

**BEFORE THE HON'BLE NATIONAL GREEN
TRIBUNAL,
EASTERN ZONE BENCH: KOLKATA**

Original Application No. 05/2024/EZ

Madhusudan Palai..... Applicant.

-Vrs.-

State of Odisha and others . . . Respondents

INDEX

Sl. No.	Description of documents.	Pages.
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- | | | |
|----|--|-------|
| 1. | Affidavit filed by
Respondent No. 2 & 4. | 01-08 |
| 2. | <u>Annexure-A/4</u>

True copy of report submitted by
the Deputy Director of Mines,
Khordha Circle, Khordha and
Mining Officer, Khordha. | 09-25 |
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Cuttack.

Dt. 03.10.2024.


Addl. Govt. Advocate

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA.
Original Application No. 05/2024/EZ

Madhusudan Palai.....Applicant.

-Vrs.-

State of Odisha and others . . . Respondents.

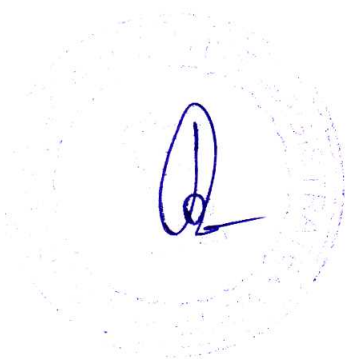
AFFIDAVIT FILED BY RESPONDENT NO 2 & 4.

I, Chanchal Rana, aged about 35 years, S/O-
 Anil Kanta Rana, at present working as Collector &
 District Magistrate, Khordha, At/PO/Dist.- Khordha do
 hereby solemnly affirm and state as follows: -

1. That, I am working as above and have been arrayed as
 Respondant No.4 in the aforesaid Original Application.

I have also been authorized by the Govt. in Revenue &
 Disaster Management Department, Odisha,
 Bhubaneswar to file Affidavit on behalf of Addl. Chief
 Secretary to Govt. in Revenue & Disaster Management
 Department, Odisha, Bhubaneswar, Respondent No. 2.

I have gone through the Original Application, relevant
 records and understood the contents thereof. I am well



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Chanchal Rana

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acquainted with the facts of the case and competent to swear this affidavit in my official capacity.

2. That, vide order dated 22.01.2024 passed in Original Application No. 05/2024/EZ, the Hon'ble NGT has directed as follows.

15. Considering the allegations made, we deem it appropriate to constitute a Committee to elicit the veracity of the allegations comprising of the following

Members: -

i) Senior Scientist, Odisha State Pollution Control Board;

ii) Divisional Forest Officer, Khordha or his representative of senior rank;

iii) Director of Mines and Geology, Bhubaneswar, of his representative of senior rank, and

iv) Collector and District Magistrate, Khordha, Odisha, or his representative not below the rank of Additional District Magistrate.



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16. *The Committee shall inspect the site in question and submit its Report within four weeks on affidavit with regard to the allegations made.*

17. *The Odisha State Pollution Control Board shall be the Nodal Agency for all logistic purposes and for filing the Report of the Committee on affidavit."*

3. That, pursuant to the direction of the Hon'ble NGT, the Committee comprising of the Additional District Magistrate, (Revenue), Khordha, Assistant Conservator of Forest, Khordha, Addl. Chief Env. Scientist & Regional Officer, Odisha State Pollution Control Board, Bhubaneswar, Sub-Collector, Khordha, Deputy Director of Mines, Khordha, Tahasildar, Tangi and Jagan Behera, Geologist of Khordha District visited the spot on 19.02.2024. Madhusudan Palai, the applicant and Giridhari Das, Lessee of Bariko Laterite Stone Quarry, Respondent No. 11, were also present during enquiry.

4. That, after conducting spot visit, the Committee submitted its report which has already been filed by



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this deponent on affidavit before the Hon'ble Tribunal on 19.04.2024.

5. That, the Committee had suggested that the Deputy Director of Mines, Khordha Circle, Khordha and the Mining Officer, Khordha shall submit the assessment of quantum of minor minerals illegally excavated by the lessee from the alleged Bariko Laterite Stone Quarry as per OMMC Rules and stipulated conditions laid by SEIAA and SPCB, Odisha, Bhubaneswar. They shall also scientifically calculate the volume of minor minerals excavated along with calculation of penalty, Environment compensation and remedial measures as per the existing orders/guidelines and to submit the compliance before the Hon'ble Tribunal.



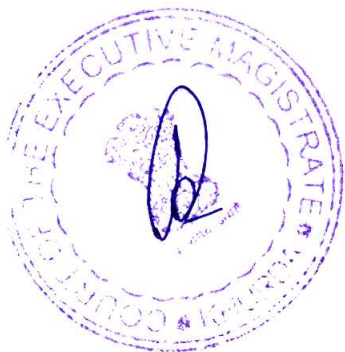
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6. That, in compliance to the report of the Committee, the Deputy Director, Mines, Khordha and the Mining Officer, Khordha have submitted report on Bariko Laterite Quarry to the Nodal Officer-cum-Regional Officer, State Pollution Control Board, Bhubaneswar vide letter No. 1221 dtd. 19.09.2024.

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7. That, it is reported that the lease holder has been allotted Plot No.673 having area Ac.2.173 dec of Mouza-Bariko for mining operation. Lease Agreement in respect to the above quarry was made on 28.01.2021 and 'Y' form was issued in favour of lessee on 04.03.2021. It is also reported that EC was obtained in favour of Tahasildar, Tangi on 17.12.2020 which subsequently, was transferred in the name of the lessee on 02.06.2022. CTE was issued on 03.12.2022 and CTO was issued on 05.01.2023.



8. That, the Deputy Director of Mines, Khordha and the Mining Officer, Khordha with the help of technical team of ORSAC have scientifically assessed the quantum of excavation of minor minerals made from the alleged stone quarry.

9. That, ORSAC has reported that a quantum of 6107.622 cum of material has been excavated from Bariko Laterite quarry during the period from dt.21.12.2020 to dt.01.12.2023. In the approved mining plan, a total of 15000 cum of material is mentioned as

Chemical here.

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mineable resource which includes 7500 cum of usable rock mass and 7500 is unusable rock mass. The 15,000 cubic meters represents the cumulative total over five years, amounting to 3,000 cubic meters per annum and includes both usable and unusable rock mass. According to the approved mining plan, during the period of 2 years and 10 months, the amount of excavation might be 8,500 to 9,000 cubic meters including both usable and unusable rock mass. It has been ascertained from the case record of Tahasil, Tangi and the i4MS portal, that total 4394 cum of laterite have been transported by the lessee during the period of lease. In the approved mining plan, the over burden is considered to be 50% of mineable resource. Hence, the rest 1713 cum is considered as over burden material which is about 28% of total extracted volume of 6107.622 cum.



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Chandra Kumar

10. That, basing upon the report of ORSAC, Deputy Director of Mines, Khordha and the records available in Tahasil, Tangi and as per the approved Mining Plan,

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no excess excavation of mines is occurred over the alleged Boriko Laterite quarry during the leases period.

The copy of report submitted by the Deputy Director of Mines, Khordha Circle, Khordha and Mining Officer, Khordha is annexed herewith as **Annexure-A/4.**

11. That, the contents of the above paragraphs are true and correct to the best of my knowledge as derived from the official records and that nothing material has been concealed there from and the present deponent reserves the right to file further affidavit as and when required and directed by this Hon'ble Tribunal.

Identified by

Advocate


Deponent
 COLLECTOR & DISTRICT MAGISTRATE
 KHORDHA

VERIFICATION

I, Chanchal Rana, aged about 35 years, S/O- Anil Kanta Rana, at present serving as Collector and District Magistrate, Khordha, do hereby solemnly affirm and verify the contents of paragraph nos. 1 to 11 of the affidavit are true to my knowledge and that I have not suppressed any material facts. I sign this verification at my office on 3rd day of October, 2024.


VERIFICANT
 COLLECTOR & DISTRICT MAGISTRATE
 KHORDHA

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Certificate

Certified that Cartridge papers are not available.

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Addl. Govt. Advocate

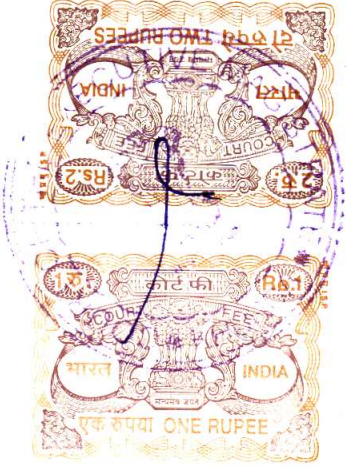
AFFIDAVIT NO-1862 Dt-43-10-24

The above deponent being personally known to me appears before me on 31/7/24 at 1030AM / PM and states on oath that the contents of the affidavit are true to the best of his knowledge based on official records.

Chanchal Kumar
Deponent
COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

31/7/24
Executive Magistrate, Khordha.

Executive Magistrate
Khurda



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Annexure- A14

By-Email



**OFFICE OF THE DEPUTY DIRECTOR OF MINES
KHORDHA CIRCLE, KHORDHA
BDA Colony, Pallahat, Near New Bus Stand, District
Khordha-752056
(E-Mail: ddgmines.khordha@gmail.com)**

Letter No.....1221...../Mines, Khordha. Date.19.09.2024

From: D K Sahoo, Deputy Director Mines (I/c)
Khordha Circle, Dist-Khordha

To

The Nodal Officer-cum-Regional Officer
SPC Board, Bhubaneswar

Sub: Submission of Report on Bariko Laterite Quarry of Tangi Tahasil of
Khordha District in connection with NGT-reg

Ref No: Letter No.493 /RO-Misc-382/ dt 13.02.2024

Sir,

In inviting a reference to the subject cited above, I am submitting herewith the assessment report of Bariko Laterite Quarry of Tangi Tahasil, Khordha District in connection with NGT application No 05/2024/EZ.

This is for your kind information and necessary action.

Yours faithfully

MCS
19/9/24

Deputy Director Of Mines (I/C),
Khordha Circle, Khordha

Memo No.....1222...../Mines. Khordha, Date...19.09.2024

Copy submitted to Collector and District Magistrate, District Khordha for favour of kind information and necessary action.

MCS
19/9/24

Deputy Director Of Mines (I/C),
Khordha Circle, Khordha

Done wpy attested

[Signature]

Page 1 of 2

COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

-X-

Memo No...1223...../Mines, Khordha. Date: 19.09.2024

Copy submitted to the Director of Mines and Geology, Odisha, Bhubaneswar /Director of Minor Minerals, Odisha Bhubaneswar for favour of kind information and necessary action.

MSJ
19/9/24
Deputy Director Of Mines (I/C),
Khordha Circle, Khordha

True copy attested



COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

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Report on Bariko Laterite Quarry in connection with NGT Application No: 05/2024/EZ

In accordance with the order dated on dt.22.01.2024, from the Hon'ble NGT, Eastern Zone Bench, Kolkata, the Committee conducted a site visit on dt.19.02.2024. They subsequently submitted a Joint Committee report addressing the allegations made in the original application, O.A. No. 05/2024/EZ, filed by Madhusudan Palai against the State of Odisha and others

In the Joint Committee report, it is suggested that Deputy Director Mines, Khordha & Mining officer, Khordha shall submit the assessment of quantum of minor minerals illegally excavated by the lessee from Bariko Laterite stone quarry as per OMMC Rules and stipulated conditions by SEIAA and SPCB, Odisha. Deputy Director Mines and Mining Officer, Khordha will scientifically calculate the volume of minor minerals excavated along with imputation of penalty, Environment compensation and remedial measures as per the existing order/ guidelines to submit the compliance before hon'ble NGT.

Salient Features of the quarry:

- i. The Bariko Laterite stone quarry lease holder has been allotted over an area 2.173 Ac/0.880 Ha, Khata No- 270, Plot No 673, Mauza- Bariko, Tangi Tahasil, Khordha district.
- ii. Lease agreement was made on dt. 28.01.2021
- iii. 'Y' form issued in favour of lessee on dt 04.03.2021.
- iv. EC obtained in favour of Tahasildar on dt 17.12.2020 which was transferred in the name of lessee on dt 02.06.2022
- v. CTE & CTO was issued on dt 03.12.2022 & dt.05.01.2023 respectively.
- vi. The case record was transferred from Tahasildar Tangi to Mining Officer, Khordha on dt.06.10.2023

True copy attested.



COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

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Observations: Based on the findings and recommendations of the Joint Committee report, the Deputy Director of Mines, Khordha & Mining Officer, Khordha undertook the following actions during the specified period:

- i. The date of excavation was determined based on the issuance of the 'Y' form, dated on dt 04.03.2021.
- ii. The Chief Executive, ORSAC was requested to assess the quantum of excavation during the period from dt. 01.03.2021 to 15.02.2024 with the help of stereo pair satellite image vide Letter No 209/Mine. Khordha/dt 06.03.2024.
- iii. ORSAC informed that stereo pair satellite images were not available for the required period, as indicated in Letter No. 1766/dt. 19.04.2024.
- iv. The Chief Executive of ORSAC was subsequently requested to assess the quantum of excavation, as detailed in Letter No 445/Mine. Khordha/dt 18.04.2024.
- v. After consulting various sources, ORSAC informed that only Maxar stereo data (50) cm during 21 Dec 2020 & 1st Dec 2023 is available in respect to Bariko Laterite area vide Letter No 2190/14.05.2024. The invoice for this data amounts to Rs.13,97,002/- (Rupees thirteen lakh ninety-seven thousand two) only.
- vi. ORSAC received HRIS image of Bariko-Laterite stone quarry on dt 29.07.2024 through limited tender process from IN SPACe empaneled vendors of ISRO.
- vii. A team of officer & staff of ORSAC carried out RL Survey around Bariko - Laterite quarry during 01.08.2024 to 09.08.2024.
- viii. Based on ortho image, RL Value and preparation of DEM value from NRIS stereo image, a scientific team prepared the report and finally, ORSAC submitted assessment report on Bariko-Laterite stone quarry as stated in Letter No. 3329/dt.30.08.2024.

True copy attested



COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

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- ix. ORSAC reported that a quantum of **6107.622 cum** of material has been excavated from Bariko Laterite quarry during the period from dt.21.12.2020 to dt.01.12.2023.
- x. In the approved mining plan, a total of 15000 cum of material is mentioned as mineable resource which includes 7500 cum of usable rock mass and 7500 is unusable rock mass.
- xi. The 15,000 cubic meters represents the cumulative total over five years, amounting to 3,000 cubic meters per annum, and includes both usable and unusable rock mass."
- xii. The image procured cover the period from dt.21.12 2020& dt.1.12.2023. However, considering the period from the date of agreement of the quarry on dt. 28.01.2021 to the date 01.12.2023, the excavation period of quarry is considered to be 2 years & 10 months.
- xiii. According to the approved mining plan, during the period of 2 years and 10 months, the amount of excavation might be 8,500 to 9,000 cubic meters, including both usable and unusable rock mass.
- xiv. ORSAC reported that a total of 6107.622 cum was the extracted volume during the assessment period.
- xv. From the tehsil case record and the i4MS portal, it is found that a total of 4394 cum laterite have been transported by the lessee during the period of lease.
- xvi. The rest of 1713 cum may be considered as over burden which is about 28 % of the total extracted volume of 6107.622.

Findings: Based on the field study conducted by the ORSAC team & their report, approved mining plan and case records of Tangi Tahasil, it is found that no excess excavation occurred over Boriko Laterite quarry during this period.

True copy attached



COLLECTOR & DISTRICT MAGISTRAR,
KHORDHA

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- Enclosure:** i) Assessment report of quantum of minor mineral submitted by ORSAC Along with DGPS pillar coordinates, and seven nos of Maps. (hard & soft copy).
- ii) Xerox copy of approved mining plan.

Submitted

Agil
19.09.2024

DDM, Khordha

Deputy Director Mines (I/c)
O/o. Deputy Director Mines
Khordha Circle, Khordha

Jagan
19.09.24
Mining Officer, Khordha
Mining Officer (I/c)
O/o. Deputy Director Mines
Khordha Circle, Khordha

same copy attached

[Signature]
COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

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ODISHA SPACE APPLICATIONS CENTRE (ORSAC)

Department of Science & Technology, Govt. of Odisha

ORSAC/MDDS/1128/ 2023 No. : 3329 Date : 30/8/2024 .

To

The Deputy Director Mines (I/C)
Khurdha, Mining Circle
Dist : Khurdha

Sub: Assessment of the quantum of Miner Minerals excavated from Bariko - Laterite Stone Quarry with respect to NGT CA No. 05/2024/EZ - MadhusudanPalai.

Ref: Letter No. 763/Mines/ Khurdha 24.06.2024 and ORSAC estimate Letter No. MDDS/1128/2023, P-20/ 25-22 dated 18. 06. 2024.

Sir

In inviting a reference in the subject mentioned above and the letter cited under reference, please find the assessment of extracted volume of material from the lease area Area 2.183Ac & 0.88 Ha of the Bariko laterite Stone Quarry under Tangi Tahasil, Dist- Khordha, in shape of soft and hard copy in connection with NGT OA No. 05/2024/EZ.

- Encl: 1. Assessment Report with corner point coordinates
2. Photogrammetry Block and RMSE Error of the year 2020
3. Photogrammetry Block and RMSE Error of the year 2023
4. Digital Elevation maps 2020 & 2023
5. Ortho Satellite image Map on dt. 21.12.2020
6. Ortho Satellite image Map on dt. 01.12.2023
7. Extracted Volume Map

Yours Faithfully

Scientist-E, ORSAC

True copy attached.

COLLECTOR & DISTRICT MAGISTRATE
KHURDHA

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ASSESSMENT REPORT OF BARIKO LATERITE STONE QUARRY

The study is carried out using High Resolution Satellite imagery (HRSI WV -1) of 0.5 m stereo imagery (PAN - 1, MX-4 Bands) procured from M/s Adepto Geo Informatics Pvt. Ltd. and empanelled foreign Satellite vendor of Indian National Space promotion and authorization Centre (INSPACe) Indian Space Research Organization, Department of Space (ISRO/DOS) Govt. of India.

DGPS Survey of the Quarry Boundary has been under taken as per the mining plan in presence of Mining Officer, Khurdha. Then Benchmark (BM) has been transferred from KALUPADA GHAT RAILWAY STATION on 01.08.2024 to 09.08.2024 and Quarry Boundary Survey also done in that period. The photogrammetry principle is used to generate Digital Elevation Model (DEM) and Ortho Satellite Image for pits in Bariko Laterite Stone Quarry Under Tangi Tahasil, Dist-Khordha, taking high Resolution Satellite Imagery (HRSI) of 0.5 Stereo imagery (PAN - 1 and MX-4 Bands) for period of 21.12.2020 and 01.12.2023.

The Leica photogrammetric software use to generate DEM and ortho Image for the study area. The excavated volume is calculated using DEM of 2020 as the base year and 2023 of study year DEM, using Arc GIS Software taking the pixel of the minimum mappable unit for making a comparable measurement in the field. The volume accuracy come to 6107.622 mc(m³).

ASSESSMENT REPORT

EXTRACTED VOLUME OF THE BARIKO LATERITE QUARRY FOR THE PERIOD OF 2020 - 2023		
BASE YEAR	STUDY YEAR	EXTRACTED VOLUME IN Meter Cube(M ³) (Study Year - Base Year)
2020	2023	6107.622

True copy attached

COLLECTOR & DISTRICT MAGISTRATE

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Quarry

Scientist D

[Signature]

Shri M. K. Sanabada
Scientist, ORSAC
Bhubaneswar

Subharmita Mahanty
s.c. Project Scientist

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
DGPS SURVEY PILLAR COORDINATES OF THE MINING LEASE AREA

DGPS SURVEYED PILLAR CO-ORDINATES BARIKO LSQ				
PILLR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE
1	327879.878	2204444.588	19°55'43.68446"	85°21'19.75361"
2	327913.307	2204439.309	19°55'43.52342"	85°21'20.90489"
3	327910.377	2204414.787	19°55'42.72506"	85°21'20.81237"
4	327937.23	2204409.467	19°55'42.56059"	85°21'21.73751"
5	327931.11	2204354.314	19°55'40.76515"	85°21'21.54563"
6	327978.478	2204337.519	19°55'40.23405"	85°21'23.18003"
7	327960.364	2204268.47	19°55'37.98289"	85°21'22.58041"
8	327951.132	2204272.037	19°55'38.09596"	85°21'22.26175"
9	327944.286	2204254.719	19°55'37.53060"	85°21'22.03218"
10	327910.295	2204263.797	19°55'37.81500"	85°21'20.86034"
11	327923.213	2204290.644	19°55'38.69216"	85°21'21.29550"
12	327908.053	2204299.433	19°55'38.97313"	85°21'20.77126"
13	327912.156	2204311.405	19°55'39.36374"	85°21'20.90831"
14	327902.44	2204316.452	19°55'39.52478"	85°21'20.57253"
15	327904.95	2204328.65	19°55'39.92225"	85°21'20.65476"
16	327902.08	2204330.575	19°55'39.98392"	85°21'20.55539"
17	327905.778	2204341.918	19°55'40.35398"	85°21'20.67874"
18	327897.435	2204344.739	19°55'40.44306"	85°21'20.39092"
19	327904.063	2204380.499	19°55'41.60805"	85°21'20.60679"
20	327880.93	2204389.26	19°55'41.88559"	85°21'19.80843"
21	327884.65	2204402.816	19°55'42.32760"	85°21'19.93178"
22	327872.903	2204403.985	19°55'42.36186"	85°21'19.52747"

ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 11

DATE 30/08/2024

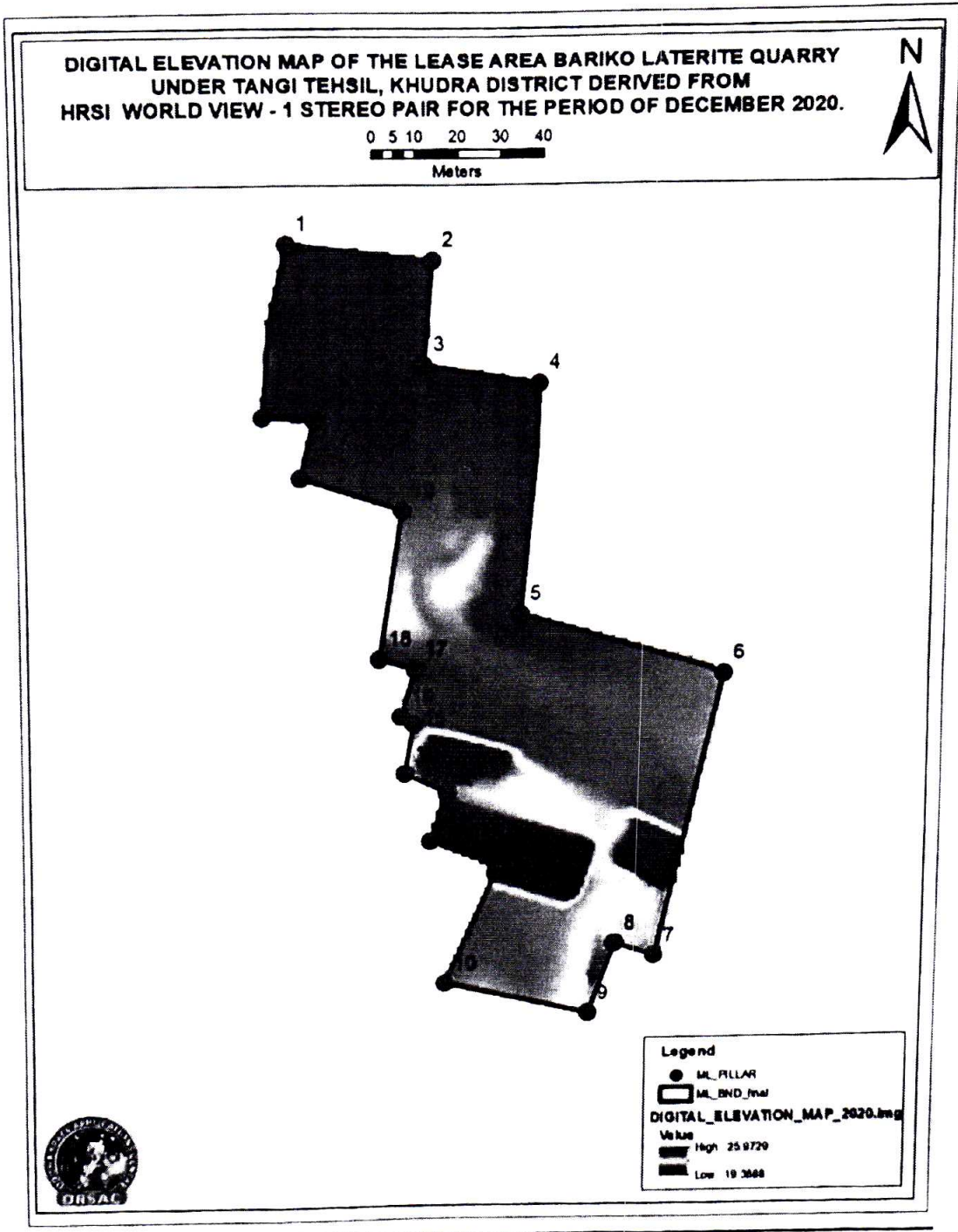

AUTHORISED SIGNATORY

None copy attached


COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

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DIGITAL ELEVATION MAP OF THE YEAR 2020



ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 12

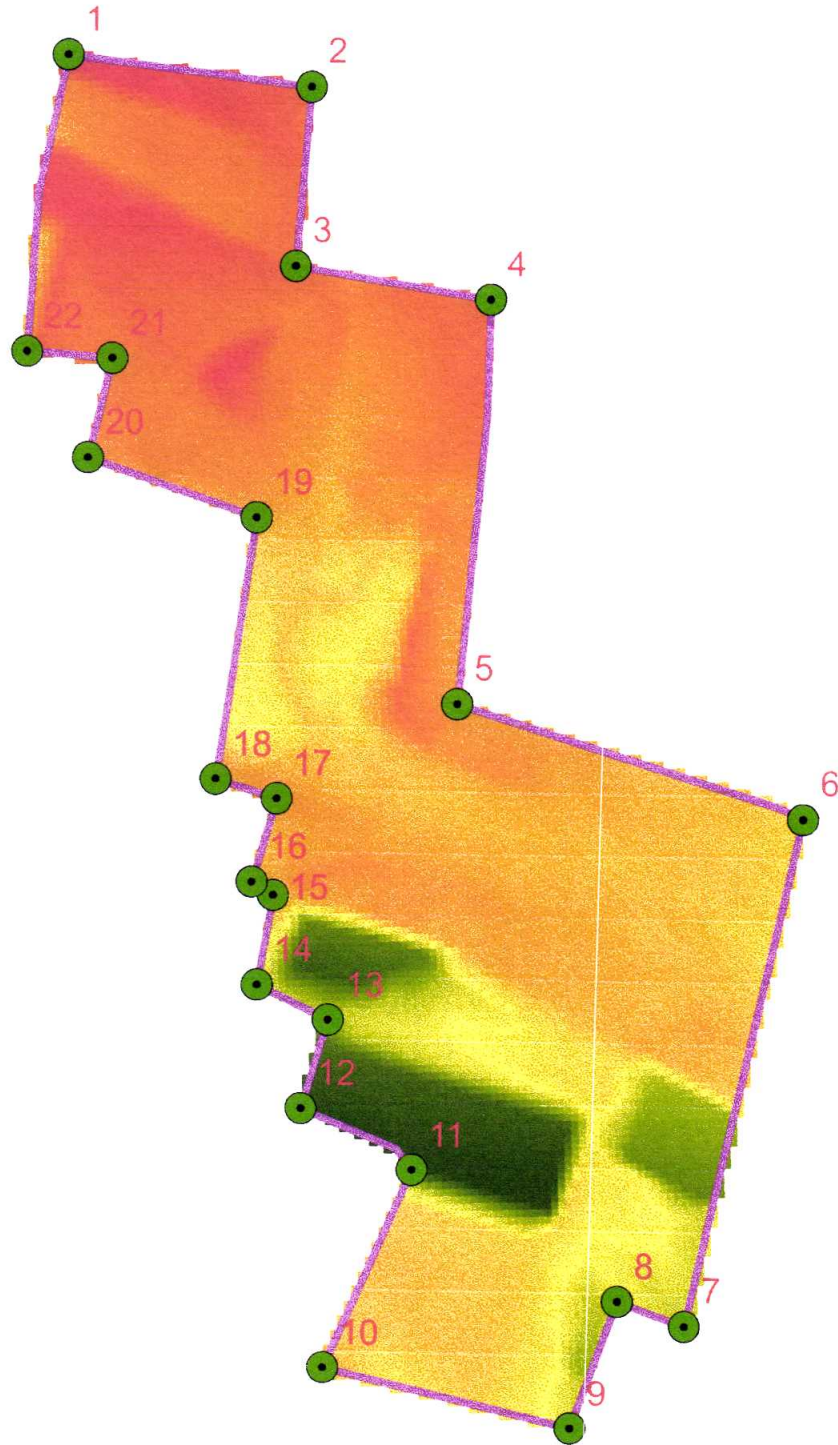
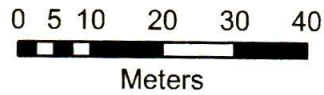
DATE 30/08/2024

[Signature]
AUTHORISED SIGNATORY

True copy attached

[Signature]
COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

**DIGITAL ELEVATION MAP OF THE LEASE AREA BARIKO LATERITE QUARRY
UNDER TANGI TEHSIL, KHUDRA DISTRICT DERIVED FROM
HRSI WORLD VIEW - 1 STEREO PAIR FOR THE PERIOD OF DECEMBER 2020.**



Legend

- ML_PILLAR
- ▭ ML_BND_final

DIGITAL_ELEVATION_MAP_2020.img

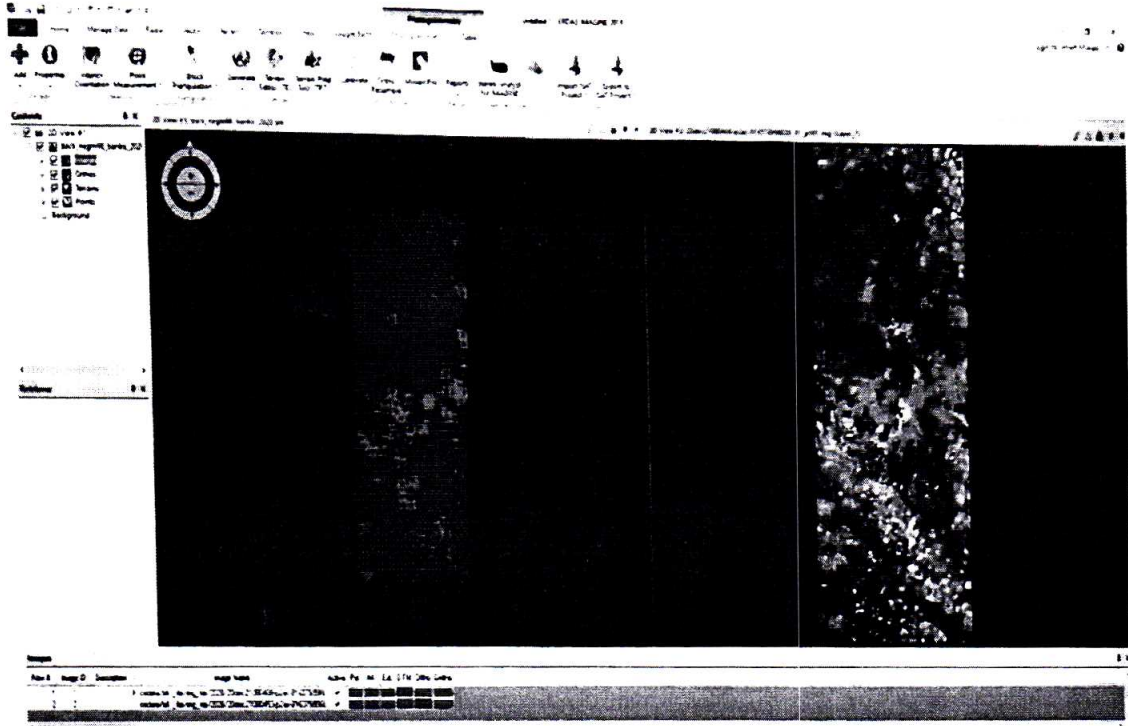
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- High : 25.9729
- Low : 19.3888

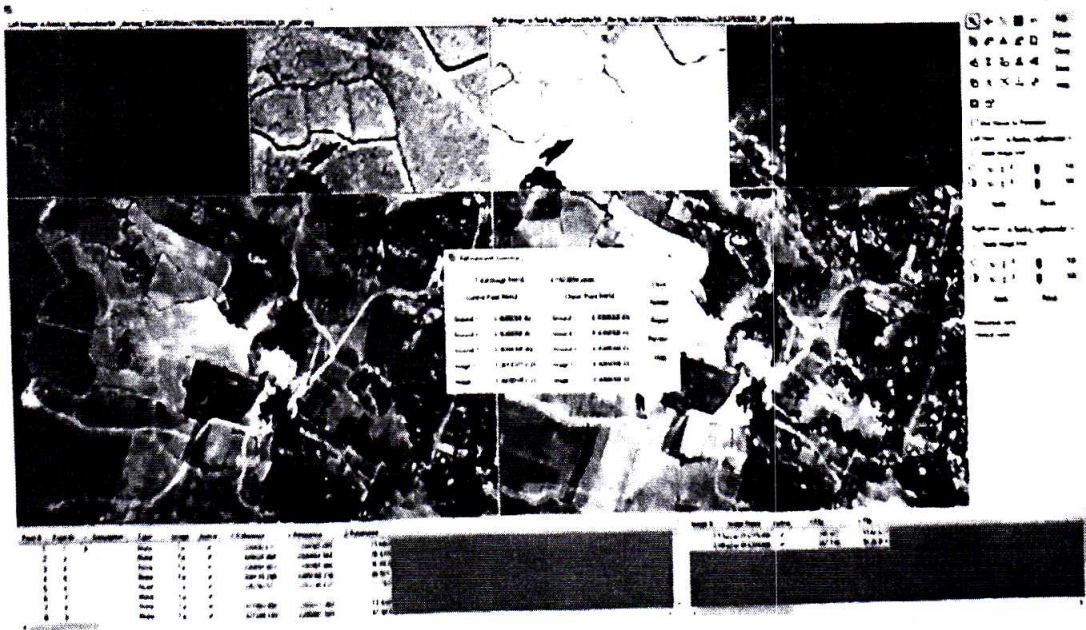


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PHOTOGRAMMETRY BLOCK OF THE 2020



RMSE ERROR OF PHOTOGRAMMETRY BLOCK OF THE YEAR 2020

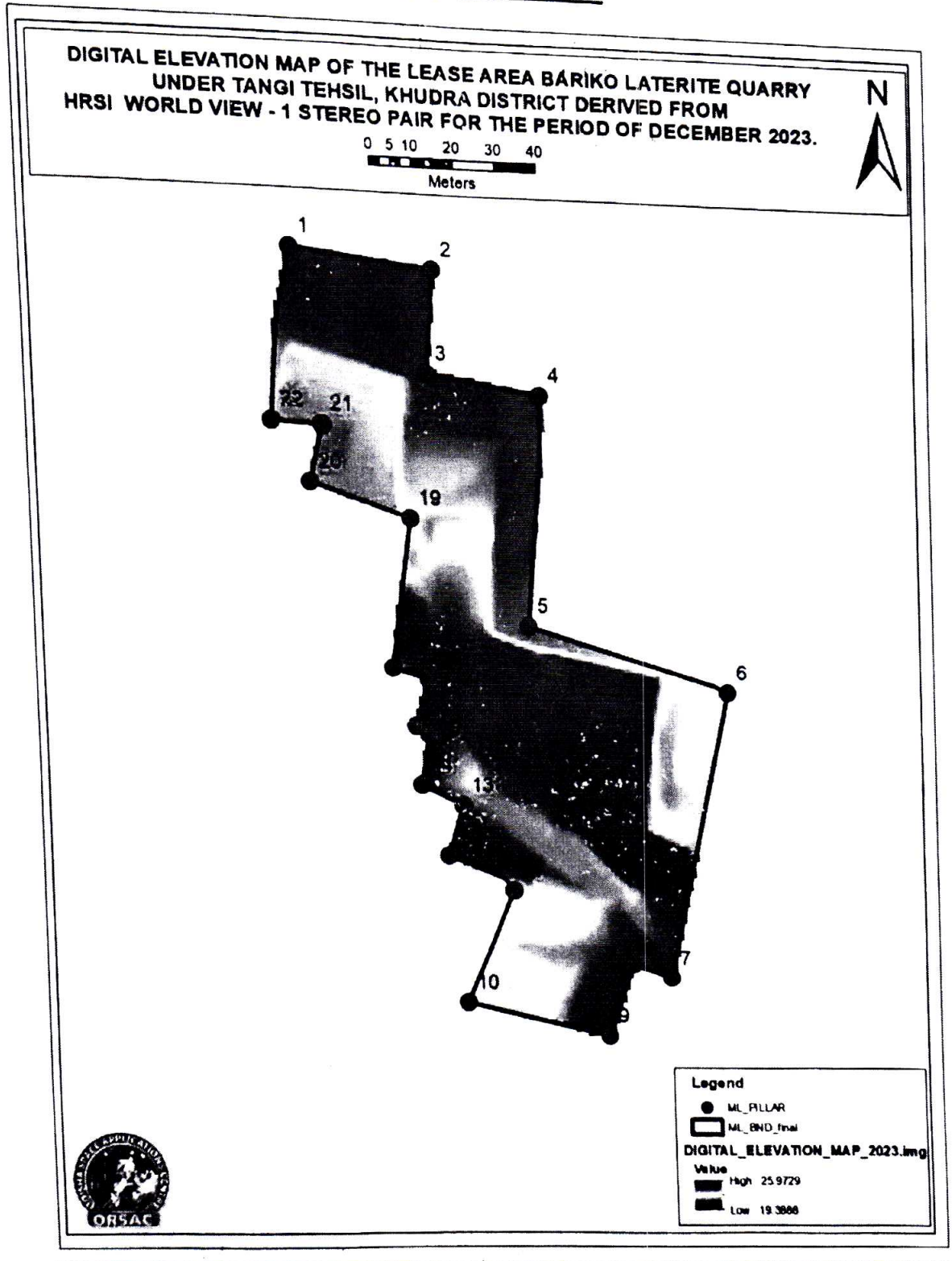


ODISHA SPACE APPLICATIONS CENTRE
 BHUGANESWAR
 MAP NO. 4309, /3
 DATE 30/08/2024
 AUTHORIZED SIGNATORY

True copy attached
 COLLECTOR & DISTRICT MAGISTRATE
 KHORDHA

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DIGITAL ELEVATION MAP OF THE YEAR 2023



ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309, /5

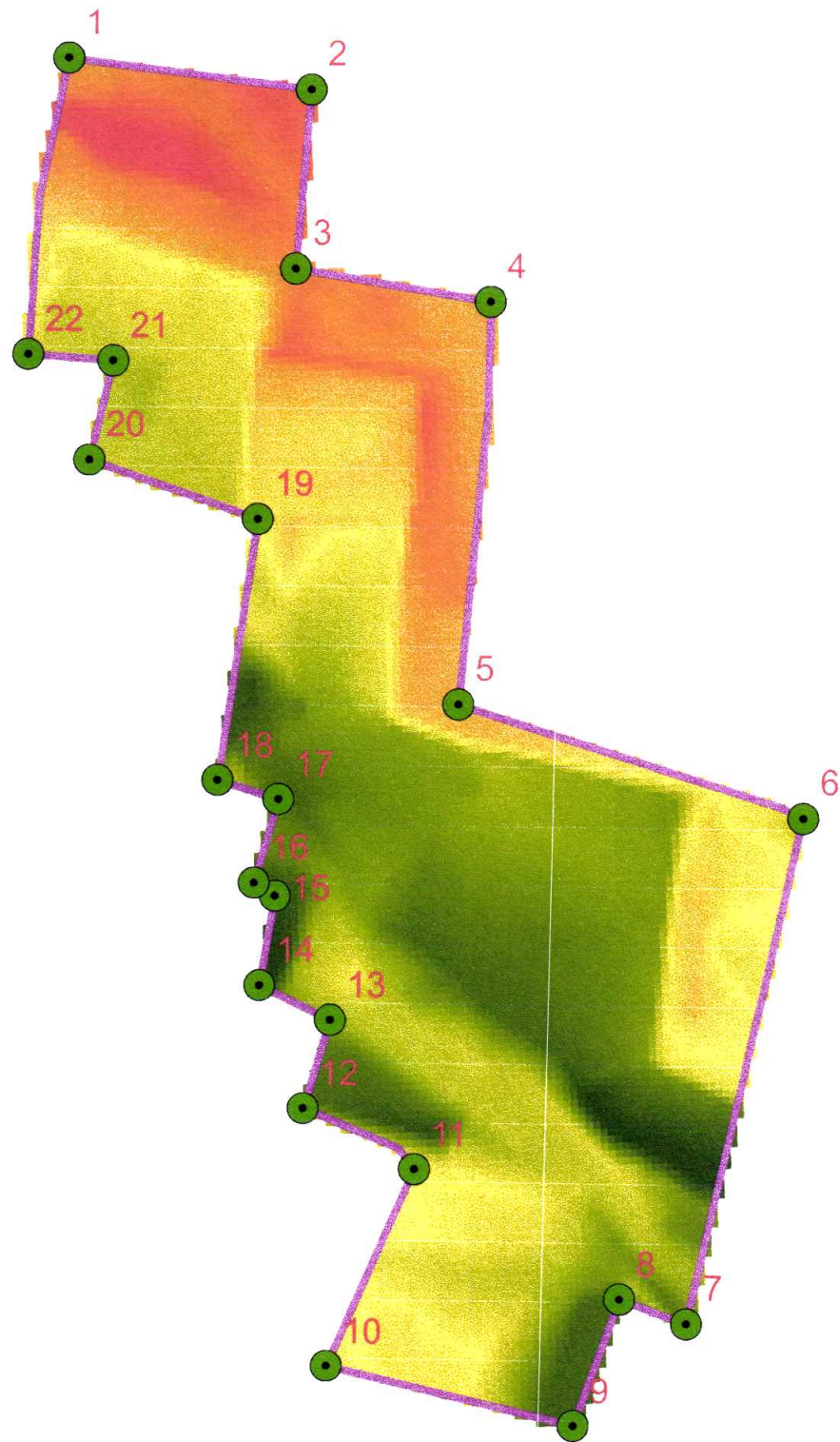
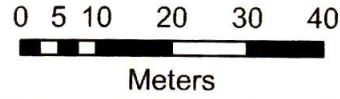
DATE. 20/08/2024

[Signature]
AUTHORISED SIGNATORY

Done with attached

[Signature]
COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

DIGITAL ELEVATION MAP OF THE LEASE AREA BARIKO LATERITE QUARRY UNDER TANGI TEHSIL, KHUDRA DISTRICT DERIVED FROM HRSI WORLD VIEW - 1 STEREO PAIR FOR THE PERIOD OF DECEMBER 2023.

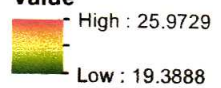


Legend

- ML_PILLAR
- ▭ ML_BND_final

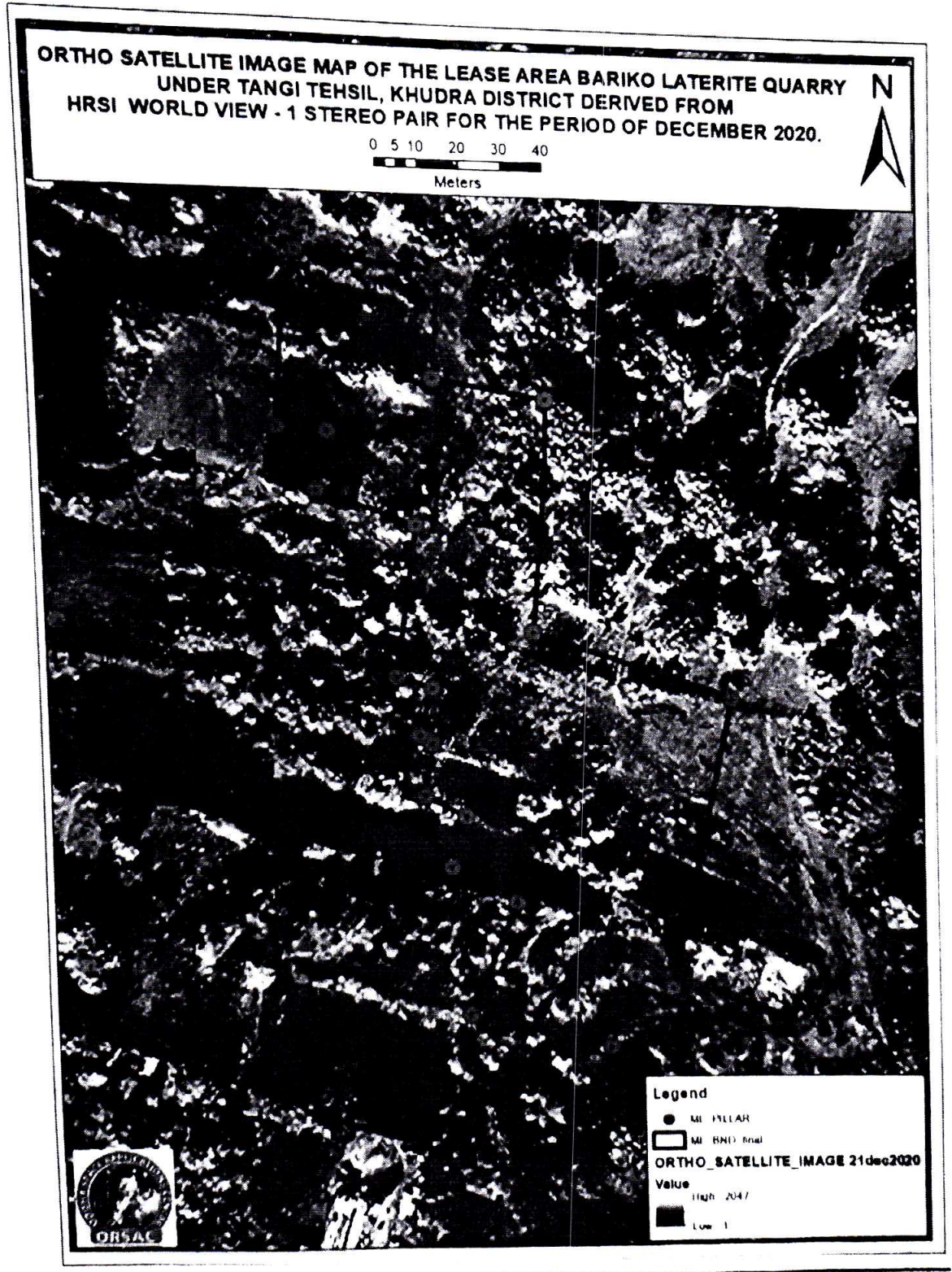
DIGITAL_ELEVATION_MAP_2023

Value



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ORTHO MAP OF THE YEAR 2020



ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 16

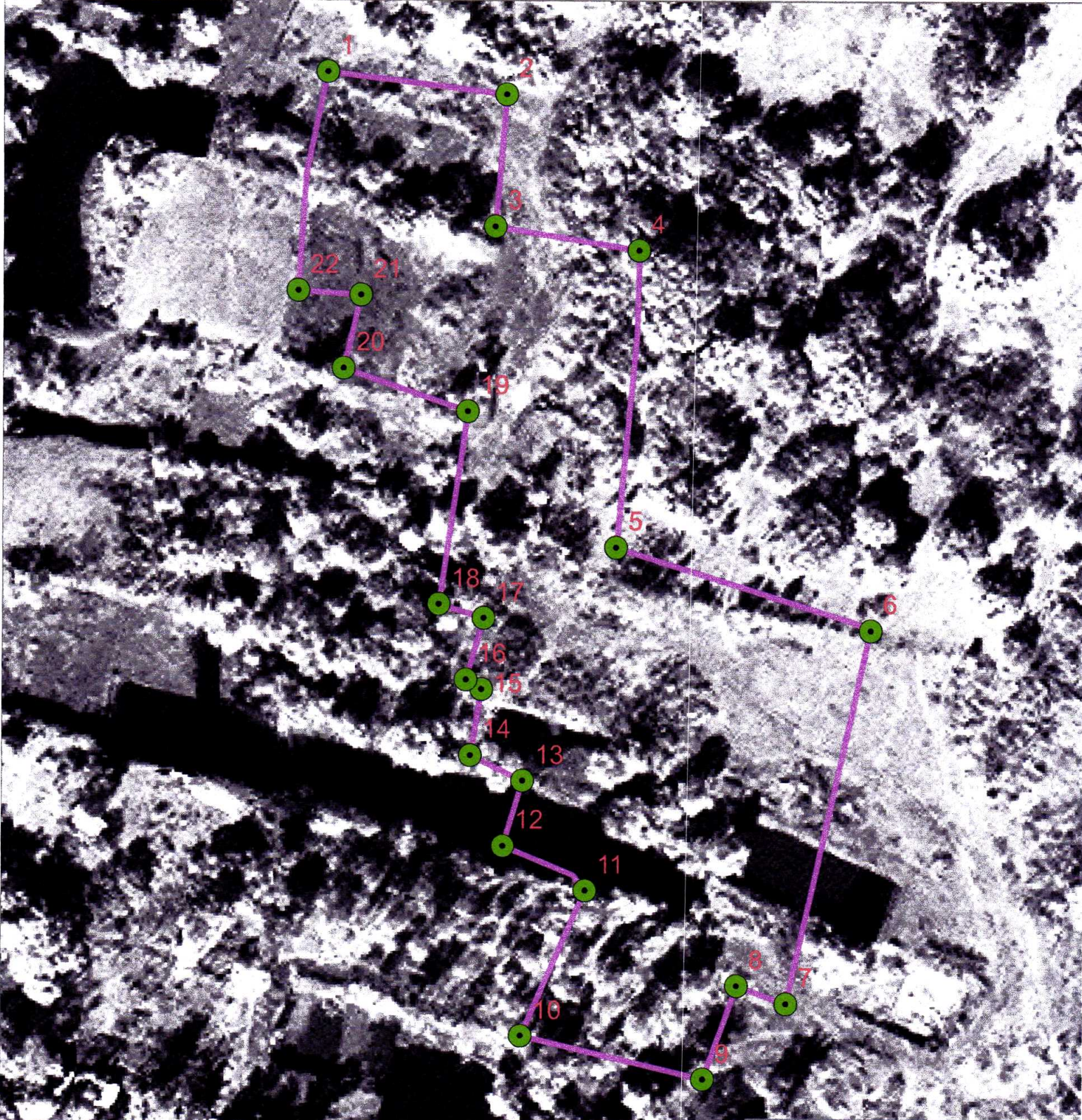
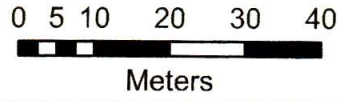
DATE. 30/08/2024

[Signature]
AUTHORISED SIGNATORY

True copy attached

[Signature]
COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

ORTHO SATELLITE IMAGE MAP OF THE LEASE AREA BARIKO LATERITE QUARRY UNDER TANGI TEHSIL, KHUDRA DISTRICT DERIVED FROM HRSI WORLD VIEW - 1 STEREO PAIR FOR THE PERIOD OF DECEMBER 2020.



Legend

- ML_PILLAR
- ▭ ML_BND_final

ORTHO_SATELLITE_IMAGE 21dec20

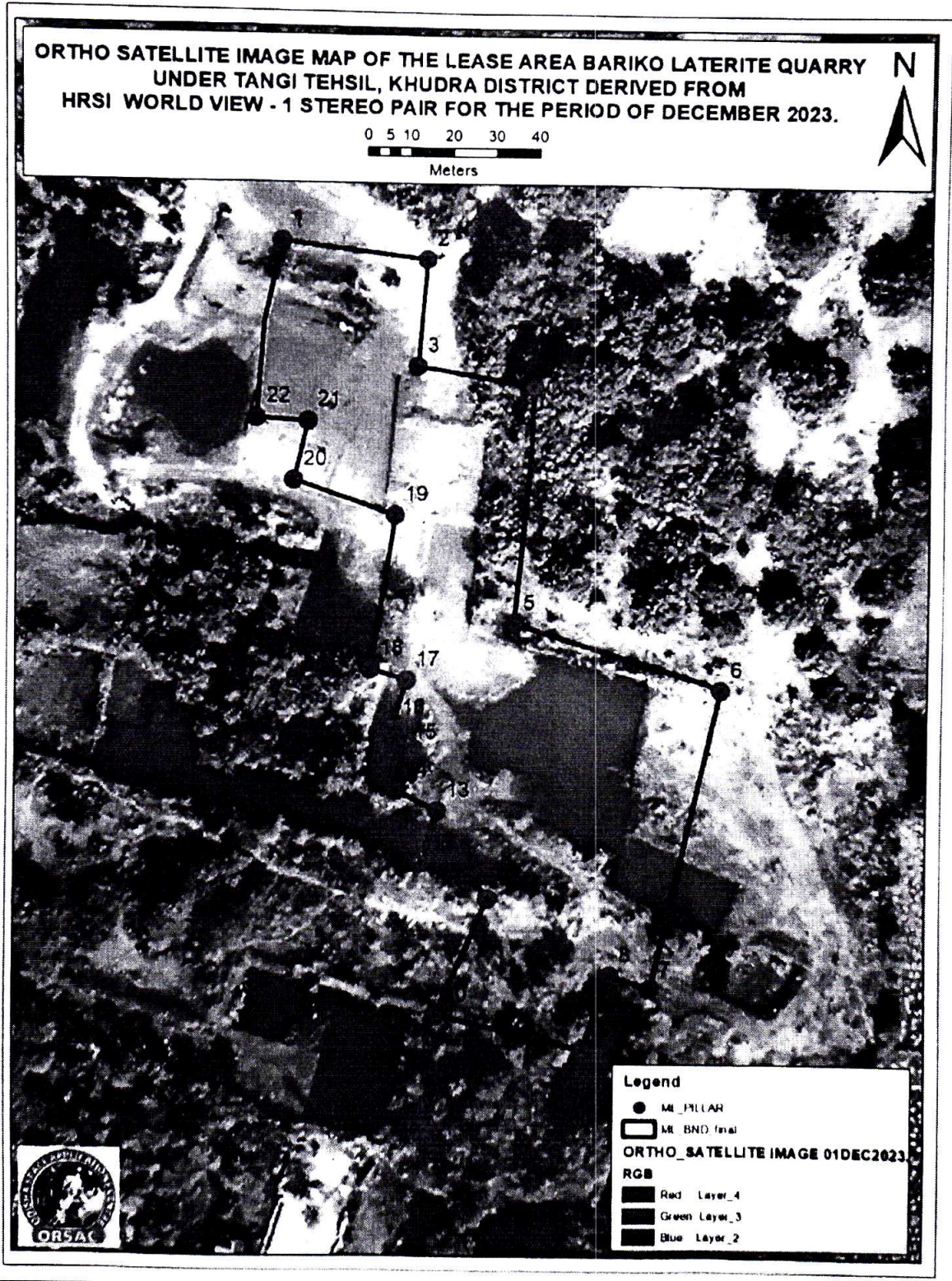
Value

- High : 2047
- Low : 1



-2X8-

ORTHO MAP OF THE YEAR 2023



ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 7

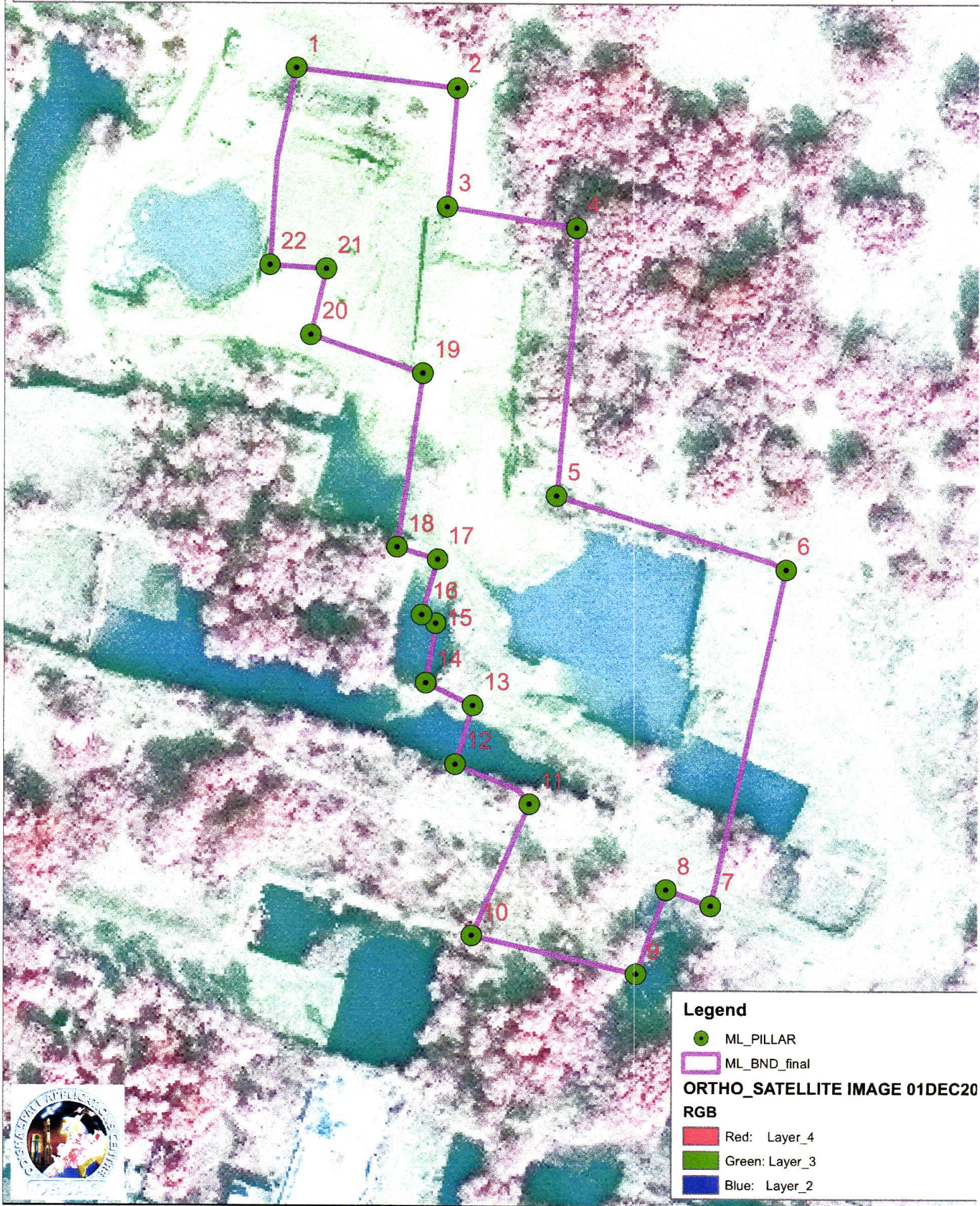
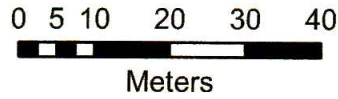
DATE. 30/08/2024


AUTHORISED SIGNATORY






True copy attested


COLLECTOR & DISTRICT MAGISTRATE
KHORDHA

ORTHO SATELLITE IMAGE MAP OF THE LEASE AREA BARIKO LATERITE QUARRY UNDER TANGI TEHSIL, KHUDRA DISTRICT DERIVED FROM HRSI WORLD VIEW - 1 STEREO PAIR FOR THE PERIOD OF DECEMBER 2023.



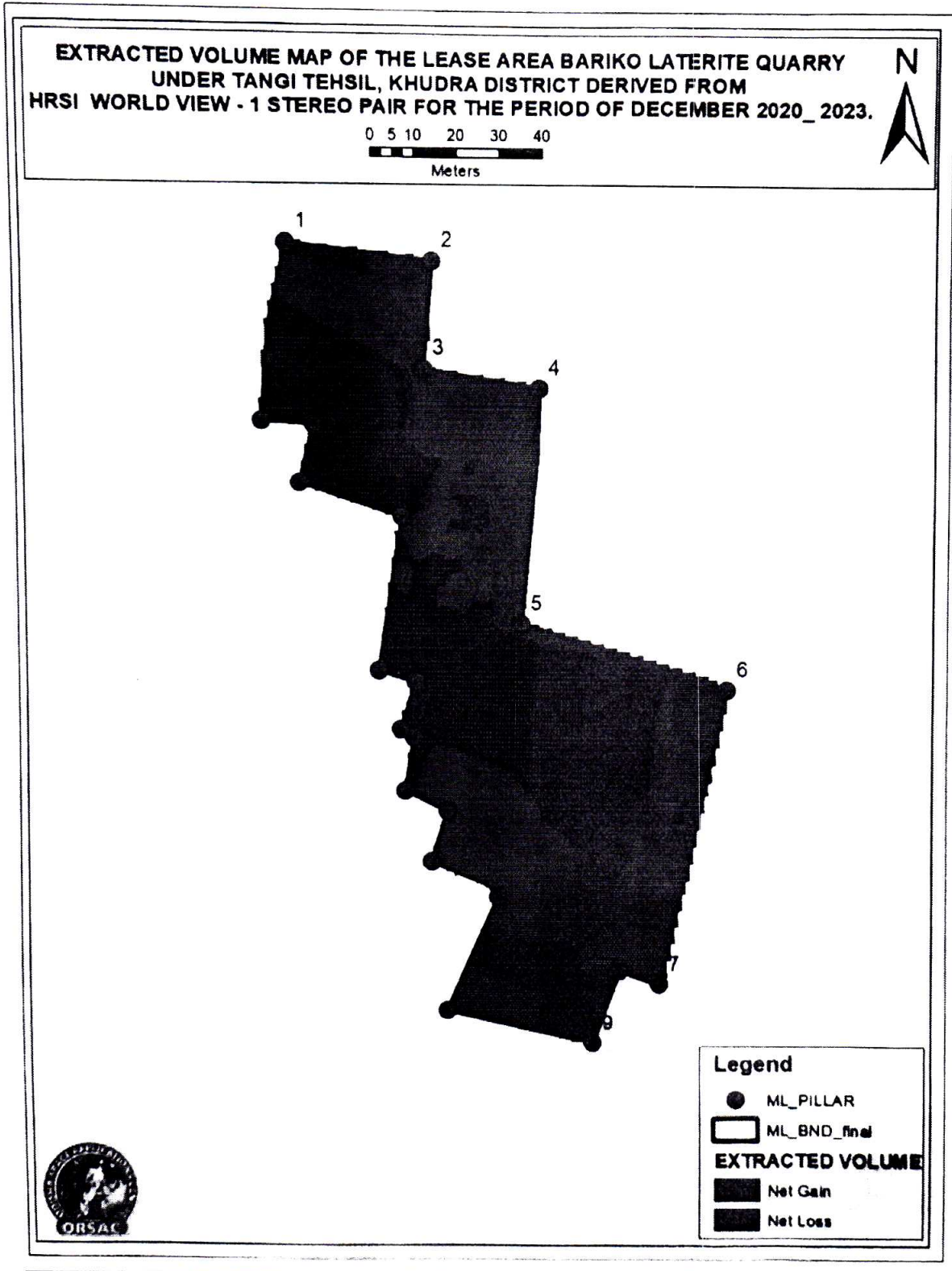
Legend

-  ML_PILLAR
-  ML_BND_final
- ORTHO_SATELLITE IMAGE 01DEC20**
- RGB**
-  Red: Layer_4
-  Green: Layer_3
-  Blue: Layer_2



-2X-

EXTRACTED VOLUME MAP OF THE YEAR 2020 – 2023



ORISSA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 18

DATE. 30/08/2024

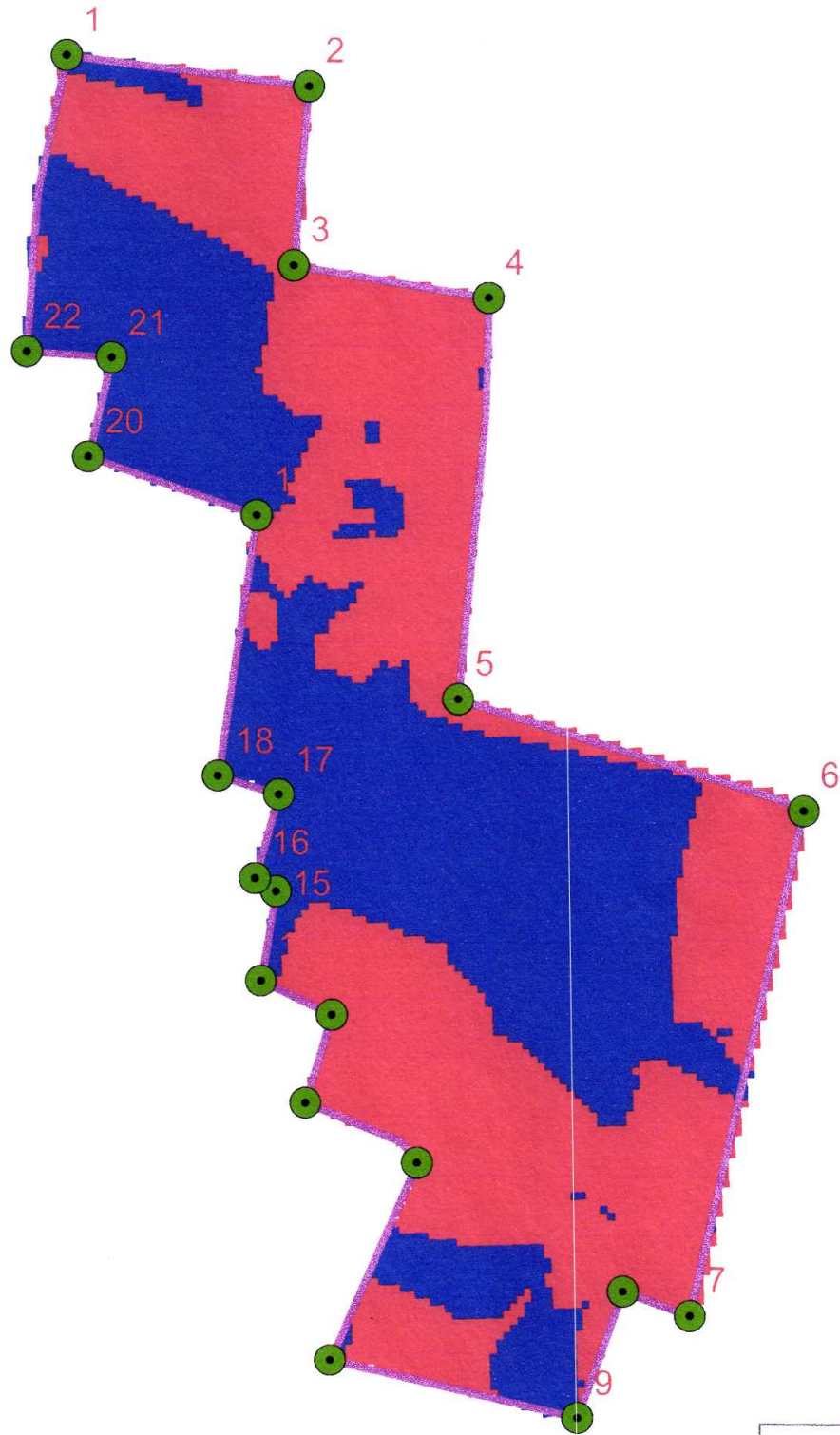
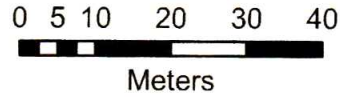
[Signature]
AUTHORISED SIGNATORY

True copy attested

[Signature]

COLLECTOR & DISTRICT MAGISTRAT
KHORDHA

EXTRACTED VOLUME MAP OF THE LEASE AREA BARIKO LATERITE QUARRY UNDER TANGI TEHSIL, KHUDRA DISTRICT DERIVED FROM HRSI WORLD VIEW - 1 STEREO PAIR FOR THE PERIOD OF DECEMBER 2020_ 2023.



Legend

- ML_PILLAR
- ML_BND_final
- EXTRACTED VOLUME**
- Net Gain
- Net Loss





PHOTOGRAPH TAKEN DURING COLLECTION OF GROUND CONTROL POINTS AT KALUPADA GHAT RAILWAY STATION, TANGI TAHASIL.

ODISHA SPACE APPLICATIONS CENTRE
BHUBANESWAR

MAP NO. 4309 / 9

DATE 30/08/2024

[Signature]
AUTHORISED SIGNATORY

true copy attested.

[Signature]
COLLECTOR & DISTRICT MAGISTRATE
KHORDA