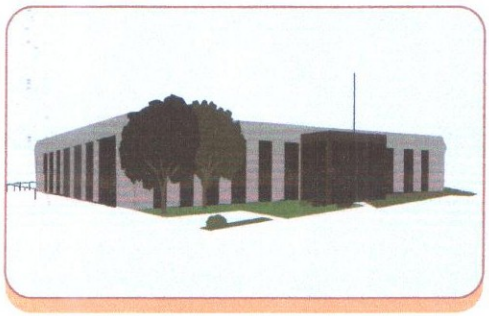
5. DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS)

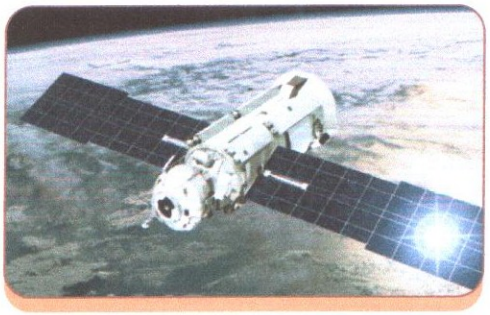
5. A] INTRODUCTION



The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. It consists of Three Segments:-







- **User Segment**
- **Control Segment**
- **Space Segment**

GPS uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters. In fact, with advanced forms of GPS you can make measurements to better than a centimeter. Surveying/Mapping most commonly used now days, in a sense it's like giving every square meter on the planet a unique tackle.

5. B] ACCURACY & INSTRUMENT USED

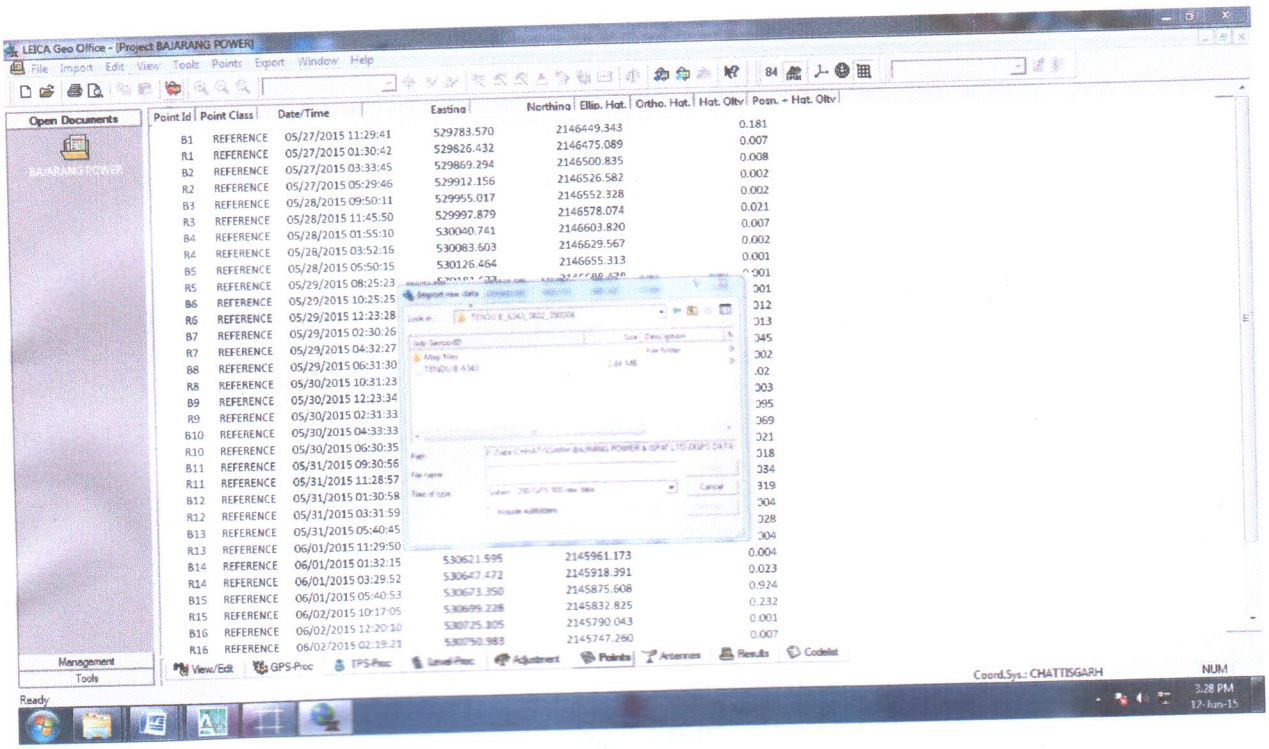
SFMPL Generally used Dual frequency Leica geo-office-GS05/06 DGPS equipments are to be used for all static mode of observation. By having the base station close to the area of interest there is minimum time lag and with the appropriate DGPS receiver, an accuracy of (+/-10mm) can be achieved. The accuracy of DGPS may be increased considerably by including a reference station (GPS receiver on a site with known coordinates). In the so-called post-processing method, the observations of the rover (GPS receiver) are then corrected so that, depending on the type of receiver, accuracies of a few decimeters or a few centimeters may be reached.

5. C] DATA PROCESSING IN LEICA GEO-OFFICE SOFTWARE

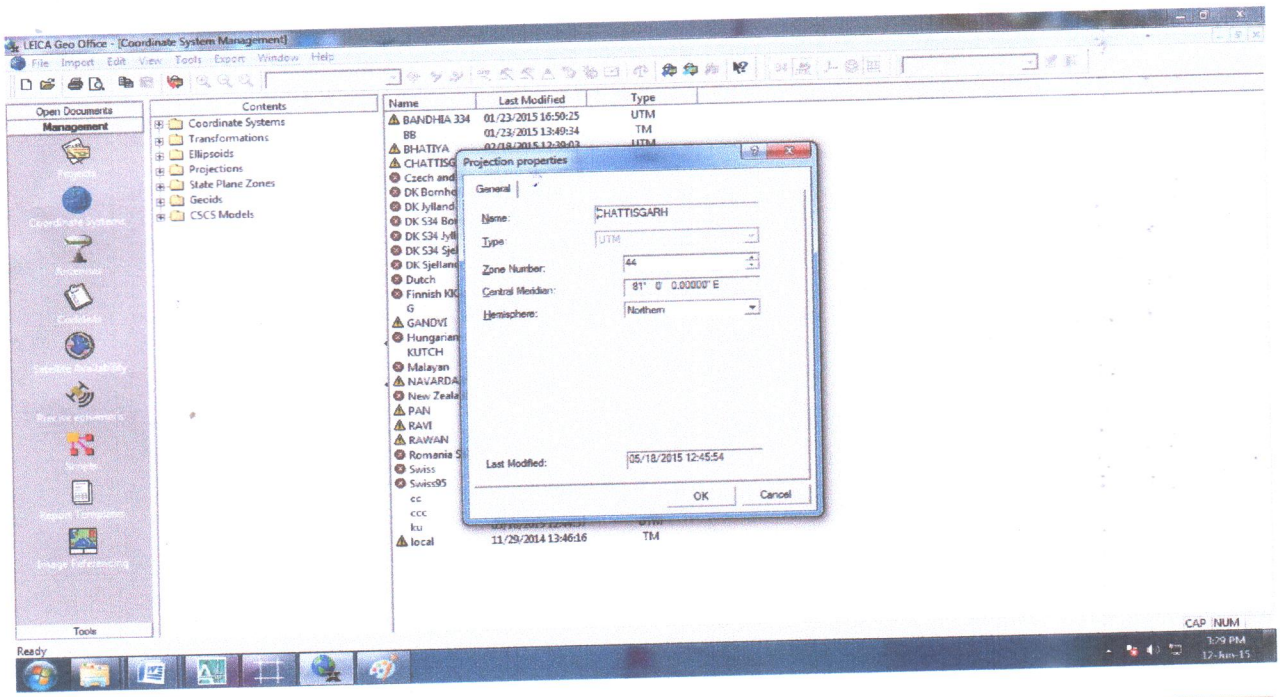
All the pillar coordinates were taken for two hours of reading and pillar points are used for georeferencing. The processed coordinates have been exported to Shape file from the Leica geo-office software. These co ordinates are imported in to GIS software and Georeferencing of cadastral map, lease map and LISS- IV image was carried out. The lease boundary was digitized using the processed coordinates of the pillars and georeferenced maps. These lease boundary was exported to shape file for the final submission as required by IBM.

Leica geo-office-GS05/06 antenna recorded field survey data are downloading in Leica Receiver as following steps:

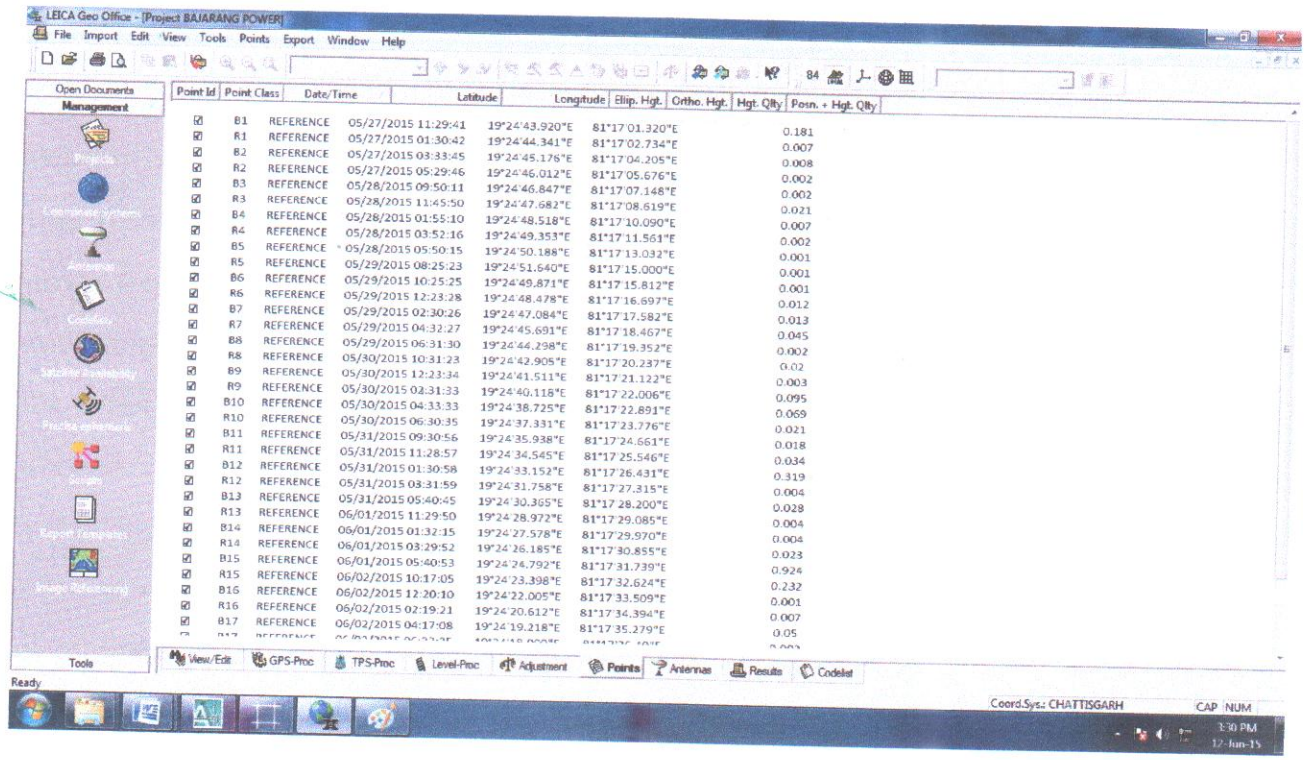
I] IMPORT



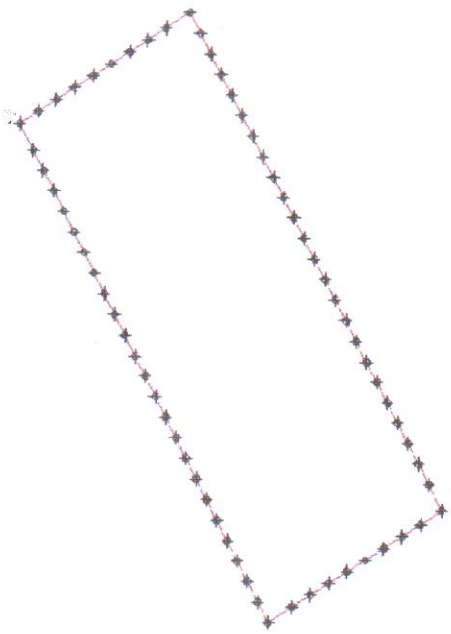
II] APPLYING PROJECTION SYSTEM



III] PROCESSING DATA



IV] POINT POSITION



6. METHODOLOGY ADOPTED FOR VECTORIZATION CADASTRAL MAP

6. A] INTRODUCTION OF VECTORIZATION CADASTRAL

Cadastral surveys are specially designed large scale surveys, some in conjunction with other records, which are linked to land ownership and property. In India Normally Land Record Department created a cadastral map on Tracing film or Cloth Paper. It is usually generating in most Common Scale Factor which is to be saying that 16"=1Mile (1:3960). This paper is very essential to the rural for it's village properties. The urban cadastral, although very vital needs a separate and detailed discussion. It's seen very older and shrinkage appearance quality. Receiving those maps to land record department to start with scanning in High Resolution scale and get converted into TIF format. AutoCAD Draftsmen digitize a map on his professional skilled with Different Colours, Layer, Polyline & Block Entities Etc. on this way generated a accurate scale map to help us the geo reference.

6. B] GEO REFERENCE VECTORIZATION CADASTRAL MAP

The term is commonly used in the geographic information systems field to describe the process of associating a physical map or raster image of a map with spatial locations. Geo reference means triangular Combination of DGPS Control points (Static Based), Topographic Survey and Vectorized Cadastral Map (Raster image). Geo referencing may be applied to any kind of object or structure that can be related to a geographical location, such as points of interest, roads, places, bridges, Forest munara or field bund. Geographic locations are most commonly represented using a coordinate reference system, which in turn can be related to a geodetic reference system such asWGS-84. There are various GIS tools available that can transform image data to some geographic control framework, like the commercial ArcMap, or ERDAS Imagine Recorded Survey data importing in Arc Map For instance, a DGPS device will Easting and nothing coordinates for a given point of interest, effectively geo referencing this point. A geo reference must be a matchless

identifier. In other words, there must be only one location for which a geo reference acts as the reference.

6. C] METHODOLOGY OF SATELLITE IMAGERY

Ideal recent satellite data are characterized by intersection of features, such as roads, canals or streams. Considering the high resolution of satellite data (IKONOS) has been used mostly Geo-Tiff Format image is preferred. Satellite data typically on basis of different forest band applicable it's depend upon mineral of that area.

The following list describes the main phases applied in the presént study, for the creation of the land cover maps:-

- Preparation of Digital Map
- Satellite data selection
- Geo reference satellite image in WGS84 Coordinates
- Satellite data classification, Selection & Estimation WGS84 Coordinates.
- Satellite data interpretation and vectorization of the resulting units,
- Post Processing of DGPS Data, Validation of decision Observation Period
- Field checking

For this methodology most preferable software's are been used i.e. Erdas imagine 8.4, ArcGIS & Autocad Map.

7. PILLARS AND SITE PHOTOGRAPHS

Chhotedongar Iron Ore Mine

DGPS MAP OF FIXED BOUNDARY PILLER BY DGPS SURVEY

N

W E

S

NOT TO SCALE

MAP NO. - 1

GEOREFERED DGPS PLAN

INDEX

Lease Boundary

Fixed Boundary Pillers

Base Point

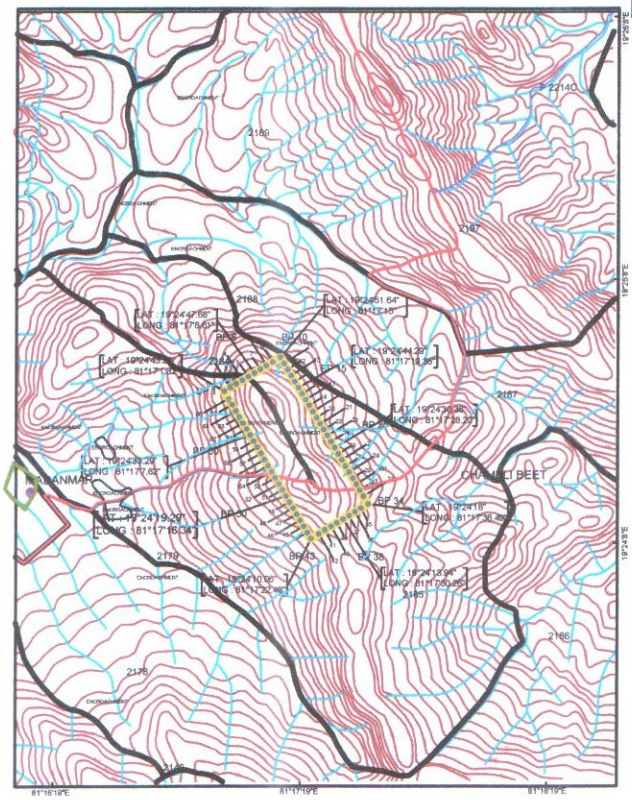
Trangulation Point

Chhotedongar Iron Ore Mine

M/S SHRI BAJARANG POWER & ISPAT LTD.

TAHSIL – NARAYANPUR, DIST. – NARAYANPUR, STATE – CHATTISGARH.

LEASE AREA :– 57.00 Ha.



M/S SHRI BAJARANG POWER & ISPAT LTD
LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP 1	529783.5703	2146449.343	19°24'43.92"	81°17'1.32"
2	BP 6	529997.8791	2146578.074	19°24'47.682"	81°17'8.619"
3	BP 10	530181.6767	2146688.478	19°24'51.64"	81°17'15"
4	BP 15	530311.0644	2146474.565	19°24'44.29"	81°17'19.35"
5	BP 25	530569.8398	2146046.739	19°24'30.36"	81°17'28.20"
6	BP 34	530809.7014	2145650.182	19°24'18"	81°17'36.49"
7	BP 38	530630.8278	2145542.185	19°24'13.94"	81°17'30.26"
8	BP 43	530403.0957	2145404.69	19°24'10.06"	81°17'22.48"
9	BP 50	530224.5643	2145705.732	19°24'19.29"	81°17'16.34"
10	BP 60	529969.5195	2146135.793	19°24'33.29"	81°17'7.62"

CERTIFICATE

Certified that this map is prepared by as based on cadastral map athorised by the State Govt. Coordinates of the Boundary Pillars shown on map are correct in our knowledge.

Prepared By :-

RAHUL RUTHE
A.G.M (PROJECT COORDINATOR)
B.E (CIVIL)

NITIN SELUKAR
MANAGING DIRECTOR
(MINING ENGINEER)

SURVEYED BY :

GOEL

M/S SHRI BAJARANG POWER & ISPAT LTD.

Regd. Office : Vill. Borjhara, Urla–Guma Road, Urla, Raipur 493221 (C.G.)

SURVEYED & PREPARED BY:

SOHAM FERRO MANGANEASE Pvt. Ltd.

OFFICE : Block No.17, Ground Floor,N.K.Y. Towers
Ajani Square, Wardha Road,Nagpur 440015
Ph. : (O) 0712-6544174,2252221,2239964
E-mail : sohamcad@rediffmail.com,
soham.feromagnese@gmail.com

Surveyed By :	Checked By :	Approved By :

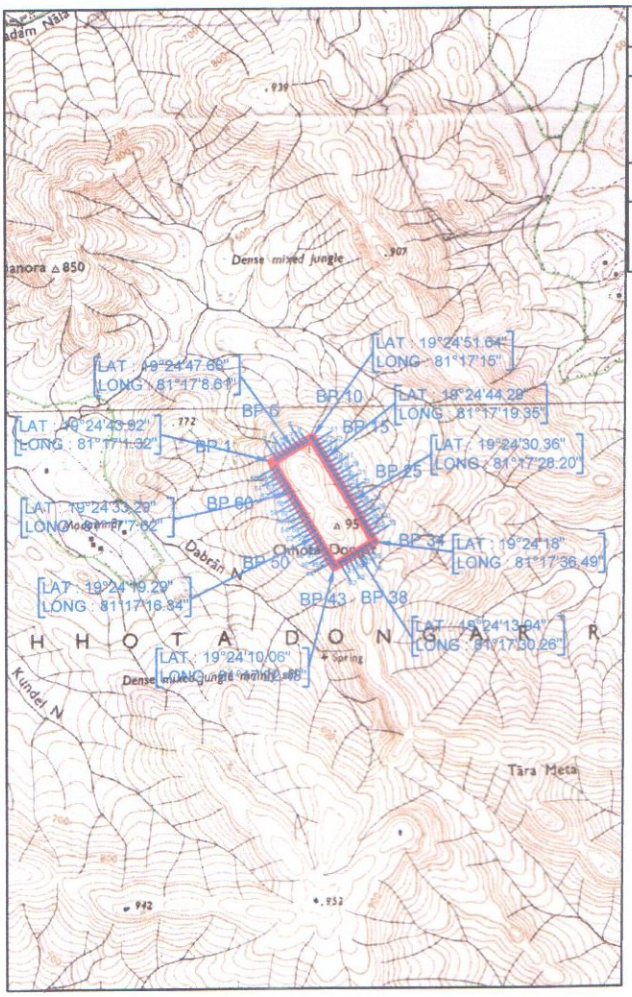
Map : Cadastral Map showing boundary of Chhotedongar Iron Ore Mine

Chhotedongar Iron Ore Mine

FIXED BOUNDARY PILLAR BY DGPS SURVEY OVERLAYED ON PART OF TOPOSHEET NO. - 64 C/14

NOT TO SCALE

MAP NO. - 2



PART OF TOPOSHEET NO. - 64 C/14

INDEX

Lease Boundary | Fixed Boundary Pillers

Base Point | Trangulation Point

Chhotedongar Iron Ore Mine

M/S SHRI BAJARANG POWER & ISPAT LTD.

TAHSIL – NARAYANPUR, DIST. – NARAYANPUR, STATE – CHATTISGARH.

LEASE AREA :– 57.00 Ha.

M/S SHRI BAJARANG POWER & ISPAT LTD
LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP 1	529783.5703	2146449.343	19°24'43.92"	81°17'1.32"
2	BP 6	529997.8791	2146578.074	19°24'47.682"	81°17'8.619"
3	BP 10	530181.6767	2146688.478	19°24'51.64"	81°17'15"
4	BP 15	530311.0644	2146474.565	19°24'44.29"	81°17'19.35"
5	BP 25	530569.8398	2146046.739	19°24'30.36"	81°17'28.20"
6	BP 34	530809.7014	2145650.182	19°24'18"	81°17'36.49"
7	BP 38	530630.8278	2145542.185	19°24'13.94"	81°17'30.26"
8	BP 43	530403.0957	2145404.69	19°24'10.06"	81°17'22.48"
9	BP 50	530224.5643	2145705.732	19°24'19.29"	81°17'16.34"
10	BP 60	529969.5195	2146135.793	19°24'33.29"	81°17'7.62"

CERTIFICATE

Certified that this map is prepared by as based on cadastral map athorised by the State Govt. Coordinates of the Boundary Pillars shown on map are correct in our knowledge.

Prepared By :-

RAHUL RUTHE
A.G.M (PROJECT COORDINATOR)
B.E (CIVIL)

NITIN SELUKAR
MANAGING DIRECTOR
(MINING ENGINEER)

SURVEYED BY :

GOEL

M/S SHRI BAJARANG POWER & ISPAT LTD.

Regd. Office : Vill. Borjhara, Urla–Guma Road, Urla, Raipur 493221 (C.G.)

SURVEYED & PREPARED BY:

SOHAM FERRO MANGANEASE Pvt. Ltd.

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E-mail : sohamcad@rediffmail.com,
soham.feromagnese@gmail.com

Surveyed By :	Checked By :	Approved By :

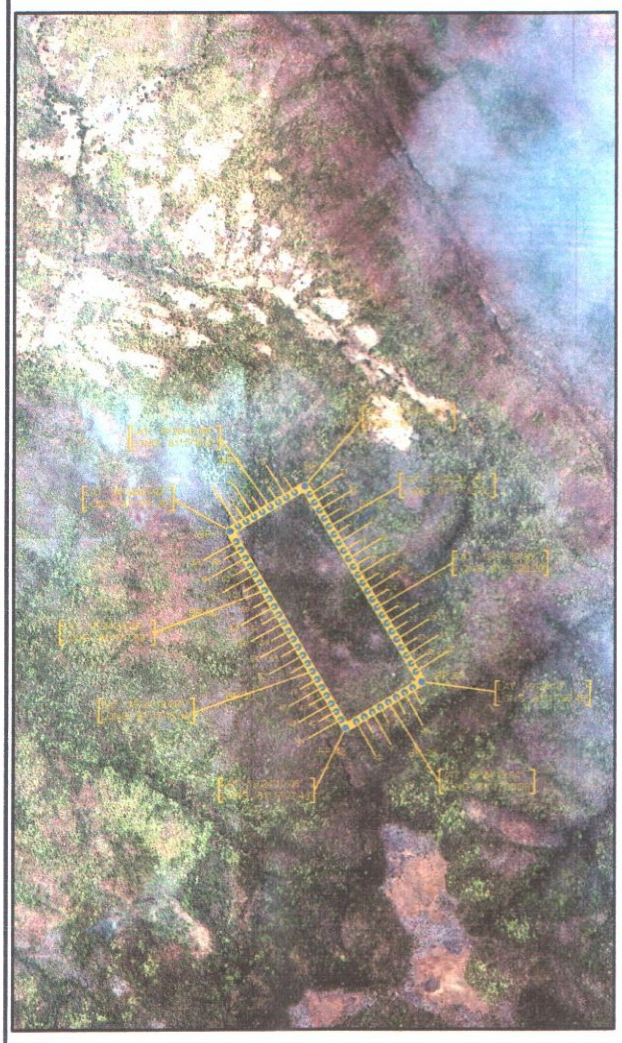
Map : Boundary of Survey area overlaid on Survey of India Toposheet No. - 65 E/07

Chhotedongar Iron Ore Mine

FIXED BOUNDARY PILLAR BY DGPS SURVEY OVERLAYED ON SATELLITE IMAGE IRS-P6 LISS-4 MX

NOT TO SCALE

MAP NO. - 3



SATELLITE IMAGE IRS-P6 LISS-4 MX	
INDEX	
Lease Boundary	Fixed Boundary Pillers
Base Point	Trangulation Point
Chhotedongar Iron Ore Mine	
M/S SHRI BAJARANG POWER & ISPAT LTD.	
TAHSIL – NARAYANPUR, DIST. – NARAYANPUR, STATE – CHATTISGARH.	
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LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP 1	529783.5703	2146449.343	19°24'43.92"	81°17'1.32"
2	BP 6	529997.8791	2146578.074	19°24'47.682"	81°17'8.619"
3	BP 10	530181.6767	2146688.478	19°24'51.64"	81°17'15"
4	BP 15	530311.0644	2146474.565	19°24'44.29"	81°17'19.35"
5	BP 25	530569.8398	2146046.739	19°24'30.36"	81°17'28.20"
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E-mail : sohamcad@rediffmail.com,
soham.feromagnese@gmail.com

Surveyed By :	Checked By :	Approved By :

Map : Boundary of Survey area overlaid on LISS IV MX Satellite Imagery

M/S SHRI BAJARANG POWER & ISPAT LTD

LIST OF DGPS BOUNDARY PILLAR CO-ORDINATE

Sr. No.	BP No.	UTM NORTH WGS 84		WGS 84 DMS	
		EASTING	NORTHING	LATITUDE	LONGITUDE
1	BP 1	529783.5703	2146449.343	19°24'43.92"	81°17'1.32"
2	BP 2	529826.4321	2146475.089	19°24'44.341"	81°17'2.734"
3	BP 3	529869.2938	2146500.835	19°24'45.176"	81°17'4.205"
4	BP 4	529912.1556	2146526.582	19°24'46.012"	81°17'5.676"
5	BP 5	529955.0173	2146552.328	19°24'46.847"	81°17'7.148"
6	BP 6	529997.8791	2146578.074	19°24'47.682"	81°17'8.619"
7	BP 7	530040.7409	2146603.82	19°24'48.518"	81°17'10.090"
8	BP 8	530083.6026	2146629.567	19°24'49.353"	81°17'11.561"
9	BP 9	530126.4644	2146655.313	19°24'50.188"	81°17'13.032"
10	BP 10	530181.6767	2146688.478	19°24'51.64"	81°17'15"
11	BP 11	530207.5543	2146645.695	19°24'49.871"	81°17'15.812"
12	BP 12	530233.4318	2146602.913	19°24'48.478"	81°17'16.697"
13	BP 13	530259.3093	2146560.13	19°24'47.084"	81°17'17.582"
14	BP 14	530285.1869	2146517.347	19°24'45.691"	81°17'18.467"
15	BP 15	530311.0644	2146474.565	19°24'44.298"	81°17'19.352"
16	BP 16	530336.942	2146431.782	19°24'42.905"	81°17'20.237"
17	BP 17	530362.8195	2146389	19°24'41.511"	81°17'21.122"
18	BP 18	530388.697	2146346.217	19°24'40.118"	81°17'22.006"
19	BP 19	530414.5746	2146303.434	19°24'38.725"	81°17'22.891"
20	BP 20	530440.4521	2146260.652	19°24'37.331"	81°17'23.776"
21	BP 21	530466.3297	2146217.869	19°24'35.938"	81°17'24.661"
22	BP 22	530492.2072	2146175.086	19°24'34.545"	81°17'25.546"
23	BP 23	530518.0847	2146132.304	19°24'33.152"	81°17'26.431"
24	BP 24	530543.9623	2146089.521	19°24'31.758"	81°17'27.315"
25	BP 25	530569.8398	2146046.739	19°24'30.365"	81°17'28.200"
26	BP 26	530595.7173	2146003.956	19°24'28.972"	81°17'29.085"
27	BP 27	530621.5949	2145961.173	19°24'27.578"	81°17'29.970"
28	BP 28	530647.4724	2145918.391	19°24'26.185"	81°17'30.855"
29	BP 29	530673.35	2145875.608	19°24'24.792"	81°17'31.739"
30	BP 30	530699.2275	2145832.825	19°24'23.398"	81°17'32.624"
31	BP 31	530725.105	2145790.043	19°24'22.005"	81°17'33.509"
32	BP 32	530750.9826	2145747.26	19°24'20.612"	81°17'34.394"
33	BP 33	530776.8601	2145704.478	19°24'19.218"	81°17'35.279"

34	BP 34	530809.7014	2145650.182	19°24'18"	81°17'36.49"
35	BP 35	530759.2382	2145619.714	19°24'16.462"	81°17'34.669"
36	BP 36	530716.4347	2145593.871	19°24'15.623"	81°17'33.200"
37	BP 37	530673.6313	2145568.028	19°24'14.785"	81°17'31.731"
38	BP 38	530630.8278	2145542.185	19°24'13.947"	81°17'30.262"
39	BP 39	530588.0243	2145516.342	19°24'13.108"	81°17'28.793"
40	BP 40	530545.2209	2145490.499	19°24'12.270"	81°17'27.324"
41	BP 41	530502.4174	2145464.656	19°24'11.431"	81°17'25.855"
42	BP 42	530459.6139	2145438.813	19°24'10.593"	81°17'24.386"
43	BP 43	530403.0957	2145404.69	19°24'10.06"	81°17'22.48"
44	BP 44	530377.5913	2145447.696	19°24'10.886"	81°17'21.574"
45	BP 45	530352.0868	2145490.702	19°24'12.287"	81°17'20.702"
46	BP 46	530326.5823	2145533.708	19°24'13.687"	81°17'19.830"
47	BP 47	530301.0778	2145576.714	19°24'15.088"	81°17'18.958"
48	BP 48	530275.5733	2145619.72	19°24'16.488"	81°17'18.086"
49	BP 49	530250.0688	2145662.726	19°24'17.889"	81°17'17.214"
50	BP 50	530224.5643	2145705.732	19°24'19.290"	81°17'16.342"
51	BP 51	530199.0598	2145748.738	19°24'20.690"	81°17'15.470"
52	BP 52	530173.5554	2145791.744	19°24'22.091"	81°17'14.598"
53	BP 53	530148.0509	2145834.75	19°24'23.491"	81°17'13.726"
54	BP 54	530122.5464	2145877.756	19°24'24.892"	81°17'12.854"
55	BP 55	530097.0419	2145920.762	19°24'26.292"	81°17'11.982"
56	BP 56	530071.5374	2145963.768	19°24'27.693"	81°17'11.109"
57	BP 57	530046.0329	2146006.774	19°24'29.093"	81°17'10.237"
58	BP 58	530020.5284	2146049.78	19°24'30.494"	81°17'9.365"
59	BP 59	529995.0239	2146092.786	19°24'31.894"	81°17'8.493"
60	BP 60	529969.5195	2146135.793	19°24'33.295"	81°17'7.621"
61	BP 61	529944.015	2146178.799	19°24'34.695"	81°17'6.749"
62	BP 62	529918.5105	2146221.805	19°24'36.096"	81°17'5.877"
63	BP 63	529893.006	2146264.811	19°24'37.496"	81°17'5.005"
64	BP 64	529867.5015	2146307.817	19°24'38.897"	81°17'4.133"
65	BP 65	529841.9808	2146350.802	19°24'40.297"	81°17'3.260"
66	BP 66	529816.4925	2146393.829	19°24'41.6984"	81°17'2.389"