

कार्यालय कलेक्टर (खनिज शाखा) जिला अलीराजपुर म.प्र.

Email – modgmali@mp.gov.in

क्रमांक/823 / खनि / 2023
प्रति,

अलीराजपुर दिनांक 21 / 06 / 2023


कार्यवाहक संचालक
दि म.प्र. स्टेट माईनिंग कार्पोरेशन लि.
भोपाल (म.प्र.)

विषय:- सिया द्वारा जारी EDS का उत्तर देने के लिए आवश्यक अतिरिक्त दस्तावेजों के संबंध में।

संदर्भ:- आपका पत्र क्रमांक/न.क्र.-291/2023/248 दिनांक 16.06.2023।

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उपरोक्तानुसार विषयांतर्गत संदर्भित पत्र अनुसार खनिज रेत खदानों की जिला सर्वेक्षण रिपोर्ट के संबंध में लेख है कि जिले में जारी जिला सर्वेक्षण रिपोर्ट के समय पूर्व में घोषित रेत खदानों का रकबा DSR अनुसार ही था। परन्तु नियमानुसार एवं निर्देशानुसार खनिज रेत की नीलाम खदानों में नये निर्माण कार्यों से निर्मित अद्यतन स्थिती अनुसार नियमों में दी गई दूरी छोड़ने पर 13 रेत खदानों के क्षेत्र उपलब्धता में भिन्नता आई है। **जिला सर्वेक्षण रिपोर्ट में संशोधन की कार्यवाही प्रचलित है।**


प्रभारी अधिकारी 21.6.23

कार्यालय कलेक्टर (खनिज शाखा)
जिला अलीराजपुर म.प्र.

अलीराजपुर दिनांक 21 / 06 / 2023

क्रमांक/824/ खनि / 2023
प्रतिलिपी,

1- संचालक महोदय, प्रशासन एवं खनिकर्म म.प्र. भोपाल की ओर सूचनार्थ।


प्रभारी अधिकारी 21.6.23

कार्यालय कलेक्टर (खनिज शाखा)
जिला अलीराजपुर म.प्र.

DISTRICT SURVEY REPORT
(FOR SAND MINING OR RIVER BED MINING)

DISTRICT ALIRAJPUR
MADHYA PRADESH




State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Aera Colony, Bhopal (M.P.)

PREPARED BY

SUB DIVISION COMMITTEE AUTHORIZED TO PREPARED DISTRICT SURVEY REPORT

DISTRICT ALIRAJPUR

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

कार्यालय कलेक्टर खनिज शाखा जिला अलीराजपुर म.प्र

(ईमेल-modgmali@mp.gov.in)

क्रमांक 977/खनि/2022

अलीराजपुर, दिनांक 31/08/2022

प्रति,

कार्यपालन संचालक,
राज्य स्तरीय पर्यावरणीय समाघात समिति,
पर्यावरण परिसर, भोपाल (म.प्र.)

विषय:- जिला सर्वेक्षण रिपोर्ट के संबंध में।

संदर्भ:- सेक, राज्य स्तरीय पर्यावरणीय समाघात समिति की बैठक 591

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उपरोक्त विषयान्तर्गत जिला अलीराजपुर की जिला सर्वेक्षण रिपोर्ट (रेत खनिज हेतु) के संबंध में संदर्भित बैठक में अनुशंसा का पालन प्रतिवेदन निम्नानुसार है:-

क्र	समिति की अनुशंसा	निराकरण
1	पेज 55 में दर्शित तालिका जिसमें लीजवार लम्बाई, चौड़ाई एवं गहराई के साथ 60 प्रतिशत मिनरल पोटेन्शियल दर्शाया गया है इस तालिका में प्रत्येक लीज में अलग-अलग गहराई दर्शायी गयी है। अतएव रिमार्क में अथवा टेबल के आखिर में लीज में गहराई अलग-अलग क्यों ली गई है इस पर टिप्पणी करें। साथ ही इस टेबल रेत की 60 प्रतिशत माइनेबल पोटेन्शियल (रेत खनन हेतु) में टन में भी दर्शाये।	समिति की इस अनुशंसा के संबंध में निवेदन है कि जिले की समस्त 49 रेत खदानों में रेत डिपोजिशन की गहराई यूनिफार्म होना संभव नहीं है इसलिये रेत डिपोजिशन की वास्तविक औसत गहराई दर्शाई गई है। अतः समिति की अनुशंसा के पालन में जिले की प्रत्येक खदान में दर्शाई अलग-अलग गहराई तक रेत डिपोजिशन के संबंध में टेबल के नीचे रिमार्क अंकित कर दिया गया है तथा टेबल में 60 प्रतिशत माइनेबल पोटेन्शियल (रेत खनन हेतु) को ईकाई टन दर्शा दिया गया है (पेज नं. 55 - 56 कॉलम नं. 11)।
2	डी.एस.आर. के पेज नं. 23-24 में जो तालिका का विगत तीन वर्षों के प्रोडक्शन डिटेलस दर्शाये गये है उन्हें 60 प्रतिशत मिनरल पोटेन्शियल दर्शाने वाली तालिका में सम्मिलित करें। जिससे कि एक साथ ही मिनरल पोटेन्शियल एवं विगत तीन वर्षों के प्रोडक्शन डिटेलस का आंकलन कर देवे।	समिति की इस अनुशंसा अनुसार डी एस आर के पेज नं. 23-24 में विगत तीन वर्षों के प्रोडक्शन डिटेलस की एण्ट्री 60 प्रतिशत मिनरल पोटेन्शियल दर्शाने वाली तालिका में पेज नं. 55 - 56 पर कर दी गयी है।
3	इसी प्रकार जिले में स्वीकृत/प्रस्तावित खदानों (रेत खदानों एवं गौण खनिज) के कोर्डिनेटस लीजवार डिजिटलाईज्ड (आर्क व्यू/गूगल अर्थ कम्पटेबल) सी.डी. में संलग्न किया जाये ताकि पर्यावरण अभिरक्षीकृति के समय खदानों की सही स्थिति ज्ञात करने में तथा 500 मीटर के अंडर अन्य स्थित अन्य खदानों की जानकारी प्राप्त करने में सुविधा हो।	समिति की इस अनुशंसा अनुसार स्वीकृत/प्रस्तावित समस्त खनन पट्टों (रेत खदानों एवं गौण खनिज) के कोर्डिनेटस लीजवार डिजिटलाईज्ड (आर्क व्यू/गूगल अर्थ कम्पटेबल) सी.डी. में संलग्न प्रेषित है।

अतः उपरोक्त डी.एस.आर. की 01 सत्यापित हार्ड कॉपी, 01 सॉफ्ट कॉपी एवं जिले समस्त खनन पट्टों की डिजिटलाईज्ड KML file (आर्क व्यू/गूगल अर्थ कम्पटेबल) सी.डी. में संलग्न कर सादर सम्प्रेषित है।

क्रमांक 978/खनि/2022

प्रति,


1. संचालक, प्रशासन एवं खनिकर्म म.प्र. भोपाल की ओर सूचनार्थ सम्प्रेषित।
2. कलेक्टर, जिला अलीराजपुर की ओर सूचनार्थ सम्प्रेषित।

प्रभासी अधिकारी
कार्यालय कलेक्टर (खनिज शाखा)
खनिज शाखा जिला अलीराजपुर
अलीराजपुर, दिनांक 31/08/2022

प्रभासी अधिकारी
कार्यालय कलेक्टर (खनिज शाखा)
खनिज शाखा जिला अलीराजपुर

PREFACE

The present District Survey Report is prepared in compliance of interim order passed by the Hon'ble Supreme Court on 10-11-21 in the case of Civil Appeal No. 3661-3662/2020, State of Bihar & Others vs. Pawan Kumar & Others. The District Collector through its order no. 273-274/Khani/2021-22, Alirajpur, dated 23-03-2021 had constituted the sub-divisional committee to prepare the District Survey Report. The needs for District Survey Report (DSR) have been necessitated by Ministry of Environment, Forest and Climate Change (MoEF & CC) vide their Notification No. 125 (Extraordinary, Part II Section 3, Sub-section ii), S.O. 141 (E), dated 15th January 2016. The notification was addressed to bring certain amendments with respect to the EIA notification 2006 and in order to have a better control over the legislation. District level committees have been introduced in the system. As a part of this notification, preparation of District Survey Reports has been introduced. Subsequently, Ministry of Environment, Forest and Climate Change has published Notification No. 3611 (E), dt. 25th July, 2018 regarding inclusion of the —Minerals Other than Sand and format for preparation of the DSR has been specified. Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams. This DSR has been prepared in conformity with the S O 141 (E), S O 3611 (E) and other sand mining guidelines published by MOEF & CC time to time as well as the requirement specified in Madhya Pradesh Sand (Mining, Transportation, Storage and trading) Rules, 2019. The purpose of DSR is to identify the mineral potential areas where mining can be allowed; and also, to distinguish areas where mining will not be allowed due to proximity to infrastructural structures and installations, areas of erosion, areas of environmental sensitivities etc. The DSR would also help to estimate the annual rate of replenishment wherever applicable and allow time for replenishment. The DSR of Alirajpur district also describes the general geographical profile of the district, distribution of natural resources, livelihood, climatic condition and sources of revenue generation.


State Level Environment Impact
Assessment Authority, M.P.
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Paryavaran Parisar
E-5 Arcra Colony, Bhopal (M.P.)

अधिकृत समिति द्वारा तैयार एवं मन्व्यपित

प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

DISCLAIMER

The data may vary due to flood, heavy rains and other natural calamities. Therefore it is recommended that DEIAA/SEIAA may take into consideration all its relevant aspects / data while scrutinizing and recommending the application for EC to the concerned authority.



State Level Environment Impact
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अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रमुख अधिकारी
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OBJECTIVES

The main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following

- Identification of areas of aggradations or deposition where mining can be allowed; and
- Identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area.
- Identification of mineral wealth in the district.

Prepared under:

- a) Appendix -X of MoEF&CC, GoI Notification S.O. 141(E) dated 15.1.2016
- b) Sustainable Sand Mining Guidelines
- c) MoEFCC, GoI Notification S.O. 3611(E) dated 25.07.2018
- d) Sand Mining Framework -2018
- e) Enforcement & Monitoring Guidelines for Sand Mining by MoEF&CC-202


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अधिकृत समिति द्वारा तैयार एवं स्थापित

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DISTRICT SURVEY REPORT FOR RIVER BED SAND MINING

As per the Gazette Notification dated 15th January, 2016 of Ministry of Environment, Forest and Climate Change a joint survey has been carried out by the District Environment Impact Assessment Authority (DEIAA) with the assistance of Irrigation Department, Drainage Department, Forest Department, Mining Department and Revenue Department in the district for preparation of the District Survey Report.

The Ministry of Environment, Forest & Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand Mining in the Country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring.

Section 23 C of MMDR, Act 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals. But in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activity es particularly sand mining in the country.

Use of latest remote surveillance and IT services helps in effective monitoring of the sand mining activity in-country and also assist the government in controlling the illegal mining activity in the country. Thus, there is a need for an effective policy for monitoring of sand mining in the Country which can be enforced on the ground. These guidelines focus on the effective monitoring of the sand mining since from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public. Further, the effective monitoring and enforcement require efforts from not only Government agencies but also by consumers and the general public.


State Level Environment Impact
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It is the responsibility of every citizen of India to protect the environment and effective monitoring can only be possible when all the stakeholders' viz. Central Government, State Government, Leaseholders/Mine Owners, Distributors, Dealers, Transporters and Consumers (bulk & retail) will contribute towards sustainable mining, and comply with all the statutory provisions. It is felt necessary to identify the minimum requirements across all geographical regions to have a uniform protocol for monitoring and enforcement of regulatory provision prescribed for sustainable sand and gravel mining.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining.

The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020" shall prevail.


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CHAPTER – 1

INTRODUCTION


Aims and Objective of District Survey Report:

The District Survey Report of Alirajpur District has been prepared in compliance of interim order passed by the Hon'ble Supreme Court on 10-11-21 in the case of Civil Appeal No. 3661-3662/2020, State of Bihar & Others vs. Pawan Kumar & Others and as per the guide line of Ministry of Environment, Forests & Climate Change (MoEF & CC), Government of India vide Notification S.O.-1533(E) dated 14th Sept, 2006 and subsequent MoEF & CC Notification S.O. 141(E) dated 15th Jan, 2016. This report shall guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. Further, MoEF & CC published a notification S.O. 3611(E) Dated 25th July, 2018 and recommended the format for District Survey Report.

The main objective of DSR is to identify the areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and estimation of annual rate of replenishment and allowing time for replenishment after mining in that area. The DSR would also help to calculate the annual rate of replenishment wherever applicable and allow time for replenishment. Besides the sand mining, the DSR also include the potential development scope of insitu minor minerals.

The objectives of the District Survey Report are as following:

1. Identification and Quantification of Mineral Resource and its optimal utilization.
2. To regulate the Sand & Gravel Mining in the Country, identification of site-specific end-use consumers and reduction in demand & supply gaps.
3. Use of information technology (IT) & latest scientific method of mining for surveillance of the sand mining at each step.
4. District Survey report shall enable Environmental Clearance for cluster of Sand & Gravel Mines. It shall assist concern Department during post Environmental Clearance Monitoring.
5. To control the instance of illegal mining.
6. To control the flood in the area.
7. To maintain the livelihood of aquatic habitat.


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8. To protect the incursion of ground water in the area. Limiting extraction of material in floodplains to an elevation above the water table generally disturbs more surface area than allowing extraction of material below the water table.

9. To keep accumulated data records viz. details of Mineral Resource, potential area, lease, approved mining plan, co-ordinates of a district at one place.

10. To maintain the records of revenue generation.

11. In-stream extraction of gravel from below the water level of a stream generally causes more changes to the natural hydrologic processes than limiting extraction to a reference point above the water level.


12. In-stream extraction of gravel below the deepest part of the channel generally causes more changes to the natural hydrologic processes than limiting extraction to a reference point above the thalweg.

13. Excavating sand and gravel from a small straight channel with a narrow floodplain generally will have a greater impact on the natural hydrologic processes than excavations on a braided channel with a wide floodplain.

14. Extracting sand and gravel from a large river or stream will generally create less impact than extracting the same amount of material from a smaller river or stream.

Structure of the Sub divisional Committee Constituted for preparation of the District Survey Report for Sand minerals of District Alirajpur

S.No.	Member of committee
1	Sub Divisional Magistrate, Sub-Division Alirajpur (M.P.)
2	Executive engineer, WRD, Alirajpur (M.P.)
3	Regional Officer, MP Pollution Control board, Regional office Dhar/Indore
4	Sub Divisional Officer (Forest), Alirajpur (M.P.)
5	Officer In-charge (Mining Branch), Alirajpur (M.P.)


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अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
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ABOUT THE DISTRICT

1.1 Location & Extent


Alirajpur district lies between the parallels of North latitudes $21^{\circ} 55' 23''$:: $23^{\circ} 17' 18''$ and the East longitudes $74^{\circ} 01' 52''$:: $75^{\circ} 00' 52''$ and cover by the degree sheet no. 46 I, 46 J and 46 K of Survey of India. It has a total geographical area of about 3826.57 (as per District Land Record) square kilometres. The district's boundaries include the neighbouring states of Maharashtra and Gujarat; it is situated in the Malwa region of Madhya Pradesh. The district is surrounded by the Chota Udaypur district of Gujarat, and Dhar and Jhabua district of Madhya Pradesh. Narmada River forms the southern boundary of the Alirajpur district.


Alirajpur was forming the district of Madhya Pradesh on 17 may 2008. The district comes under the Indore division of Madhya Pradesh and situated in the western part of the state. It is C District Survey Report, Alirajpur, Madhya Pradesh 2 named after its headquartering town Alirajpur, which was formerly the capital of a princely state of India. About 55% of the total population of the district is Bhilala, 21% is Patlya, 15% is Bhil with the remaining 9% is made up by diverse groups.

Alirajpur economy depends primarily on agricultural endeavours, especially farming, of mangoes. The agricultural trading yard in Alirajpur is the biggest in all the state when it comes to mango trading. Also, the Noor Jahan, a very rare variety of Mango, of which only few trees are currently surviving, can only be found in the district, specifically in the town of Katthiwara.

1.3 Connectivity of District

The nearest railway station to reach the Alirajpur is the Dahod Railway station which is in Gujarat. However, on February 8, 2008, the foundation for the Vadodara-Dhar broad-gauge rail line was laid, promising complete rail connectivity of the district to the others. The nearest airport is Indore. Regular bus service is available to Alirajpur from other major cities of the State. There are no regular flights from other major cities of the country to Alirajpur. Alirajpur Railway Station far about 7 kilometers from the Alirajpur at village Saija of the district and another railway station is Dahod (Gujrat), Meghnagar (Maddhya Pradesh) and Vadodara (Gujrat), which is 73, 87 and 158 kms away from Alirajpur respectively. Nearest airport is Vadodara Airport (BDQ) Gujarat and Indore Airport (ABH) Madhya Pradesh, which is 153 and 195 kms away from Alirajpur respectively.


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1.4 Flora and Fauna

1.4.1 Flora

Bhil and Bhilala primarily depend upon medicinal plants of their surrounding for treatment of their ailments. Living close to nature these tribal communities have acquired unique knowledge about the uses of wild flora and fauna. Therefore, Medicinal Plants and its parts are excellent sources of medicine. An Ethno medicinal use of plants used by the tribes of Alirajpur is given in Table below:-

Table : Ethno medicinal uses of plants used by the tribes of Alirajpur

Local Name	Plants	Uses
Kulthi	Atylosis scorbeoids (L.) Benth: (Papilionaceae)	Treatment of diarrhoea in cattle
Anko:	Alangium salvifolium Linn: (Alangiaceae)	The poultice of leaves is applied on joints to relieve he rheumatic pain. The powder of root bark is given with milk for the treatment of fever
Jurug	Abrus precatories Linn: (Fabaceae)	Seeds to treat diabetes, ingredients to treat leucoderma, scratches & wound caused by dogs, cats and mice.
Khair	Acacia catechu (Linn.f.) Willd: (Mimosaceae)	The bark of the tree is used in chronic diarrhoea
Kidamar	Aristolochiyabracteolate (Lam): (Aristolochiaceae)	Root powder is given for abortification & leaves powder is given in snake bite.
Satavar	Asparagus racemosus Willd (Liliaceae)	Root powder is used to increase vigour, strength and lactation
Vajradanti	Barleria prionits Linn : (Acanthaceae)	Twinge powder is used for toothache. The leaves are used to promote healing of wounds and to relieve joint pain. A mouthwash made by tribal people from root tissue and it is used to treat bleeding gums
Kachnar	Bauchinia variegata Linn: (Caesalpiniaceae)	Bark is used in skin disease.pod is used in diarrhoea
Shivlingi	Bryonia lacinoso Linn: (Cucubitaceae)	Seeds are used to cure sterility in women
Hingot	Balanites aegyptiaca(L.) Delile: (Balanitaceae)	Rip fruit pulp is mixed in cow's milk and given it twice in a day to children suffering from pneumonia.
Malkangni	Celastrus paniculata willd: (Celastraceae)	: the seed oil is used for massage on joints of body to relieve rheumatic pain.
Harjori	Cissus quadrangularis Linn:(Vitaceae)	Stem paste is used to joint bone fracture, obesity and associated oxidative stress and juice is given in asthma.
Aprajita	Clitoria ternatea Linn:(Fabaceae)	The root of the plant is used to remove stone in Gall bladder
Bachaniyo	Cocculus hirsutus:(L.) Diels: (Menispermaceae)	Root extract is given to cure leucorrhoea & fruit is used for dye
Jangli haldi	Curcuma aromatic salisb: (Zinziberaceae)	The rhizome is used in common cold and digestion
Safed musli	Chlorophytum arundinaceum Barke: (Liliaceae)	The roots of the plant are used for general weakness, as tonic and aphrodisiac. tender leaves are used as vegetable by the tribal's
Jangli Kando	Drimiaindica (Roxb.) Jesop: (Liliaceae)	Leaves are used to vegetable and leaves paste is applied on skin in sun stoke
Bhringraj	Eclipta alba Linn: (Asteraceae)	Applied with oil to reduce greying of hair and hair loss
Gurmar	Gymnoma olyvestre Retz : (Asclepiadaceae)	The powder of dried leaves is given with water for the treatment of diabetes.
Marodphali	Helicteres isora Linn:	The powder of fruit is given with water and salt for the

	(Sterculiaceae)	treatment of digestive disorder. The powder of root is used for diabetes and skin diseases.
Kurchi	Holarrhena antidysenterica Wall: (Apocynaceae)	Bark extract is given in diarrhoea.& bark powder is given in the treatment of piles and the bark powder is given with cow milk for the treatment of urinary troubles & skin diseases.
Kauch	Mucuna pruriens (L.)DC : (Leguminaceae)	Leaves juice is used for ulcers. The roots decoctions used for the treatment of fevers, purifiers blood and asthma, cough and stone in the bladder.
Harsingar	Nyctanthus arbortritis Linn:(Oleaceae)	The paste of leaves is applied joints for the treatment of rheumatism and the juice of leaves is given for sciatica.
Karanj	Pongamia pinnata (Linn.) Pierre : (Papilionaceae)	The seed oil is applied on skin eruptions and eczema.
Gurbel or Giloe	Tinospora cardifolia (Willd.) Miers ex Hook. f. & Thorms:(Menispermaceae)	The juice of stem is taken orally as tonic. After long illness, juice of the plant removes the weakness along with side effects of antibiotic

1.4.2 Fauna

In south of the district, Mathwad region surround by the Vindhya mountain range is the dense area of Wild animals, Bear, rabbit, Lion, Panther, Tiger can be seen near the famous temple of Kajalrani.


1.5 Topography

Alirajpur area is predominantly hilly and undulating. In this Alirajpur hill topography the difference between the highest and the lowest points varies between 20 meters to 50 meters. But this difference goes on increasing as one moves towards south of Alirajpur district. Most of the cultivated area is trapped between the hills forming the valleys. The height elevation is 751 meter amsl in south of district while lowest elevation 75 meter amsl elevation in south western part close to the Narmada river.

1.6 Geomorphology

Geomorphic surface in the Alirajpur terrain is form by Vindhyan hills and Malwa plateau. The terrain is hilly and undulating due to differential erosion of hard rock especially weathering of basalt. The general trends of the hills are in east-west direction. The erosional characteristic of plateau in the area of basaltic terrain are comprises dissected plateau, moderate dissected plateau, valley fills, highly dissected plateau and relict dissected. Area in hectare and percentage of the geomorphic surface are given in table.

Geomorphic Surface	Area (in hundred hectare)	Area in %
Dissected Pediment	1748.06	54.02
Highly Dissected Plateau	724.87	22
Valley Fills/ Valley Flats	180.57	5.67
Moderately Dissected Plateau	540.29	17.13
Relict Plateau	26.64	0.80


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1.7 Drainage System

The area is well water divided and criss-crossed by a number of streams, rivers and rivulet. The perennial river Narmada flows through the area and the important tributaries are Hathni, Sukar and Ankhai. The Hatni River has south-easterly flow and it has 263 first order, 55 second order, 10 third order, 2 fourth order and 1 fifth order streams. The Ankhai River has 173 first order, 37 second order, 12 third order, 3 fourth order and 1 fifth order streams. The Sukar River has 158 first order, 23 second order, 9 third order and 1 fourth order streams.

1.7.1 Narmada River

The Narmada is a major river in India and it also called the Rewa, is a river in central India and the fifth longest river in the Indian subcontinent. It is the fourth longest river that flows entirely within India, after the Ganga, the Godavari, and the Krishna. It is also known as "Life Line of Madhya Pradesh" for its huge contribution to the state of Madhya Pradesh in many ways. In Alirajpur district Narmada is flowing from the Southern boundary of the district. The River Narmada flows along a path of about 45 kilometres inside the district.

1.7.2 Hatni River

Hatni River is a major river flowing in the Alirajpur district. The river forms the eastern boundary of the district. The flow of the river is from north to south direction. The catchment of Hatni river is the bigger than other catchment in the district. After making a big catchment the Hatni River joins Narmada in the south near jandhan Village. The total length of the Hatni River is about 110 km in the Alirajpur District.

1.8 Rainfall

The average annual rainfall in the district is about 912.8mm. Most of the rainfall occurs in monsoon season while there is also a little of rainfall in winter season. Climate is generally moderate and seasons are well defined. The summers are hot, winters are short and the monsoon season is generally pleasant. A hot summer and general dryness characterize the climate of Alirajpur district, except during the southwest monsoon season. The year can be divided in to four seasons. The winter commences from middle of November and lasts till the end of February. The period from March to about middle of June is the hot summer season. District Survey Report, Alirajpur, Madhya Pradesh 8 May is the hottest month of the year. The southwest monsoon starts from middle of June and lasts till end of September. October and middle of November constitute the post monsoon or retreating monsoon season.

1.9 Temperature

The temperature starts rising from the beginning of February and reaching maximum in the month of May. The normal annual mean maximum temperature is 32.80 C and normal annual mean minimum temperature is 19.10 C.

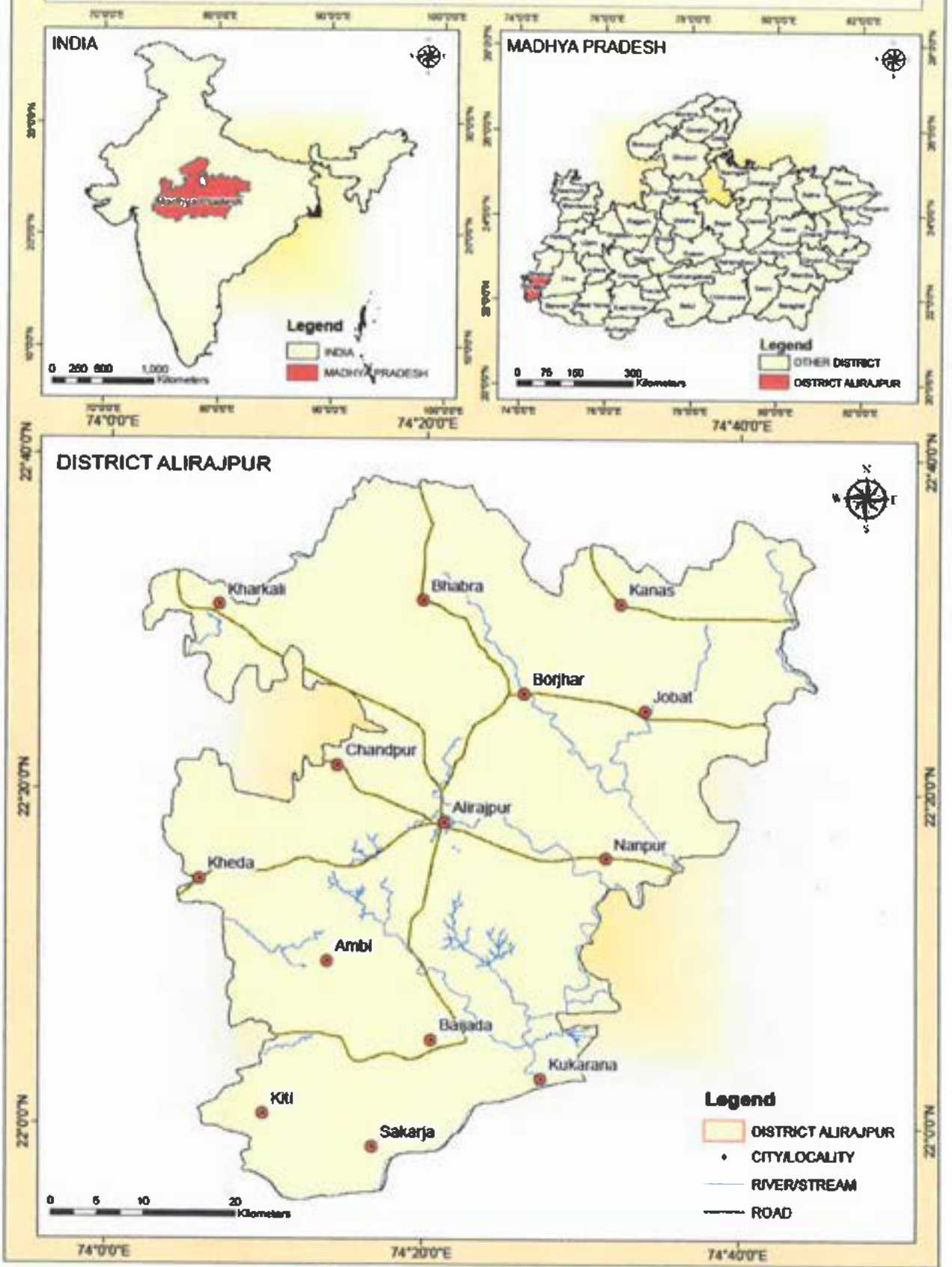

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LOCATION MAP OF DISTRICT ALIRAJPUR, MADHYA PRADESH



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CHAPTER – 2

OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The major minerals manganese and limestone are found in district Alirajpur among the minor minerals sand, dolomite, marble, vermiculite and basalt stone (Gitti) etc. There are 01 numbers of sanctioned mining lease for manganese which is located in jobat tahsil, 16 numbers of sanctioned Crusher based stone quarry lease, 22 numbers of sanctioned quarry lease for dolomite which is located mainly Alirajpur tahsil, 01 numbers of sanctioned quarry lease for marble which is located Jobat tahsil, 01 numbers of sanctioned quarry lease for vermiculite which is located Jobat tahsil and 49 numbers of sand quarry lease declared in the district, all of the mining and quarry lease covered the area 368.79 hectare of the district.

Table: Mining Activity

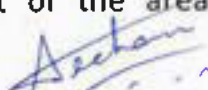
Mining Activity	Area (Ha)
Sand	210
Dolomite/Marble	101.06
Gitti	39.22
Vermiculite	2.65
Manganese	15.26
Total	368.79

Approach to Sand Mining:


River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost. River sand mining can damage private and public properties as well as aquatic habitats. Excessive removal of sand may significantly distort the natural equilibrium of a stream channel.

Mainly three types of minor minerals constituents such as sand, stone and Bajri are required for any type of construction apart from other material like cement and steel.


In earlier times, the houses/buildings were constructed in form of small dwellings with walls made up of mud plaster, stone and interlocking provided with wooden frames and there were negligible commercial as well as developmental activities resulting in less demand of building material. However with the passage of time, new vistas of developmental activities were started. The quantity of minor minerals consumption in a particular area is a thermometer to assess the development of the area. Thus with the pace of development activities, the


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consumption of minor minerals also increased. As such the demand of minor minerals in the district has started an increasing trend. In order to meet the requirement of raw material for construction, the extraction of sand is being carried out exclusively from the river beds. In Alirajpur district, the demand of sand is mainly met by the supply from Hatni, Sukar, Ankhai River and Local Nalas etc


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CHAPTER – 3

THE LIST OF MINING LEASE IN THE DISTRICT

(1) DECLARE SAND MINES

(According to official record prepared by Data Management Assitant)

Declare sand quarry leases of the district						
Sr.	Village or Name of Mine	Tahsil	Area (in ha.)	Coordinate	Captive or non-captive	Mining method (opencast or underground)
1	Kodli	Alirajpur	4.00	22°18'1.76"N 74°25'27.69"E	Non-captive	Opencast
2	Rajawat	Alirajpur	10.00	22°16'36.32"N 74°28'57.99"E	Non-captive	Opencast
3	Baddala	Alirajpur	10.00	22°13'17.39"N 74°18'0.47"E	Non-captive	Opencast
4	Baddala	Alirajpur	3.50	22°14'2.28"N 74°17'55.37"E	Non-captive	Opencast
5	Baddala	Alirajpur	3.75	22°16'13.79"N 74°16'10.11"E	Non-captive	Opencast
6	Morasa	Alirajpur	5.00	22°14'11.31"N 74°32'38.20"E	Non-captive	Opencast
7	Kharkuan	Alirajpur	7.00	22°16'34.25"N 74°29'7.70"E	Non-captive	Opencast
8	Ambari	Alirajpur	3.44	22°20'36.07"N 74°15'8.29"E	Non-captive	Opencast
9	Badi-Khattali	Jobat	5.50	22°20'54.68"N 74°31'14.43"E	Non-captive	Opencast
10	Baldamug	Jobat	1.70	22°23'29.91"N 74°28'50.55"E	Non-captive	Opencast
11	Davri	Sondwa	3.00	22°13'0.19"N 74°17'47.64"E	Non-captive	Opencast
12	Chhoti Vegalgaon	Sondwa	5.52	22°10'49.45"N 74°18'57.73"E	Non-captive	Opencast
13	Chhoti Vegalgaon	Sondwa	2.18	22°10'49.45"N 74°18'57.73"E	Non-captive	Opencast
14	Bhordiya	Sondwa	6.00	22°12'31.20"N 74°28'26.80"E	Non-captive	Opencast
15	Rawdi	Sondwa	10.00	22°8'19.84"N 74°30'12.22"E	Non-captive	Opencast
16	Sajanpur-1	kathhiwara	6.00	22°24'19.03"N 74°10'7.69"E	Non-captive	Opencast
17	Sajapur-2	kathhiwara	4.00	22°29'19.13"N 74°10'30.20"E	Non-captive	Opencast
18	Akola-1	kathhiwara	4.00	22°22'26.53"N 74°16'0.06"E	Non-captive	Opencast
19	Akola-2	kathhiwara	5.00	22°22'26.53"N 74°16'0.06"E	Non-captive	Opencast
20	Bijoriya-1	kathhiwara	5.00	22°22'43.81"N 74°15'23.14"E	Non-captive	Opencast
21	Bijoriya-2	kathhiwara	1.50	22°22'27.79"N 74°15'47.49"E	Non-captive	Opencast
22	Moriyagaon	kathhiwara	5.30	22°20'54.16"N 74°6'16.12"E	Non-captive	Opencast
23	Chandpur	kathhiwara	6.00	22°20'48.90"N 74°15'6.65"E	Non-captive	Opencast
24	Guda-1	kathhiwara	6.00	22°22'42.49"N 74°15'26.62"E	Non-captive	Opencast

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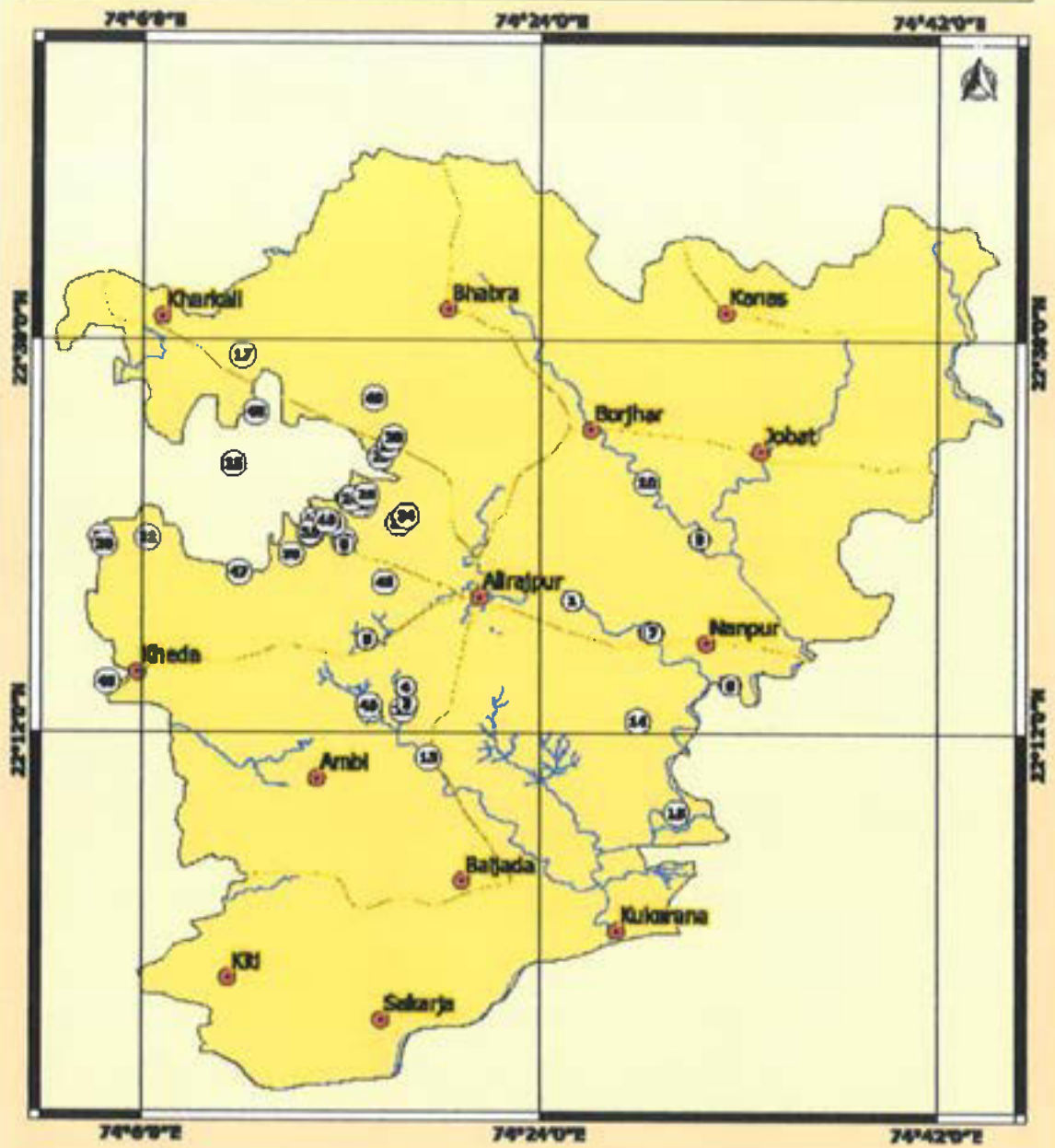
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25	Guda-2	kathhiwara	6.00	22°22'54.55"N 74°16'8.04"E	Non-captive	Opencast
26	Pratappura	kathhiwara	7.00	22°24'38.96"N 74°16'47.23"E	Non-captive	Opencast
27	Panala-1	kathhiwara	3.07	22°25'10.07"N 74°17'8.11"E	Non-captive	Opencast
28	Panala-2	kathhiwara	2.35	22°25'32.36"N 74°17'21.13"E	Non-captive	Opencast
29	Falyamau-1	kathhiwara	6.60	22°20'57.25"N 74°4'10.17"E	Non-captive	Opencast
30	Falyamau-2	kathhiwara	1.50	22°20'35.05"N 74°4'18.37"E	Non-captive	Opencast
31	Aagalgota-1	kathhiwara	5.00	22°21'45.55"N 74°13'45.51"E	Non-captive	Opencast
32	Aagalgota-2	kathhiwara	4.00	22°21'34.61"N 74°13'59.18"E	Non-captive	Opencast
33	Arthhi-1	kathhiwara	4.94	22°21'37.33"N 74°17'36.45"E	Non-captive	Opencast
34	Arthhi-2	kathhiwara	4.55	22°21'55.81"N 74°17'55.42"E	Non-captive	Opencast
35	Aagalgota-3	kathhiwara	7.230	22°21'9.93"N 74°13'35.16"E	Non-captive	Opencast
36	Aagalgota-4	kathhiwara	2.180	22°21'34.26"N 74°14'36.56"E	Non-captive	Opencast
37	Aagalgota-5	kathhiwara	1.990	74°14'36.56"E 74°15'10.97"E	Non-captive	Opencast
38	Kadvaliya	kathhiwara	1.160	22°20'8.41"N 74°12'44.79"E	Non-captive	Opencast
39	Chandpur-1	kathhiwara	3.00	22°21'34.20"N 74°14'37.78"E	Non-captive	Opencast
40	Chandpur-2	kathhiwara	2.860	22°21'42.02"N 74°14'20.35"E	Non-captive	Opencast
41	Chandpur-3	kathhiwara	2.940	22°21'34.76"N 74°14'36.88"E	Non-captive	Opencast
42	Chandpur-4	kathhiwara	4.00	22°21'5.15"N 74°13'35.69"E	Non-captive	Opencast
43	Akola	kathhiwara	1.640	22°18'50.60"N 74°16'58.97"E	Non-captive	Opencast
44	Mehani	kathhiwara	1.000	22°13'0.00"N 74°16'18.58"E	Non-captive	Opencast
45	Vakneri	kathhiwara	1.820	22°13'12.82"N 74°16'16.22"E	Non-captive	Opencast
46	Andharkach	kathhiwara	2.520	22°14'15.99"N 74°4'27.06"E	Non-captive	Opencast
47	Nichavas	kathhiwara	1.340	22°19'17.95"N 74°10'23.16"E	Non-captive	Opencast
48	Bholvat	kathhiwara	6.00	22°26'42.07"N 74°11'6.82"E	Non-captive	Opencast
49	Aamkhut	kathhiwara	2.00	22°27'20.34"N 74°16'28.48"E	Non-captive	Opencast

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LOCATION MAP OF SAND QUARRY



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- DISTRICT ALIRAJPUR
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Arslan


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CHAPTER - 4

DETAIL OF ROYALTY OR REVENUE RECEIVED IN THE LAST THREE YEAR

YEAR	REVENUE TARGET (IN LAKH)	REVENUE RECIVED (IN LAKH)	REVENUE RECIVED %
2019-20	800	376	47 %
2020-21	502	377	75 %
2021-22	454	487	107 %


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CHAPTER – 5

DETAIL OF PRODUCTION OF SAND IN THE LAST THREE YEAR

(According to E-khanij portal)

Year	Mineral	Production (In Cu.m.)
2019-20	Sand	-
	Gitti	153845.94
	Dolomite	7914.22
	Marble	-
2020-21	Sand	222090.00
	Gitti	98740.00
	Dolomite	19639.44
	Marble	2934.00
2021-22	Sand	-
	Gitti	172145.64
	Dolomite	10880.00
	Marble	3384.86



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PRODUCTION OF SAND (MINE-WISE & YEAR-WISE)							
Sr.	Village or Name of Mine	Tahsil	Area (in ha.)	Coordinate	Production 2019-20	Production 2020-21	Production 2021-22
1	Kodli	Alirajpur	4.00	22°18'1.76"N 74°25'27.69"E	0	25997.32	0
2	Rajawat	Alirajpur	10.00	22°16'36.32"N 74°28'57.99"E	0	0	0
3	Baddala	Alirajpur	10.00	22°13'17.39"N 74°18'0.47"E	0	0	0
4	Baddala	Alirajpur	3.50	22°14'2.28"N 74°17'55.37"E	0	0	0
5	Baddala	Alirajpur	3.75	22°16'13.79"N 74°16'10.11"E	0	16414.34	0
6	Morasa	Alirajpur	5.00	22°14'11.31"N 74°32'38.20"E	0	9998.90	0
7	Kharkuan	Alirajpur	7.00	22°16'34.25"N 74°29'7.70"E	0	0	0
8	Ambari	Alirajpur	3.44	22°20'36.07"N 74°15'8.29"E	0	10498.66	0
9	Badi-Khattali	Jobat	5.50	22°20'54.68"N 74°31'14.43"E	0	0	0
10	Baldamug	Jobat	1.70	22°23'29.91"N 74°28'50.55"E	0	8096.21	0
11	Davri	Sondwa	3.00	22°13'0.19"N 74°17'47.64"E	0	12299.80	0
12	Chhoti Vegalgaon	Sondwa	5.52	22°10'49.45"N 74°18'57.73"E	0	0	0
13	Chhoti Vegalgaon	Sondwa	2.18	22°10'49.45"N 74°18'57.73"E	0	0	0
14	Bhordiya	Sondwa	6.00	22°12'31.20"N 74°28'26.80"E	0	0	0
15	Rawdi	Sondwa	10.00	22°8'19.84"N 74°30'12.22"E	0	0	0
16	Sajanpur-1	kathhiwara	6.00	22°24'19.03"N 74°10'7.69"E	0	0	0
17	Sajapur-2	kathhiwara	4.00	22°29'19.13"N 74°10'30.20"E	0	0	0
18	Akola-1	kathhiwara	4.00	22°22'26.53"N 74°16'0.06"E	0	21999.26	0
19	Akola-2	kathhiwara	5.00	22°22'26.53"N 74°16'0.06"E	0	22999.03	0
20	Bijoriya-1	kathhiwara	5.00	22°22'43.81"N 74°15'23.14"E	0	0	0
21	Bijoriya-2	kathhiwara	1.50	22°22'27.79"N 74°15'47.49"E	0	0	0
22	Moriyagaon	kathhiwara	5.30	22°20'54.16"N 74°6'16.12"E	0	0	0
23	Chandpur	kathhiwara	6.00	22°20'48.90"N 74°15'6.65"E	0	0	0
24	Guda-1	kathhiwara	6.00	22°22'42.49"N 74°15'26.62"E	0	0	0
25	Guda-2	kathhiwara	6.00	22°22'54.55"N 74°16'8.04"E	0	0	0
26	Pratappura	kathhiwara	7.00	22°24'38.96"N 74°16'47.23"E	0	0	0
27	Panala-1	kathhiwara	3.07	22°25'10.07"N 74°17'8.11"E	0	0	0

28	Panala-2	kathhiwara	2.35	22°25'32.36"N 74°17'21.13"E	0	14293.19	0
29	Falyamau-1	kathhiwara	6.60	22°20'57.25"N 74°4'10.17"E	0	0	0
30	Falyamau-2	kathhiwara	1.50	22°20'35.05"N 74°4'18.37"E	0	0	0
31	Aagalgota-1	kathhiwara	5.00	22°21'45.55"N 74°13'45.51"E	0	0	0
32	Aagalgota-2	kathhiwara	4.00	22°21'34.61"N 74°13'59.18"E	0	0	0
33	Arthhi-1	kathhiwara	4.94	22°21'37.33"N 74°17'36.45"E	0	23308.70	0
34	Arthhi-2	kathhiwara	4.55	22°21'55.81"N 74°17'55.42"E	0	0	0
35	Aagalgota-3	kathhiwara	7.230	22°21'9.93"N 74°13'35.16"E	0	0	0
36	Aagalgota-4	kathhiwara	2.180	22°21'34.26"N 74°14'36.56"E	0	7497.67	0
37	Aagalgota-5	kathhiwara	1.990	74°14'36.56"E 74°15'10.97"E	0	0	0
38	Kadvaliya	kathhiwara	1.160	22°20'8.41"N 74°12'44.79"E	0	0	0
39	Chandpur-1	kathhiwara	3.00	22°21'34.20"N 74°14'37.78"E	0	11702.00	0
40	Chandpur-2	kathhiwara	2.860	22°21'42.02"N 74°14'20.35"E	0	7998.96	0
41	Chandpur-3	kathhiwara	2.940	22°21'34.76"N 74°14'36.88"E	0	0	0
42	Chandpur-4	kathhiwara	4.00	22°21'5.15"N 74°13'35.69"E	0	0	0
43	Akola	kathhiwara	1.640	22°18'50.60"N 74°16'58.97"E	0	4999.10	0
44	Mehani	kathhiwara	1.000	22°13'0.00"N 74°16'18.58"E	0	4000.00	0
45	Vakneri	kathhiwara	1.820	22°13'12.82"N 74°16'16.22"E	0	4999.26	0
46	Andharkach	kathhiwara	2.520	22°14'15.99"N 74°4'27.06"E	0	5997.96	0
47	Nichavas	kathhiwara	1.340	22°19'17.95"N 74°10'23.16"E	0	2999.62	0
48	Bholvat	kathhiwara	6.00	22°26'42.07"N 74°11'6.82"E	0	0	0
49	Aamkhut	kathhiwara	2.00	22°27'20.34"N 74°16'28.48"E	0	5990.93	0


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CHAPTER - 6

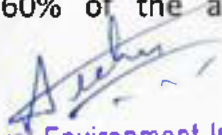
REPLENISHMENT REPORT / THE PROCESS OF DEPOSITION OF THE SEDIMENT

GENERAL

Sediment refers to the conglomerate of materials, organic and inorganic, that can be carried away by water, wind or ice. While the term is often used to indicate soil-based, mineral matter (e.g. clay, silt and sand), decomposing organic substances and inorganic biogenic material are also considered sediment. Most mineral sediment comes from erosion and weathering, while organic sediment is typically detritus and decomposing material such as algae. Sediment particles come in different sizes and can be inorganic or organic in origin. These particulates are typically small, with clay defined as particles less than 0.00195 mm in diameter, and coarse sand reaching up only to 1.5 mm in diameter. However, during a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream. Sediment is a naturally occurring element in many bodies of water, though it can be influenced by anthropogenic factors.

In an aquatic environment, sediment can either be suspended (floating in the water column) or bedded (settled on the bottom of a body of water). In other words, waterflow tries to scour its surface whenever it flows in the channel. Silt or gravels even larger boulders are detached from its bed or banks. The moving water sweeps these detached particles in downstream along its flow. Silting and scouring is not very uncommon and must be avoided by proper designs. It reduces supply level of water. The channel section gets reduced by silt and reduces discharging capacity. Sediments seriously threaten various projects due to silt carried out by rivers up to point of interceptions. Sediment is also threatening denudation of forests. Sediment is a major obstruction on the flow line. It shortens longevity of channel. It causes soil erosion. Therefore data base must be needed for policy making and planning.

The mineral potential is calculated based on field investigation and geology of the catchment area of the river/ streams. As per the policy of the State and location, depth of minable mineral is defined. The area for removal of mineral in a river or stream can be decided depending on geomorphology and other factors, it can be 50% to 60% of the area of a particular river/stream, e.g. in river mineral


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constituents like sand up to a depth of three meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river/ stream.

The specific gravity of each mineral constituent is different. The percent of mineral constituent like boulder, river Bajri, and sand also varies for different river and streams. While calculating the mineral potential, the percentage of each mineral constituent is taken as 25-30% for sand and 5- 10% for silt and clay.

The quantum of deposition varies from stream to stream depending upon factors like catchment lithology, discharge, river profile and geomorphology of the river course. There are certain geomorphological features developed in the river beds such as channel bar, point bar etc where annual deposition is more even two to three meters.

THE PROCESS OF DEPOSITION

There are three main types of processes that occur in a river. These are erosion, transportation and deposition. All three depend on the amount of energy there is in a river.

A. Types of erosion :

The energy in a river causes erosion. The bed and banks can be eroded making it wider, deeper and longer. Headward erosion makes a river longer. This erosion happens near its source, Surface run-off and through flow causes erosion at the point where the water enters the valley head. Vertical erosion makes a river channel deeper. This happens more in the upper stages of a river (the V of vertical erosion should help you remember the v-shaped valleys that are created in the upper stages). Lateral erosion makes a river wider. This occurs mostly in the middle and lower stages of a river. There are four main processes of erosion that occur in rivers. These are: 1. Hydraulic Action; 2. Abrasion / Corrosion; 3. Attrition; and 4. Corrosion.

(i) Hydraulic action: The pressure of water breaks away rock particles from the river bed and banks. The force of the water hits river banks, and then pushes water into cracks. Air becomes compressed; pressure increases and the riverbank may, in time collapse. Where velocity is high e.g. the outer bend of meander, hydraulic action can remove material from the banks which may lead to undercutting and river bank collapse. Near waterfalls and rapids, the force

may be strong enough to work on lines of weakness in joints and bedding planes until they are eroded.

(ii) Abrasion / Corrosion: The sediment carried by a river scours the bed and banks. Where depressions exist in the channel floor the river can cause pebbles to spin around and turn hollows into potholes.

(iii) Attrition: Eroded rocks collide and break into smaller fragments. The edges of these rocks become smoother and more rounded. Attrition makes the particles of rock smaller. It does not erode the bed and bank. Pieces of river sediment become smaller and more rounded as they move downstream.

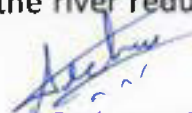
(iv) Corrosion / Solution: Carbon dioxide dissolves in the river to form a weak acid. This dissolves rock by chemical processes. This process is common where carbonate rocks such as limestone and chalk are evident in a channel.

B. Transportation:

Transportation of material in a river begins when friction is overcome. Material that has been loosened by erosion may be then transported along the river. There are four main processes of transportation. These are: 1. suspension / suspended load; 2. solution / solution load; 3. saltation; and 4. traction. Suspension is when material made up of very fine particles such as clay and silt is lifted as the result of turbulence and transported by the river. Faster-flowing, turbulent rivers carry more suspended material. This is why river appear muddy as they are approaching bank full discharge and towards the mouth of the river (where velocity is greater as is the occurrence of finer sediment). Solution is when dissolved material is carried by a river. This often happens in areas where the geology is limestone and is dissolved by slightly acidic water. Saltation is when material such as pebbles and gravel that is too heavy to be carried in suspension is bounced along the river by the force of the water. Traction is when large materials such as boulders are rolled and pushed along the river bed by the force of the river. The transportation in a river is in the form of traction, saltation and suspension. The capacity of a river is the total load a river can transport at a given point.

C. Deposition:

Deposition is the process of eroded material being dropped. This happens when a river loses energy. A river can lose its energy when rainfall reduces, evaporation increases, friction close to river banks and shallow areas which leads to the speed of the river reducing and therefore the energy reduces, when a river has


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to slow down it reduces its speed (and ability to transport material) and when a river meets the sea.

Process of Deposition:-


Sediment is a naturally occurring material that is broken down by processes of weathering and erosion, and is subsequently transported by the action of wind, water and/or by the force of gravity acting on the particles. Sediments are most often transported by water. Sediment is transported based on the strength of the flow that carries it and its own size, volume, density, and shape. Stronger flows will increase the lift and drag on the particle, causing it to rise, while larger or denser particles will be more likely to fall through the flow.

Deposition is the processes where material being transported by a river is deposited. Deposition occurs when a river loses energy. This can be when a river enters a shallow area (this could be when it floods and comes into contact with the flood plain) or towards its mouth where it meets another body of water.

Deposition is the geological process in which sediments, soil and rocks are added to a landform or land mass. Wind, ice, and water, as well as sediment flowing via gravity, transport previously eroded sediment, which, at the loss of enough kinetic energy in the fluid, is deposited, building up layers of sediment.

Rivers flood on a regular basis. The area over which they flood is known as the floodplain and this often coincides with regions where meanders form. Meanders support the formation of flood plains through lateral erosion.

When river floods the velocity of water slows. As the result of this the river's capacity to transport material is reduced and deposition occurs. This deposition leaves a layer of sediment across the whole floodplain. After a series of floods, layers of sediment form along the floodplain.


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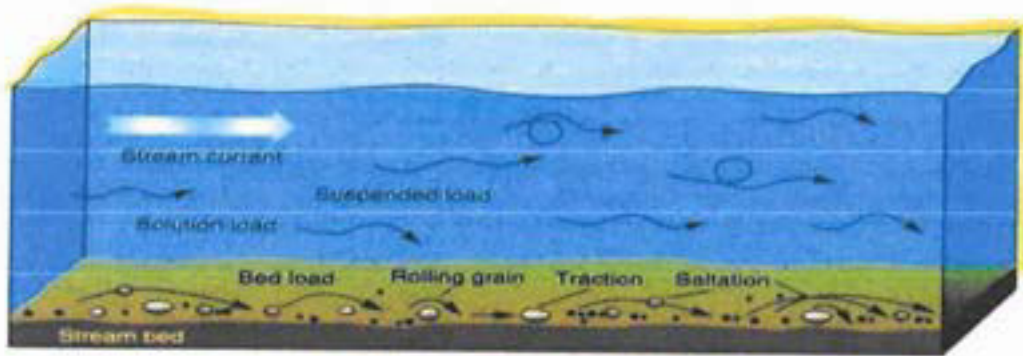
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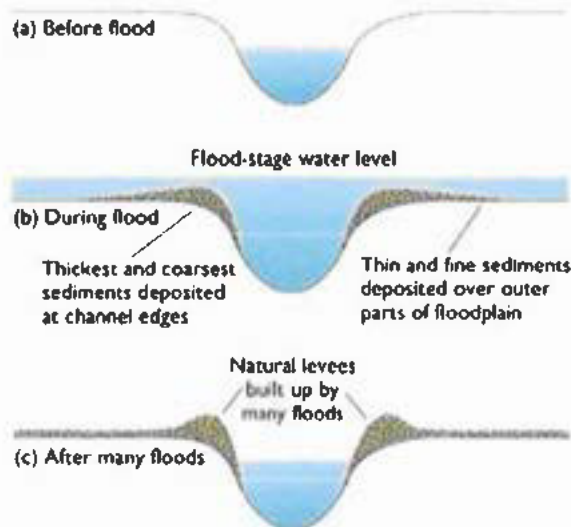
Modes of Sediment Transport

The sediment load of a river is transported in various ways although these distinctions are to some extent arbitrary and not always very practical in the sense that not all of the components can be separated in practice:

- ✓ Dissolved load
- ✓ Suspended load
- ✓ Intermittent suspension (saltation) load
- ✓ Wash load
- ✓ Bed load



Formation of Natural Levees



The sand deposits being an integral part of the dynamic river system to which it belongs. Therefore, as a part of natural cycle, the monsoon flow of every river carries with it replenishment of silt and washed out soil and clay from upstream areas in the catchment. This silt shall be removed during the sieving of sand before

it is loaded into truck/tipper/trailer to carry to the consumers.

Sand mining is critical to infrastructure development around the globe. Sand is an essential minor mineral used extensively across the country as a useful construction constituent and variety of other uses in sports, agriculture, glass making (a form of sand with high silica content) etc. The rivers are the most important source of Sand. It acts as source of transportation and deposition of sand etc.

Annual Replenishment of Mineral in River Bed Area/ Sedimentation

The deposition in a river bed is more pronounced during rainy season although the quantum of deposition varies from stream to stream depending upon numbers of factors such as catchment, lithology, discharge, river profile and geomorphology of the river course where annual deposition is one meters, but it is noticed that during flood season whole of the pit so excavated is completely filled up and as such the excavated area is replenished with new harvest of minerals.

In order to calculate the mineral deposits in the stream beds, the mineral constituents have been categorized as clay, silt, sand, Bajri and boulder. However, during present calculation, the waste material i.e. silt which varies from 10 to 20% in different streams has also been included in the total production. Further, the Survey of India Topo-Sheets has been used as base map to know the extent of river course. The mineral reserves have been calculated only upto meter depth although there are some portions in the river beds such as channel bars, point bars and central islands where the annual deposition is raising the level of river bed thus causing shifting of the rivers towards banks resulting in to cutting of banks and at such locations, removal of this material upto the bed level is essential to control the river flow in its central part to check the bank cutting. While calculating the mineral potentials, the mineral deposits lying in the sub-tributaries of that particular stream/river has not been taken into consideration. Since these mineral deposits are adding annually.

Sedimentation is generally considered by geologists in terms of the textures, structures, and fossil content of the deposits lay down in different geographic and geomorphic environments. The factors which affects the "Computation of Sediment":

Geomorphology & Drainage Pattern: The following geomorphic units plays important role:

- Structural Plain
- Structural Hill
- Structural Ridge
- Denudation Ridge & Valley


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- Plain & Plateau
- Highly Dissected pediment
- Undissected pediment

Distribution of Basin Area River wise

Drainage System/Pattern of the area, Rainfall & Climate: Year wise Rainfall data

Replenishment Study (As per EMGSM guidelines, 2020)


Replenishment study for a river solely depends on estimation of sediment load for any river system and the estimation is a time consuming and should be done over a period. The process in general is very slow and hardly measurable on season to season basis except otherwise the effect of flood is induced which is again a cyclic phenomenon. Usually, replenishment or sediment deposition quantities can be estimated in the following ways as given below:

- Direct measurement of the sand bar upliftment, monitoring of the new sand bars created in the monsoon within the channel, elimination of sand bars during the monsoon etc. With systematic data acquisition, over a period, regression equations can be developed for modeling of the sediment yield and annual replenishment with variable components. In this report, for volume estimation of sand, —Depth x Area has been followed. The sand bars are interpreted with the help of satellite imageries. Ground truthing done for 100% of the total identified sand bars. While ground truthing, width and length of each segment were physically measured. It has also been observed that in few cases, sand bars have attained more than 3 meters height from the average top level of the river beds. Considerations of sand resources have been restricted within 3 meters from the average top surface of the river bed. Thus, in few occasions, heights for sand reserve estimation are found to be more than 3 meters.
- The replenishment estimation based on a theoretical empirical formula with the estimation of bed-load transport comprising of analytical models to calculate the replenishment estimation.

Replenishment estimation

Sedimentation in any river is dependent on sediment yield and sediment yield depends on soil erosion in river's catchment area. Catchment yield is computed using Strange's Monsoon runoff tables for runoff coefficient against rainfall return period. Peak flood discharge calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using


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Ackers and White Equation.

Methodology Adopted: To delineate replenishment percentage in the river bed of the district, below mentioned steps have been followed.

• **Field data collation:**

Field data collations were done during June-2021, November-2021, June-2022 for starting period, pre monsoon period, post monsoon period & end period for the river ghats on continuous basis. However, the nonoperational areas were covered through traverses. In both the cases, relative elevation levels were captured through DGPS/ Electronic Total Station. Thickness of the sand bars was measured through sectional profiles. In few instances, sieve analysis of the sands was carried out to derive the size frequency analysis.

• **Selection of Study profiles:**

Study profiles are selected based on the occurrence of the sand bars in the channel profiles. Aerial extents of each of the profiles are mapped from satellite imageries. Frequency distribution did while selection of the ground truthing of the blocks.

o **Data Compilation:**

Following data were compiled for generation of this annual replenishment report:


- o Elevation levels of the different sand Ghats and Sand Bar's as measured at site.
- o Extents of the sand bars are measured from the pre monsoon satellite imageries.
- o Sand production data of the district.

o **Assessment of sediment load in the river:**

Assessment of sediment load in a river is subjective to study of the whole catchment area, weathering index of the various rock types which acts as a source of sediments in the specific river bed, rainfall data over a period not less than 20 years, and finally the detail monitoring of the river bed upliftment with time axis. Again, the sediment load estimation is not a dependent variable of the imaginary district boundary, but it largely depends upon the aerial extents of the catchment areas, which crossed the district and state boundaries.

o **Estimation of annual sand deposition:**

The major sand producing river of the Alirajpur district is Budner & Narmada. Planning has been done for systematic sand mining in the rivers.


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As discussed in the previous sections, sand production in the district has been planned from mostly Sukkad, Orsang, Hathni, Urpur, Ankhad rivers & Nalas. A total of 49 sand mines have been planned for production, in the upcoming action 800061 cubic meters sand is proposed to be produced from these 49 mines.

While calculation of the areas of sand bar, a classification system has been adopted with three categories of land identified within the channel areas. the class which followed for classification are as follows:

- a. The untapped Sand Bars.
- b. The Sand bars worked in the pre-monsoon period.
- c. Main channel course within the channel.

Most of the rivers/streams flowing in the district are originated within the district and produced ordinary sand, because almost 70 percent the part of Alriajpur district is comprised of Granite, Gneiss, Conglomerate, Quartz vein etc which is Archean to Late Cretaceous age group of rock and rest about 30 percent part of the district is covered by the Deccan trap. However, the rivers of the district and deccan trap basalt.

Details of sand replenishment in each sand mine in district with their sand resources in pre monsoon and post monsoon period are provided in below table:


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REPLENISHMENT STUDY

Name of District	Normal date of onset of monsoon	Normal date of offset of monsoon	Name of river	Name of Mine	Length of sand mine (in meter)	Width of sand mine (in meter)	Average depth of sand mine (in meter)	Pre-monsoon quantity of sediment load (in cum.)			Post-monsoon quantity of sediment load (in cum.)	Approx quantity of production per annum (in cum.)	Approx quantity of production per annum (in MT)	Quantity of sand mineral produced per annum since last three years (in cum.)	
								Length of sediment deposition	Width of sediment deposition	Depth of sediment deposition					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AURAJPUR	30 June	01 October	Sukkad	Kodli	460	86	2	460	71	0.8	26128	65320	39192	54868.8	25997.32
			Sukkad	Rajawat	1250	80	0.8	1250	65	0.32	26000	65000	39000	54600	0
			Ankhad	Baddala	1180	84	1.2	1180	69	0.48	39081	97704	58622	82070.8	0
			Nala	Baddala	580	60	1	580	45	0.4	10440	26100	15660	21924	0
			Ankhad	Baddala	1160	32	1.5	1160	17	0.6	11832	29580	17748	24847.2	16414.34
			Sukkad	Morasa	1180	42	0	*	*	*	*	*	*	*	9998.90
			Sukkad	Kharkuan	1200	58	1.2	1200	43	0.48	24768	61920	37152	52012.8	0
			Nala	Ambari	496	69	1	496	18	0.4	3571	8928	5356	7498.4	10498.66
			Hathni	Badi-Khattali	1280	42	0.7	1280	27	0.28	9676	24192	14515	20321	0
			Hathni	Baldamug	850	20	1	850	10	0.4	3400	8500	5100	7140	8096.21
			Nala	Davri	480	62	1.5	480	47	0.6	13536	33840	20304	28425.6	12299.80
			Ankhad	Chhoti Vegalgaon	800	69	0	800	18	0.2	2880	7200	4320	6048	0
			Ankhad	Chhoti Vegalgaon	380	57	0	380	20	0.2	1520	3800	2280	3192	0
			Hathni	Bhordiya	908	66	0	908	24	0.2	4358	10896	6537	9151.8	0
			Hathni	Rawdi	828	120	0	828	28	0.2	4636	11592	6955	9737	0
			Orsang	Sajanpur-1	350	171	1	350	156	0.68	37128	92820	55692	77968.8	0
			Orsang	Sajanpur-2	220	181	1	220	166	0.68	24833	62084	37250	52150	0
			Nala	Akola-1	1180	33	1	1180	25	0.4	11800	29500	17700	24780	21999.26
			Nala	Akola-2	780	64	1	780	49	0.4	15288	38220	22932	32104.8	22999.03
			Nala	Bijonya-1	1560	32	1.2	1560	17	0.48	12729	31824	19094	26731.6	0
			Nala	Bijonya-2	1020	14	1.5	1020	4	0.6	2448	6120	3672	5140.8	0
			Nala	Moriyagaon	1200	44	1	1200	29	0.4	13920	34800	20880	29232	0
			Nala	Chandpur	1180	50	1.5	1180	35	0.6	24780	61950	37170	52038	0
			Nala	Guda-1	920	65	1	920	50	0.4	18400	46000	27600	38640	38640

* In the sand mine at Sr. No. 6 in above table, due to non deposition of sand proposed to delist the mine from list of declare sand mines in the district.

Nala	Guda-2	1480	40	1	1480	25	0.4	14800	37000	22200	31080	0
Urpur	Pratappura	1720	40	1	1720	25	0.4	17200	43000	25800	36120	0
Urpur	Panala-1	600	51	1	600	36	0.4	8640	21600	12960	18144	0
Nala	Panala-2	468	50	1	468	35	0.4	6552	16380	9828	13759.2	14293.19
Nala	Falyamau-1	1550	42	1	1550	27	0.4	16740	41850	25110	35154	0
Nala	Falyamau-2	518	28	2	518	13	0.8	5387	13468	8080	11312	0
Nala	Aagalgota-1	580	86	0.9	580	60	0.36	12528	31320	18792	26308.8	0
Nala	Aagalgota-2	500	80	0.5	500	58	0.2	5800	14500	8700	12180	0
Nala	Arthhi-1	1340	36	1.5	1340	21	0.6	16884	42210	25326	35456.4	23308.70
Nala	Arthhi-2	1260	36	0.9	1260	21	0.36	9525	23814	14288	20003.2	0
Nala	Aagalgota-3	1040	69	0.5	1040	28	0.2	5824	14560	8736	12230.4	0
Nala	Aagalgota-4	620	35	1	620	20	0.4	4960	12400	7440	10416	7497.67
Nala	Aagalgota-5	520	38	1.5	520	23	0.6	7176	17940	10764	15069.6	0
Nala	Kadvaliya	600	19	0	600	5	0.2	600	1500	900	1260	0
Nala	Chandpur-1	380	78	1	380	18	0.4	2736	6840	4104	5745.6	11702.00
Nala	Chandpur-2	760	37	0.5	760	22	0.2	3344	8360	5016	7022.4	7998.96
Nala	Chandpur-3	960	30	1	960	15	0.4	5760	14400	8640	12096	0
Nala	Chandpur-4	720	55	1	720	40	0.4	11520	28800	17280	24192	0
Nala	Akola	660	24	1	660	5	0.4	1320	3300	1980	2772	4999.10
Nala	Mehani	660	15	1	660	10	0.4	2640	6600	3960	5544	4000.00
Nala	Vakneri	1000	18	1	1000	10	0.4	4000	10000	6000	8400	4999.26
Nala	Andharkach	1320	19	1.5	1320	10	0.6	7920	19800	11880	16632	5997.96
Nala	Nichavas	680	19	0.9	680	10	0.36	2448	6120	3672	5140.8	2999.62
Nala	Bholvat	1040	57	0.9	1040	26	0.36	9734	24336	14601	20441.4	0
Nala	Aamkhat	368	54	1	368	42	0.4	6182	15456	9273	12982.2	5990.93


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NOTE:- In relation to the sand mines of the district, according to the official records, the information is being presented by the Mining Inspector Alirajpur on the basis of the Replenishment study submitted by the sand mine wise of the district.

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CHAPTER - 7
GENERAL PROFILE OF THE DISTRICT

Sr.No.	Subject	Information or Stastics
1	District	Alirajpur
2	Headquarter	Alirajpur
3	Division	Indore
4	Sub-devision	Alirajpur, Jobat, Chandrashekhar Ajad Nagar, Sondawa
5	Tahsil	Alirajpur, Jobat, Chandrashekhar Ajad Nagar, Sondawa, Katthhiwara
6	Janpad Panchayat	Alirajpur, Jobat, Chandrashekhar Ajad Nagar, Sondawa, Katthhiwara, Uadaigarh
7	Nagar Palika	Alirajpur
8	Nagar Panchayat	Jobat, Chandrashekhar Ajad Nagar
9	Geographical area	3826.57 Km ² (as per DLR)
10	Forest area	970.20 Km ² (as per DFO)
11	Gram Panchayat	288
12	Gram	552
13	Average Rainfall	879.7 mm
14	Rivers	Hathni, Ankhai, Narmada, Sukar etc.
15	Average temperature	Mean maximum 32.80 ^o c Mean minimum 19.10 ^o c
16	Poputation	Total - 7,28,677 Scheduled Tribe - 6,48,638 Schedule Caste - 26,877 Rural Percentage - 92.2 % Urban Percentage - 7.8 %


The District is named after its head quarter Alirajpur which was capital of the former princely state of Alirajpur. The territory is hilly and many of the inhabitants are Bhil's. Being tribal dominated community Alirajpur area was being ruled by tribal kings in 15th century. Amanod Dev the descendent of Rana Rathore Naresh of Jodhpur killed Jamora Dodiya Bhil and his army and took the area in his possession.

The area is bounded by the pond in Dahod in north, Shivrajpur in Gujarat in west, Narmada River in south and Dholgarh in east. Anand Dev was very fond of hunting. One day Anand Dev entered in the forest of Ali which was ruled by Alia Bhil at that time. The king saw a rabbit there which came running

towards and disappeared. The king felt that it should be a magical place as well as pleasant also. The king built a fort there in 1438 and the fort was named Anandawali. Alia Bhil was killed in the battle and Anand Dev became the sole king of the state. After this Anand Dev shifted his capital motipol to Ali and was named Anandawali. King Anand Dev gave Fulmal village to his younger brother, Inderdev in 1440 and declared him the Prime Minister. After this he distributed the territory among his brother. After king Anand Dev his son Chalchal Dev became the king of the territory. Guogole Dev and Keshav Dev were his two sons. On the murder of his father Guogole Dev became the king in 1470. On the other hand his younger brother Keshav Dev captured Jobat area while his father was surviving in 1465. Krishan Dev the son of Guogole Dev died childless and his nephew Bachharaj became the king. He had four sons. Deepsen was his eldest son.

Surat Dev was son of Deepsen and extended the Ali state on the large scale .He had four sons. After the death of Surat Dev his eldest son, Pahar Singh became the king. Due to circumstances created, his brother Pratap Dev did not like to live with Surat Dev and hide himself near Maheshwar. When Ahilyuabai holkar found it that Prata Dev was brother of the king of Ali, she send him back. After returning to Ali, Pratap Dev planned and captured the territory and declared himself the king of Ali in 1765. King Pratap Dev was married to Shishodiya princess of Dharampuri of Gujarat.

During 1797 Mushafir Makrani real name Dur Mohammed khan came to Ali territory with his friends. He became a servant of state. Mushafir makrani proved a loyal servant of the state lifelong. He protected the state so many times from outsiders. In 1800 the capital of Ali was transfered to Rajpur. After the death of Maharaj Pratap Dev, Maharani Pratap Kuwarbai gave birth to a boy, named Jasvant Singh. Jasvant Singh ruled the territory up to 1861. After his C District Survey Report, Alirajpur, Madhya Pradesh 35 death his son Gang Dev became the king and ruled from 1861 to 1871 in Alirajpur State. After his death his brother Roopdev ruled the state from 1871 to 1881. Roopdev had no issue. Therefore Vijay Singh son of Chandra Singh from Sondwa Thakur failmy was brought to Alirajpur and nominated as the King. He ruled Alirajpur state in 1890 and he also had no issue. Again Pratap Singh second son of Bhagwan Singh was brought from Sondwa and he became king of Alirajpur. Pratap Singh II was born on 12 Sept 1881 and he was made king on 10 June 1891. After he


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turned adult a first class magistrate power was given to him and the complete power was delegated to him to rule on 27 January 1904. Maharaj Pratap Singh married queen Rajkuwarbai daughter of Bahadur Singh Jadav. Prince Fateh Singh was born in 1961 from the eldest queen Maharaja Pratap Fateh Singh and was educated in Daly College Indore and Raj Kumar College Rajkot. Prince Fateh Singh was married to the princess Rajetukuwarbai on 7th May, 1922. Prince Fateh Singh had six children.

Out of these three were princes and three princesses. Maharaja Pratap Singh had built big and beautiful grounds presently used as collectorate office, guest houses, Pratap Bhawan Hospital and schools. King Pratap Singh had very good terms with the British Govt. He was honored by K.C.I. rank for his bravery on 3rd June, 1915. After this on 1st January, 1921 the British Govt. honored him with the title of his Highness forever.

The population of Alirajpur at that time was about five thousand. The roads were very broad and the houses were very airy and beautiful. His Highness Shri Pratap Singh was very fearless and kind hearted king. He punished the dacoits with hard punishment. The population of Alirajpur territory was about 12 thousand out of these 569 were Christian religion follower. Most of the Christians were converted from Bhil caste. According to British rules a state forces was formed on 1st February, 1924 that was called Pratap infantry. There were Gorkhe and Army Band. Many play ground were developed during ruling period of his Highness Maharaj Shri Pratap Singh. A big cricket field (At present Fateh Club Maidan) and Polo ground was famous in the country. Thus Maharaja Pratap Singh II ruled Alirajpur successfully up to 1948 (up to freedom) for 57 years. After his death his grandson Surendra Singh son of Maharaj Fateh Singh was made the king. After this Alirajpur State was merged into Indian Union but his Highness Sri Surendra Singhji was always know as the name of Bapji.

Maharaj Surendra Singh ji was a highly educated personality and he passed I.C.S. Examination. He rendered his services as an Indian embassy under Indian Foreign Services. He had family relation with the former Prime Minister Jawahar Lal Nehru and Smt. Indra District Survey Report, Alirajpur, Madhya Pradesh 36 Gandhi. After retirement Maharaj Surendra Singh engaged himself in the social services actively. After the freedom in 1947, Alirajpur


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territory was absorbed into Indian Union. After that this area became a part of Madhya Bharat Administrate.


After constitution of Madhya Pradesh on 1st November, 1956 Alirajpur came into Jhabua district. Although demand of a separate district for Alirajpur was raised but Jhabua was in between petlawad and Thandla Tahsils on one side and between Jobat and Alirajpur on the other side. Therefore Jhabua was declared as districts headquarter. Since then Alirajpur was division headquarter having three big black development offices Alirajpur, Sondwa and Kattiwara respectively. Out of these Sondwa and Kattiwara Tappa were tahil headquarter. Simultaneously a demand of separate district for Alirajpur was being raised regularly. The villages Vakhatgarh, Mathwar Kakrana etc. were connected with Narmada river in the interior. Public representative, public and political parties were also demanding of separate district for Alirajpur time to time. During Assembly elections 2003, Uma Bharti promised to make Alirajpur as a separate district. Since then the demand of district for Alirajpur was raised strongly. Due to the pressure of regional public, organizations and Chief Minister Shri Shivraj Singh Chauhan delcared Alirajpur a separate district on 17th May, 2008 and thus a new administrative unit, Alirajpur was formed.

6.1 Population of Alirajpur

According to the 2011 census Alirajpur district has a population of 7,28,677 roughly equal to the nation of Bhutan or the US state of Alaska. This gives it a ranking of 498th in India (out of a total of 640). The district has a population density of 229 inhabitants per square kilometre (590/sq mi). Its population growth rate over the decade 2001–2011 was 19.4 per cent. Alirajpur has a sex ratio of 1,009 females for every 1,000 males, and a literacy rate of 37.22 percent, the lowest in India. Details of demography are given in table.

Table: Demography of Alirajpur

Description	2011	2001
Actual Population	728,999	610,275
Male	362,542	305,912
Female	366,457	304,363
Population Growth	19.45%	26.20%
Area Sq. Km	3,182	3,182
Density/km ²	229	192
Proportion to Madhya Pradesh Population	1.00%	1.01%


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Sex Ratio (Per 1000)	1011	995
Child Sex Ratio (0-6 Age)	978	982
Average Literacy	36.1	31.1
Male Literacy	42.02	40.18
Female Literacy	30.29	22.01
Total Child Population (0-6 Age)	147,961	141,670
Male Population (0-6 Age)	74,818	71,468
Female Population (0-6 Age)	73,143	70,202
Literates	209,754	145,743
Male Literates	120,905	94,207
Female Literates	88,849	51,536
Child Proportion (0-6 Age)	20.30%	23.21%
Boys Proportion (0-6 Age)	20.64%	23.36%
Girls Proportion (0-6 Age)	19.96%	23.07%

6.2 Education

Average literacy rate of Alirajpur in 2011 were 36.10 compared to 31.10 of 2001. Alirajpur district has the lowest number of literate persons (2,17,624) with 1,26,261 males and 91,363 females. If things are looked out at gender wise, male and female literacy were 42.02 and 30.29 respectively. Alirajpur district has the lowest male literacy rate (43.6%) as well as the lowest female literacy rate (31.0%). It also has the lowest total literacy rate in the country (37.2%). For 2001 census, same figures stood at 40.18 and 22.01 in Alirajpur District. Total literate in Alirajpur District were 209,754 of which male and female were 120,905 and 88,849 respectively. In 2001, Alirajpur District had 1,45,743 in its district.

6.3 Major Cities

6.3.1 Alirajpur

Alirajpur is a city and a municipality in Alirajpur district in the state of Madhya Pradesh, India. Alirajpur State was formerly a princely state of India, under the Bhopawar Agency in Central India. It lay in the Malwa region of Madhya Pradesh, near the border with Gujarat and Maharashtra. It had an area of 836 m². The country is hilly, and consists of tribal people as majority of population who live in small villages near Alirajpur. However, the town's population mainly consists of general people. It had been from time to time under British administration. The Victoria Bridge at Alirajpur was built to commemorate the Diamond Jubilee of 1897. Area-wise, the former Alirajpur taluka was larger than the Jhabua taluka of Jhabua district. Now Alirajpur is a

District. The Rajwara fort is situated in the centre of the town attached with a beautiful playground known as Fateh Club. Alirajpur is also the hub for dolomite business. As of 2001 India census, Alirajpur had a population of 25,161. Males constitute 52% of the population and females 48%. 15% of the population is under 6 years of age. Alirajpur is a city in which public depend on farm. Alirajpur topography is predominantly hilly. Its economy depends primarily on agricultural endeavours, especially farming, especially mangoes. The agricultural trading yard in Alirajpur is the biggest in all the state when it comes to mango trading.

6.3.2 Jobat

Jobat is a city and a nagar parishad municipality in Alirajpur district in the Indian state of Madhya Pradesh. Jobat is located at 22.42°N 74.57°E. It has an average elevation of 292 metres (958 feet). Jobat is located on the banks of Dohi River. Jobat is about 184 km away from Indore (arguably most developed city in entire Madhya Pradesh). Jobat is located in Western Madhya Pradesh, very near to border of the state of Gujarat. As of 2001 India census Jobat had a population of 9991. Males constitute 52% of the population and females 48%. Jobat has an average literacy rate of 72%, higher than the national average of 59.5%: male literacy is 79%, and female literacy is 64%. In Jobat, 16% of the population is under 6 years of age. Now the population increase and reach at 21000.

6.4 Town and Villages Alirajpur District of Madhya Pradesh is sparsely populated and most of the population of the region is a tribal population. But the district has importance in terms of tourist spots. Certain regions in Alirajpur District of Madhya Pradesh have added to the value of the district. The Tourist spots of Alirajpur have religious, historical and natural importance as well. Some of the prominent tourist destinations of Alirajpur are Bhabhara, Lakhmani Gram, Malwai and Amkhut. The Laxmaniji Teerth is a famous jain temple in Alirajpur. The temple worth seeing is the Shri Laksamani Teerth located some 8 kilometers from the main headquarter town. This 2000 year old temple's main deity is Shri Padmaprabh Bhagvan, in a white stone idol in the padmasana posture. The nearest railway station in Alirajpur is the Dahod Railway station in Gujarat.

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6.4.1 Chandra Shekhar Ajad Nagar (Bhabhara)

It is a village in jobat Tahsil lying at a distance of 32 kilometres north-west of Jobat on JobatDohad Road. The place is popular as a tourist destination because the famous freedom fighter, Chandra Shekhar Azad was born in Bhabhara. Presently a small memorial has been erected in his Bhabhara in this honour.

6.4.2 Sondwa

Sondwa is a tahsil and panchayat located in the Alirajpur district of Madhya-Pradesh state, India. The latitude 22.1163673 and longitude 74.3742443 are the geocoordinate of the Sondwa. Bhopal is the state capital for Sondwa village. It is located around 334.6 kilometer away from Sondwa.. The other nearest state capital from Sondwa is Gandhinagar and its distance is 222.1 KM. The other surrounding state capitals are Gandhinagar 222.1 KM., Daman 247.4 KM., Mumbai 386.5 KM. The surrounding nearby villages and its distance from Sondwa are Walpur 6.1 KM, Darkali 29.6 KM, Soliya, Badda, Akadiya, Dabdi, Kiloda, Kherwada.

6.4.3 Katthiwada

Katthiwada is a tahsil and Japad-Panchayat located in the Jhabua district of Madhya-Pradesh state, India. The latitude 22.4711217 and longitude 74.1504204 are the geocoordinate of the Katthiwada. Bhopal is the state capital for Katthiwada village. It is located around 343.8 kilometer away from Katthiwada. The other nearest state capital from Katthiwada is Gandhinagar and its distance is 181.0 KM. The other surrounding state capitals are Gandhinagar 181.0 KM., Daman 265.9 KM., Raipur 398.2 KM.

6.5 Administrative blocks of District

The administrative headquarters of the district is Alirajpur. District Alirajpur is divided into 5 tehsil, 06 janpads and 288 Gram Panchayats, There are 01 Municipalities and 02 Nagar Panchayats and 1 Census Towns in the District. Total villages in the district as per Census 2011 are 543 out of which 538 are inhabited and 5 are uninhabited villages. The district is the basic territorial unit of administration in the state as well as in India. The Collector, as the head of the district administration is the key functionary of the Government, having vast powers and wide responsibilities. In many ways he is

the link between the state Government and the people. He is the custodian of law and order and the pivot of local administration. He is the chief executive officer of the district and as such he exercises general supervision over various departments with regard to their non-technical work. Coordination of the activities of various departments, control over local-self governing bodies, execution of Government schemes and miscellaneous functions, such as panchayats, Census, Election and District Survey Report, Alirajpur, Madhya Pradesh 42 Relief measures in time of emergencies like floods, famine and epidemics etc. come within his purview. The organizational set-up of the collectorate may be divided into three main functionaries viz.(i) land revenue, land-records including consolidation of land and other allied matters. (ii) law and order and (iii) Development. The Collector is assisted by deputy collectors, tahsildars, Naib (deputy) tahsildars, revenue inspectors and patwaris. The Collector is also associated with a number of other committees in the district. The most important among them is the district advisory committee. The Collector is also vested with statutory powers under excise Act to implement the excise and prohibition policy of the Government. Superintendent of Police is the head of police department at the district headquarters, In order to facilitate proper and smooth maintenance of law and order. The Judiciary is independent. At the district level, there is district court headed by District and Session Judge. District and Session Judge is assisted by Civil Judges posted at tehsil level.

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CHAPTER - 8
LAND UTILIZATION PATTERN OF THE DISTRICT


Land cover is the physical material at the surface of the earth. Land covers include grass, asphalt, trees, bare ground, water, etc. Earth cover is the expression used by ecologist Frederick Edward Clements that has its closest modern equivalent being vegetation. The expression continues to be used by the Bureau of Land Management. There are two primary methods for capturing information on land cover: field survey and analysis of remotely sensed imagery. One of the major land cover issues (as with all natural resource inventories) is that every survey defines similarly named categories in different ways. For instance, there are many definitions of "forest" sometimes within the same organisation—that may or may not incorporate a number of different forest features (e.g., stand height, canopy cover, strip width, inclusion of grasses, and rates of growth for timber production). Land use involves the management and modification of natural environment or wilderness into built environment such as settlements and semi-natural habitats such as arable fields, pastures, and managed woods. It also has been defined as "the total of arrangements, activities, and inputs that people undertake in a certain land cover type.

LAND TYPE	LAND USE	AREA IN HECTARE
Revenue (Khata Land)	Agricultural Irrigated land	57056
	Agricultural Non-irrigated land	111234
	Fallow Land	6388
Revenue (Ger-Khata Land)	Populated Land (Rural)	512
	Populated Land (Urban)	129
	Mango garden & other	8721
	Scrub Forest (Revenue)	7717
	Scrub Forest (Forest)	49266
	Shrimp Forest and Grass	3460
	Land below the water	20054
	Mountain Rock	48552
	Building, Road etc.	5136
	Mining ½Lease½	370.79
Forest Land (97020.29 HECTARE)	Reserve	85084.45
	Protected	11903.57
	Unclassified	32.27

CHAPTER - 9

PHYSIOGRAPHY OF THE DISTRICT

Alirajpur district is mainly a hilly region covered with a chain of hills known as —The Vindhya, which extends northwards towards Udaipur in Rajasthan. The maximum density of the hills is in the southern part of the district in Alirajpur tehsil. The maximum elevation of 751 m. amsl is recorded near Mathwar village in Sondwa block. The general trends of the hills are in east-west direction. Alirajpur district lies in the major basins, the Hatni River in the north and the Narmada in the south. The Narmada River forms the southern boundary of the district with a westerly flow of water. The major tributaries having their confluence with the Narmada are Hatni, Ankhai and Sukar. Narmada River has a length of 45 Km. In the district and along with its tributaries drains 6.96 % of the geographical area The Hatni River forms northern and north eastern boundary of the district. It has a length of 110 Km. the Hatni and Ankhai drains 40% of the geographical area of the district.


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CHAPTER - 10

MONTHLY RAINFALL AND CLIMATE CONDITIONS OF THE DISTRICT


Climate is generally moderate and seasons are well defined. The summers are hot, winters are short and the monsoon season is generally pleasant. The average annual rainfall in the district is about 879.7 mm. Most of the rainfall occurs in monsoon season while there is also a little of rainfall in winter season.

A hot summer and general dryness characterize the climate of Alirajpur district, except during the southwest monsoon season. The year can be divided in to four seasons. The winter commences from middle of November and lasts till the end of February. The period from March to about middle of June is the hot summer season. May is the hottest month of the year. The southwest monsoon starts from middle of June and lasts till end of September. October and middle of November constitute the post monsoon or retreating monsoon season.

The temperature starts rising from the beginning of February and reaching maximum in the month of May. The normal annual mean maximum temperature is 32.80C and normal annual mean minimum temperature is 19.10C.

(According to District Land Record)

Monthly Average Rainfall			
Month	Year 2019	Year 2020	Year 2021
January	0	0	0
February	0	0	0
March	3	0	0
April	0	0	0
May	0	0	0
June	99.5	161.3	575.4
July	408.6	313.2	2349.6
August	1182.7	753.4	684.8
September	1517.9	943.3	2108.5
October	1592.2	955.5	319.8
November	1624.2	0	101.0
December	0	978.1	187.7


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E-5, Arera Colony, Bhopal (M.P.)

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

CHAPTER - 11 GEOLOGY AND MINERAL WEALTH IN THE DISTRICT

The general geological successions of the district are given in table.

Age	Stratigraphic Unit	Lithology
Recent	Alluvium	Sand, gravel and clay
Upper cretaceous to lower Eocene	Deccan trap	Basaltic lava flows
Cretaceous	Bagh Beds	Limestone (highly siliceous and fossiliferous) Grits and sandstone. Conglomerate (often calcareous and ferruginous)
	-----Unconformity----- --	
	Intrusives	Dolerites Pegmatite and Quartz veins. Migmatites. Granites Amphibolites and granulites.
Archaeans		Quartzites Calciphyres Dolomitic Marbles Chlorite schists often garnetiferous.
	Metasediments	Talc chlorite schists Graphite schists

10.1.1 Archaeans

The Archaean group of rocks are exposed in the central, north-western parts of the district. The pink and grey granites are exposed mainly in Alirajpur tehsil are generally hard and compact. The gneissic granites are susceptible to weathering with jointed and fractured zones extending about 5 to 15 m below ground level. The phyllites and schist are also present. The dolomitic marble and limestone occurring as bands, generally occurring occupy small hill.

10.1.2 Lameta and Bagh Beds

Overlying unconformably the Archaeans, are the infra-trappean represented by the Lameta and the Bagh beds. The main exposures are seen in the south-eastern and central parts of the district. The outcrops occur in widely separated patches and the litho stratigraphy differs from place to place. In general the rock unit lower arenaceous and upper calcareous 8 facies. Nimar sandstone, the basal units of the Bagh beds in the area are horizontally bedded and compact in nature with an average thickness of 12 to 18 meters. C District Survey Report, Alirajpur, Madhya Pradesh 49 Map No.9 Geology of Alirajpur District Survey Report, Alirajpur, Madhya Pradesh 50 Though hard and compact, they are well jointed and fractured and act as groundwater

repository. Nimar sandstone is overlain by nodular limestone and coralline limestone. The groundwater occurs generally under phreatic conditions in the Infra-trappean sandstone and limestone. Limestone Solution activities these rocks act as promising horizons for groundwater storage.

10.1.3 Deccan Traps


The northern and north western parts of the district covering mainly Thandla, Petlawad and Rama blocks and southern parts covered by Sondwa block are occupied by the basaltic lava flows of Cretaceous to Eocene age. More than 12 number lava flows have been demarcated in the district with average thickness of flow being 25- 30 m. The bottom most parts of the flows are generally massive, hard and compact in nature. They often show columnar jointing and 9 spheroidal weathering. The overlying vesicular basalts comprise has rounded to oval shaped vesicle, which is generally filled, with zeolites, calcite and quartz. Vesicular horizons are limited in thickness or absent there by reducing the chances of the good aquifer for the storage for groundwater storage. The weathered zones, joints, fracture and vesicular zones form the main water bearing horizons.

10.1.4 Alluvium and Laterite

Localized patches of alluvium cover occur along the banks of major and minor rivers and streams in the district. In general it is difficult to differentiate between alluvium and product of black cotton soil underlain by yellow clay with kankar. The thickness of alluvium varies from few meters to 15 m. Laterite capping on top of Deccan trap basalt are seen in localized patches. The rocks are generally bouldery in nature, highly ferruginous and weathered to yellowish red soil.

10.2 Mineral Wealth/Reserve, Grade, demand and supply

Minerals provide the material used to make most of the things of industrial- based society; roads, cars, computers, fertilizers, etc. Demand for minerals is increasing world wide as the population increases and the consumption demands of individual people increase. The mining of earth's


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natural resources is, there-fore accelerating, and it has accompanying environmental consequences. Minerals are valuable natural resources being finite and non-renewable. They constitute the vital raw materials for many basic industries and are a major resource for development. Management of mineral resources has, therefore, to be closely integrated with the overall strategy of development; and exploitation of minerals is to be guided by long-term national goals and perspectives. In Alirajpur district some important minerals have been reported from different places of the district. The mineral like Asbestos, Calcite, Granite, limestone, Megnesite, Manganese, Marble Nickel, Talc, Soup Stone, Tin and Vermiculite have been reported in Alirajpur district.

10.2.1 Asbestos


In many locations of Jobat block occurrence of asbestos have been reported. The Asbestos is reported near Jobat, Bhilkhedi, Handi, Jameri Jaisingpur, Bakal and Choti village in Jobat Block. In Alirajpur, Bhabhra, and Kathhiwara Block of district occurrences of Asbestos have been recorded in near Borkuwan, Jamla, Pujari Ki Chouki, Kakadbari and Ringol Villages. There is no recorded reserve and production of asbestos so its grade, demand and supply information is null.

10.2.2 Calcite

Calcite deposit is reported in Alirajpur and Sendhwa block of Alirajpur district. The major deposit of calcite have been found in Dhorat, Madhupalwi, Bicholi, Kakadwal, Sondwa, Darkali, Ojhad villages in Sendhwa Block and in Roddha village Alirajpur Block. The calcite is white, grayish white to yellowish white in color, massive, crystalline and mostly semi transparent in nature. There is no reported reserve and production of calcite so its grade, demand and supply information is null.

10.2.3 Manganese ore

Manganese deposits also occur in the Alirajpur district. Occurrence of manganese ore reported around village's kumbhi in Kathhiwada Block and Heerapur Chhoti in Alirajpur Block. In Kathhiwada block the manganese ore is found associate with Quartz Muscovite Schist and in Alirajpur Block it found


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associate with chlorite Schist. One mining lease is sanctioned in the district, according to the mining plan of this lease the reserve of manganese is 0.164 MT and production is 6222.21 Tone in the year 2021-22. The average percentage of Mn in the lease is less than 25%, due to which there is a demand in ferrow and it is supplied in places like S.M.O. Ferro-Alloys Meghnagr district Jhabua and A.M. Enterprises Asansol West Bengal etc. Apart from this, earlier applications have been made for prospecting licence in village Ringol, Sejawada and Adwada in the district.

10.2.4 Granite

Granite is a common type of felsic intrusive igneous rock that is granular and phaneritic in texture. Granites can be predominantly white, pink, or gray in color, depending on their mineralogy. Granite is an igneous rock with at least 20% quartz and up to 65% alkali feldspar District Survey Report, Alirajpur, Madhya Pradesh 52 by volume. These rocks mainly consist of feldspar, quartz, mica, and amphibole minerals, which form an interlocking, somewhat equigranular matrix of feldspar and quartz with scattered darker biotite mica and amphibole (often hornblende) peppering the lighter color minerals. The Granite in mainly found in kathhiwada block of the Alirajpur district. The color of granite is Gray with fine to Medium Grained and hard and compact in nature. Granite rock is present in abundance in the district, for which prospecting lease has sanctioned and cutting polishing grade has been reported.

10.2.5 Marble

Some important deposits of marble have been recorded and studied in detail in the western part of Kathhiwada block near Karah Village. In Alirajpur block near begda and Palasda village marble deposits have also been reported. The limestone is present in associate with calc silicate rocks. Due to the lack of economic production of marble in the district, the information about grade, demand and supply is null.

10.2.6 Limestone

In Jobat block limestone deposit have been found near Salkheda, dabadi, Jamni and in kanwada village. In Sondhwa block around walpur village deposits of limestone also have also been reported. The process of placing the limestone block Salkheda of the district in e-auction is in vogue.

10.2.7 Talc and Soap Stone

Talc and Soap stone deposits are also reported in Alirajpur district. In Khathhiwada block the deposits are present near village Jharkali, Kail, Ekdhadi and Koha and in Bhabhara Block the deposits are present near Airan. The soapstone occurs in association with Granitic rock in this area. Due to the lack of economic production of marble in the district, the information about grade, demand and supply is null.

10.2.7 Tin

Occurrence of Tin deposits has been recorded from Raddhu, Ghoghalpur, Badiwegalgaon, near Somkuwa, Guneri, Delwani, Dabdi and Bhordiya Village in Sondhawa Block. Tin Deposits are also occurs in Alirajpur Block near village Sejgaon, Ajanda, Kharpai and Kanpur. In Jobat block the Tin deposits have also been reported from Dabadi, Takadi, Sewariya, Jaisinghpur and Devlai Village. Along with this Tin Deposits have also found in Udaygarh Block near village Badi Juwari and Uti. These deposits are present in association with Nodular Limestone and Nimar Sandstone. Apart from above mentioned mineral deposits Nickel and Vermiculite and also found in Jameri and Bhilkhedi Village in Jobat block respectively.

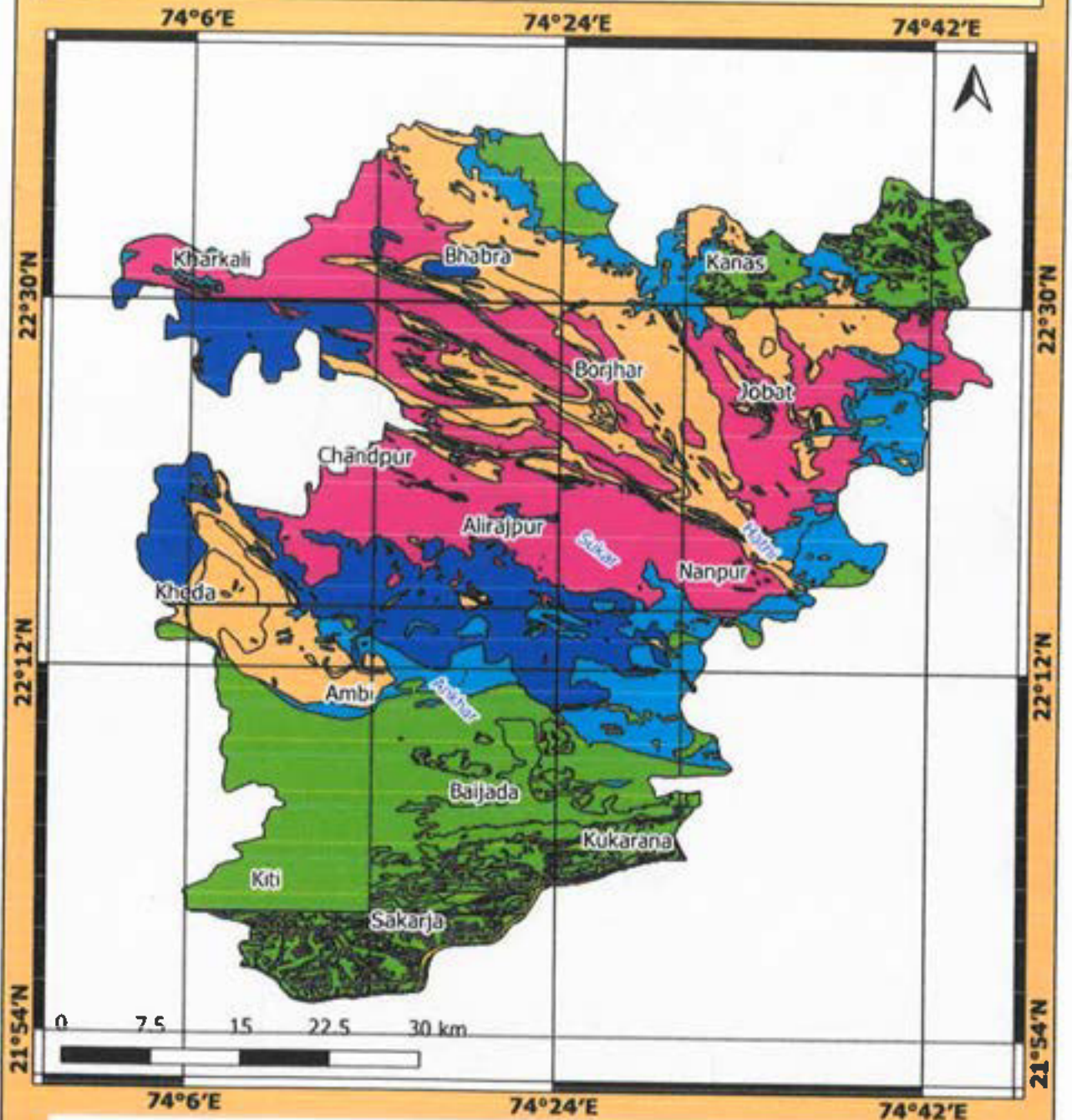
10.2.8 Deccan trap or Basalt

Deccan trap or Basalt are occure mainly Southern part, NE part and Northern portion in the district. Sondwa tahsil of the district is covered by the Deccan trap and tahsil Chandrashekhar Ajad Nagar, Jobat, Udaigad (Kanas) are partly covered by the Deccan trap. As per the data of production the production is 172145.64 m³ in the year 2021-22 and many places the basalt is good for gitty making.

10.2.9 Dolomite

In Alirajpur, Jobat and Udaigad (Kanas) block dolomite deposit have been found near Badi, Kharkadi, Agoni, Tokriyajhiraan and hardaspur etc villages. Dolomite is found in huge quantity in the district, which is used on the basis of its quality in washing powder industries, paint industries and rangoli powder industries etc, which is supplied in many cities of Madhya Pradesh and Maharashtra state. The process of placing the dolomite block Agoni, Tokariyajhiraan, Hardaspur etc villages of the district in e-auction is in vogue.

GEOLOGICAL MAP OF DISTRICT ALIRAJPUR



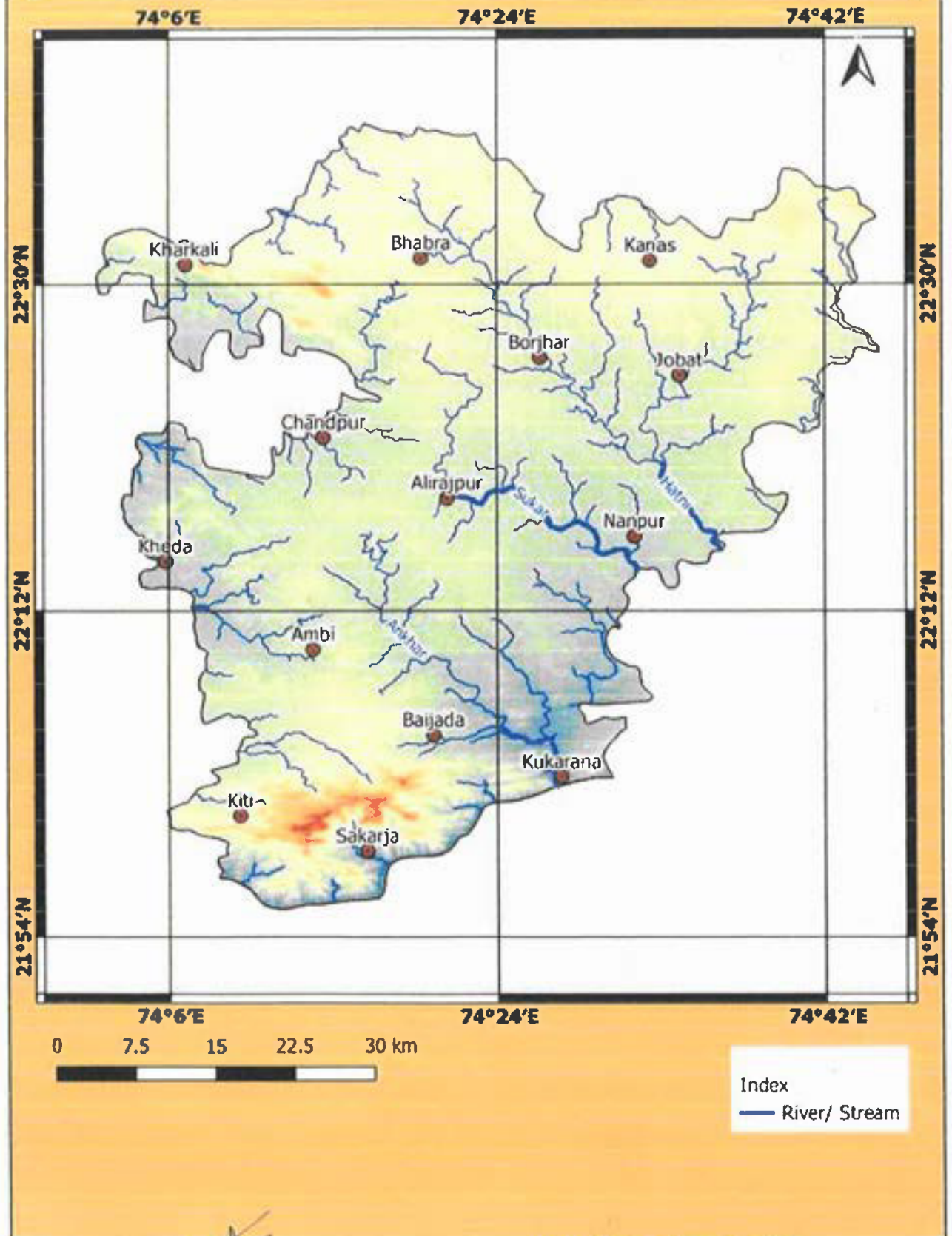
INDEX

- HOLOCENE (ALLUVIUM)
- LATE CRETACEOUS-PALAEOCENE (BASALT)
- LATE CRETACEOUS (CONGLOMERATE/LIMESTONE/SANDSTONE)
- NEOPROTEROZOIC (QUARTZ VEIN/REEF, GRANITE)
- PALAEOPROTEROZOIC (ANORTHOSITE, PYROXENITE, DUNITe, MARBLE, QUARTZITE, PHYLLITE, SCHIST, BIF)
- ARCHAean (GRANITE GNEISS, MIGMATITE)

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DRAINAGE MAP OF DISTRICT ALIRAJPUR



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**IN ADDITION TO THE ABOVE, THE REPORT SHALL
CONTAIN THE FOLLOWING**

Drainage system with description of main rivers

S. No	Name of the River	Area drained (Sq. Km)	% Area drained in the District
1	Hatni River	829.27653	24.92
2	Ankhai River	505.34358	15.18
3	Narmada River	231.72065	6.96
4	Sukar River	467.44298	14.04
5	AW1	94.75909	3.54
6	AW2	65.91011	2.68
7	AW3	116.0153	4.18
8	AW4	388.7685	12.38
9	AW5	513.1791	16.12
	Total	3212.74 100	

Salient Features of Important Rivers and Streams

s.no.	Name of River	Total Length in the district (in kms)	Place of origion	Altitude at origion
1	Hatni River	About 85 kms	Sejawada	414
2	Ankhad River	About 30 kms	Sorwa tahsil	326
3	Narmada River	About 45 Kms	Amarkantak	1069
4	Sukkad River	About 72kms	Kunhki	382
5	Orsang River	About 38 kms	Begda	463


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Portion of River or Stream Recommended for Mineral Concessions

S.No.	Portion of the River or Stream Recommended for Mineral Concession	Length of the recommended for mineral concession (in kilometer)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in cubic meter) (60% of total mineral potential)	Concession wise mineral (sand) potential/deposition detail						Production Details			Sand mines (old/new)	Remark	
						Length of sand deposition (in meters)	Width of sand deposition (in meters)	Depth of sand deposition (in meters)	Total mineral (sand) load (in MT)	60% mineral potential (in MT)	(sand) potential (in MT)	(sand) potential (in MT)	Production 2019-20	Production 2020-21			Production 2021-22
1	Sukkad	0.46	86	40000	39192	460	71	2	65320	39192	54868.8	0	25997.32	0	14	16	
2	Sukkad	1.25	80	100000	39000	1250	65	0.8	65000	39000	54600	0	0	0	0	0	New
3	Ankhad	1.18	84	100000	58622	1180	69	1.2	97704	58622	82070.8	0	0	0	0	0	New
4	Nala	0.58	60	35000	15660	580	45	1	26100	15660	21824	0	0	0	0	0	New
5	Ankhad	1.16	32	37500	17748	1160	17	1.5	29580	17748	4847.2	0	1614.34	0	0	0	New
6	Sukkad	1.18	42	50000	*	*	*	*	*	*	*	0	9998.90	0	0	0	*
7	Sukkad	1.2	58	70000	37152	1200	43	1.2	61920	37152	52012.8	0	0	0	0	0	New
8	Nala	0.496	69	34400	5356	496	18	1	8928	5356	7498.4	0	10498.66	0	0	0	New
9	Hathni	1.28	42	55000	14515	1280	27	0.7	24192	14515	20321	0	0	0	0	0	New
10	Hathni	0.85	20	17000	5100	850	10	1	8500	5100	7140	0	8096.21	0	0	0	New
11	Nala	0.48	62	30000	20304	480	47	1.5	33840	20304	28425.6	0	12299.80	0	0	0	New
12	Ankhad	0.8	69	55200	4320	800	18	0.5	7200	4320	6048	0	0	0	0	0	New
13	Ankhad	0.38	57	21800	2280	380	20	0.5	3800	2280	3192	0	0	0	0	0	New
14	Hathni	0.908	66	60000	6537	908	24	0.5	10896	6537	9151.8	0	0	0	0	0	New
15	Hathni	0.828	120	100000	6955	828	28	0.5	11592	6955	9737	0	0	0	0	0	New
16	Orsang	0.35	171	60000	55692	350	156	1.7	92820	55692	77968.8	0	0	0	0	0	New
17	Orsang	0.22	181	40000	37250	220	166	1.7	62084	37250	52150	0	0	0	0	0	New
18	Nala	1.18	33	40000	17700	1180	25	1	29500	17700	24780	0	21999.26	0	0	0	New
19	Nala	0.78	64	50000	22932	780	49	1	38720	22932	32104.8	0	27999.03	0	0	0	New
20	Nala	1.56	92	50000	19094	1560	17	1.2	21824	19094	26731.6	0	0	0	0	0	New
21	Nala	1.02	14	15000	3672	1020	4	1.5	6120	3672	5140.8	0	0	0	0	0	New
22	Nala	1.2	44	53000	20880	1200	29	1	34800	20880	29232	0	0	0	0	0	New
23	Nala	1.18	50	60000	37170	1180	35	1.5	61950	37170	52038	0	0	0	0	0	New
24	Nala	0.92	65	60000	27600	920	50	1	46000	27600	38640	0	0	0	0	0	New
25	Nala	1.48	40	60000	22200	1480	25	1	37000	22200	31080	0	0	0	0	0	New
26	Urpur	1.72	40	70000	25800	1720	25	1	43000	25800	36120	0	0	0	0	0	New
27	Urpur	0.6	51	30700	12960	600	36	1	21600	12960	18144	0	0	0	0	0	New
28	Nala	0.468	50	23500	9828	468	35	1	16380	9828	13759.2	0	14295.19	0	0	0	New

In nature it is not possible that sand deposited in the river, during monsoon season have uniform depth in all 49 sand mines of the district. The depth mentioned in above table column no. 8 is the actual depth measured in each proposed sand concession.

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29	Nala	1.55	42	66000	25110	1550	27	1	41850	25110	35154	0	0	0	0	0	New
30	Nala	0.518	28	15000	8080	518	13	2	13468	8080	11312	0	0	0	0	0	New
31	Nala	0.58	86	50000	18792	580	60	0.9	31320	18792	26308.8	0	0	0	0	0	New
32	Nala	0.5	80	40000	8700	500	58	0.5	14500	8700	12180	0	0	0	0	0	New
33	Nala	1.34	36	40400	25326	1340	21	1.5	42210	25326	35456.4	0	0	23308.70	0	0	New
34	Nala	1.26	36	45500	14288	1260	21	0.9	23814	14288	20003.2	0	0	0	0	0	New
35	Nala	1.04	69	72300	8736	1040	28	0.5	14560	8736	12230.4	0	0	0	0	0	New
36	Nala	0.62	35	21800	7440	620	20	1	12400	7440	10416	0	0	7497.67	0	0	New
37	Nala	0.52	38	19900	10764	520	23	1.5	17940	10764	15069.6	0	0	0	0	0	New
38	Nala	0.6	19	11600	900	600	5	0.5	1500	900	1260	0	0	0	0	0	New
39	Nala	0.38	78	30000	4104	380	18	1	6840	4104	5745.6	0	0	11702.00	0	0	New
40	Nala	0.76	37	28600	5016	760	22	0.5	8360	5016	7022.4	0	0	7998.96	0	0	New
41	Nala	0.96	30	29400	8640	960	15	1	14400	8640	12096	0	0	0	0	0	New
42	Nala	0.72	55	40000	17280	720	40	1	28800	17280	24192	0	0	0	0	0	New
43	Nala	0.65	24	16400	1980	660	5	1	3300	1980	2772	0	0	4999.10	0	0	New
44	Nala	0.65	15	10000	3960	660	10	1	6600	3960	5544	0	0	4000.00	0	0	New
45	Nala	1	18	18200	6000	1000	10	1	10000	6000	8400	0	0	4999.26	0	0	New
46	Nala	1.32	19	25200	11880	1320	10	1.5	19800	11880	16632	0	0	5997.96	0	0	New
47	Nala	0.68	19	13400	3672	680	10	0.9	6120	3672	5140.8	0	0	2999.62	0	0	New
48	Nala	1.04	57	60000	14601	1040	26	0.9	24336	14601	20441.4	0	0	0	0	0	New
49	Nala	0.368	54	20000	9273	368	42	1	15456	9273	12982.2	0	0	5990.93	0	0	New
				210.08 hac	8,00,061 M ³						8,00,061 M ³	11,20,085 MT					

In nature it is not possible that sand deposited in the river, during monsoon season have uniform depth in all 49 sand mines of the district. The depth mentioned in above table column no. 8 is the actual depth measured in each proposed sand concession.

It is pertinent to mention here that, sand is not deposited in the entire portion of the river or stream recommended for mineral concession. However deposition sand is found in the part of the recommended for mineral concession, hence in the table the length, width and depth of the sand deposition area have been given separately in the prescribed format and the total mineral capacity and 60 percent of its minable capacity has been estimated.

In nature it is not possible that sand deposited in the river, during monsoon season have uniform depth in all 49 sand mines of the district. The depth mentioned in above table column no. 8 is the actual depth measured in each proposed sand concession.

A total of 49 sand mines in the district were declared in the year 2019. Put on auction for the first time in the year 2019. Out of 49 mines, EC for 19 sand mines were produced by the contractor and the contractor produced sand from these 19 sand mines. In remaining 30 mines due to non-receipt of EC, the production in 30 mines is null. Therefore, the data submitted by the Mining Inspector, available sand quantity have been calculated.

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प्रभारी अधिकारी

अभिजित शाखा जिला-अलीराजपुर

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Minral Potential

Boulder (MT)	Bajari (MT)	Sand (MT)	Total Mineable Mineral Potential (MT)
It is associated with river sand as unsorted material.as per volume it constitutes approximately 3 % of total deposition/ Mineable mineral potential i.e. 800061 m ³ in the stream. hence the volume of boulder is 24,001 m ³ (33,601.4 MT).	It is associated with river sand as less sorted material.as per volume it constitute approximately 5 % of total deposition/ Mineable mineral potential i.e. 800061 m ³ in the stream.hence the volume of bajri is 40,003 m ³ (56,004.2 MT).	as per volume it constitute approximately 92 % of total deposition/ Mineable mineral potential i.e. 800061 m ³ in the stream. hence the volume of sand is 7,36,056 (92%) m ³ (10,30,478.4 MT).	The Minable mineral is sum of Boulder, Bajri and Sand i.e. 8,00,061 m ³ (11,20,085 MT).

Annual Deposition

Boulder (MT)	Bajari (MT)	Sand (MT)	Total Deposition (MT)
It is associated with river sand as unsorted material.as per volume it constitutes approximately 3 % of total deposition/Mineable mineral potential i.e. 800061 m ³ in the stream. Hence the volume of boulder is 24,001 m ³ (33,601.4 MT).	It is associated with river sand as less sorted material.as per volume it constitute approximately 5 % of total deposition/ Mineable mineral potential i.e. 800061 m ³ in the stream.hence the volume of bajri is 40,003 m ³ (56,004.2 MT).	as per volume it constitute approximately 92 % of total deposition/ Mineable mineral potential i.e. 800051 m ³ in the stream. Hence the volume of sand is 7,36,056 (92%) m ³ (10,30,478.4 MT).	The Minable mineral is sum of Boulder, Bajri and Sand i.e. 8,00,061 m ³ (11,20,085 MT).


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अभिवृत्त समिति द्वारा तैयार एवं मन्त्रापित

 प्रकाश अधिकारी
 कुनिज शाखा जिला-अलीराजपुर

CHAPTER -13

RECOMMENDATION OF ENFORCEMENT & MONITORING GUIDELINES FOR SAND MINING BY MOEF&CC-2020

4.1 Introduction

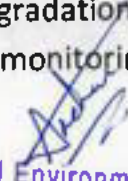
India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activity particularly sand mining in the country.

Following a series of orders by the National Green Tribunal in 2018, the Ministry of Environment, Forests and Climate Change has for the first time released guidelines to monitor and check illegal sand mining in the country. The Enforcement and Monitoring (EM) Guidelines for Sand Mining 2020 released by the Ministry include directions to states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels. The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night-vision drones.

While the MoEF&CC has already put in place the Sustainable Sand Management Guidelines 2016, which focus on the management of sand mining in India, that there is an urgent need to have guidelines for effective enforcement of regulatory provisions and their monitoring.

4.2 Background

The Mines and Minerals (Development and Regulation) Act, 1957 has empowered state governments to make rules to prevent illegal mining, transportation and storage of minerals. "But in the recent past, it has been observed that there were a large number of illegal mining cases in the country and in some cases, many of the officers lost their lives while executing their duties to curb illegal mining. Illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment. The enforcement guidelines focus on the "effective monitoring of sand mining from the identification of sand mineral


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sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country”.

The need for replenishment study for river bed sand is also required in order to “nullify the adverse impacts arising due to excessive sand extraction”. No riverbed mining will be allowed during the monsoon. In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.

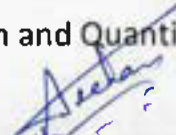
The guidelines say the detailed survey needs to be carried out for quantification of minerals and the demand and supply of the riverbed material through market survey, including the future demand for the next five years. The guidelines also push for the sale and purchase of sand and river bed material (RBM) online to make the process more transparent. “In order to curb illegal mining, it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. It is suggested that the state government should develop an online portal for sale and purchase of sand and RBM. The state government will also decide the model of sale and the price of RBM. “It is suggested that the controlled price model is more effective in controlling illegal sand mining,” the guidelines state.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining. The document is prepared in consideration of various orders/directions issued by Hon’ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing “Sustainable Sand Mining Management Guideline-2016” (SSMG-2016), and these two guidelines viz. “Enforcement & Monitoring Guidelines for Sand Mining” (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in “Enforcement & Monitoring Guidelines for Sand Mining-2020 “shall prevail.

4.3 Objective of Guidelines

-Identification and Quantification of Mineral Resource and its optimal utilization.


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- To regulate the Sand & Gravel Mining in the Country since its identification to its final end use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining.

4.4 Salient Features of the Guidelines


District Survey Report: The guidelines provide the procedure to be followed for identifying areas where mining can be allowed or prohibited. It provides guidelines for preparing a district survey report, which includes: Preparing a report before granting a mining lease, and Defining mining and no mining zones based on certain environmental and social factors.

Preventing Illegal Mining: The guidelines suggest that sites can be monitored remotely by using unmanned artificial vehicles or drones. Drones can also be used for quantity estimation and land use monitoring. Further, the guidelines propose night surveillance of mining activity through night-vision drones. The environmental damages incurred due to illegal mining will be assessed by a committee constituted by the District Administration.

Environmental Clearance: Environmental Clearance for mining is given by regulatory authorities after considering the potential environmental impact. However, it has been observed that often the Letter of Intent (LoI) is granted for a location which is not feasible for environment-friendly mining. The guidelines provide that LoIs should be granted for those locations which have the least possibility of an impact on the environment and nearby habitation.

The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. There are some important key points of EM guidelines for sand mining 2020:

a) **Source to Destination Monitoring:** The new set of guidelines focuses on the effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and look at a uniform protocol for the whole country. Constantly monitor mining with drones and night surveillance of mining activity through night-vision drones.


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b) Audits: States to carry out river audits put detailed survey reports of all mining areas in the public domain.

c) Enforcement: It gives directions to states to set up dedicated task forces at district levels. In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.

d) Sustainability: Conduct replenishment study for river bed sand in order to nullify the adverse impacts arising due to excessive sand extraction. No riverbed mining will be allowed during the monsoon.


4.5 Requirement for Monitoring & Enforcement

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the sources of sand in India are through:

- River (riverbed and flood plain),
- Lakes and reservoirs,
- Agricultural fields
- Coastal / marine sand,
- Palaeo-channels and
- Manufactured Sand (M-Sand).

4.6 Preparation of District Survey Report

"Sustainable Sand Mining Guidelines, 2016" issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/LoI. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.


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Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depend on the quality of District Survey Report.

Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters, formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.


a) District Survey Report for sand mining shall be prepared before the auction/eauction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.

b) The first step is to develop the inventory of the River Bed Material and Other sand sources in the District. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatadari Land, M-sand etc.

c) District Survey Report is to be prepared in such a way that it not only identifies the mineralbearing area but also define the mining and no mining zones considering various environmental and social factors.

d) Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khatadari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khatadari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of MSand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in Annexure-I.

e) Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this,


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the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition is identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central $\frac{3}{4}$ th part of the river; width needs to be identified on a map. Out of the $\frac{3}{4}$ th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining $\frac{1}{4}$ th area needs to be kept as no mining zone for the protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

f) The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.

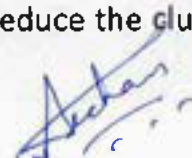
g) Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.

h) Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.

i) It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.

j) The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.

k) Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a


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way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.

l) The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.

m) The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.

n) The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so selected should be verified by the State Government for its carrying capacity.

o) Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as Annexure-II. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in Annexure-III. The details of the transportation need to be provided as in Annexure IV.

p) Public consultation-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the

general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per Annexure-V. The details regarding cluster and contiguous cluster needs to be provided in Annexure-VI. The details of the transportation need to be provided in Annexure-VII.

No. of Annexure	Details
Annexure -I	Details of Sand/ M-Sand Sources
Annexure -II	List of Potential Mining Leases (Existing & Proposed)
Annexure -III	Cluster & Contiguous Cluster details
Annexure -IV	Transportation Routes for individual leases and leases in Cluster
Annexure -V	Final List of Potential Mining Leases (Existing & Proposed)
Annexure -VI	Final List of Cluster & Contiguous Cluster
Annexure -VII	Final Transportation Routes for individual leases and leases in Cluster

ANNEXURE NO.-I, Details of Sand/M-Sand Sources.

a) Rivers.

River Name/ M-Sand Plant	Total Stretch of River (in km.)	Type of River (Perennial or Non-Perennial)
Kodli	0.46	Non-Perennial
Rajawat	1.25	Non-Perennial
Baddala	1.18	Non-Perennial
Baddala	0.58	Non-Perennial
Baddala	1.16	Non-Perennial
Morasa	1.18	Non-Perennial
Kharkuan	1.2	Non-Perennial
Ambari	0.496	Non-Perennial
Badi-Khattali	1.28	Non-Perennial
Baldamug	0.85	Non-Perennial
Davri	0.48	Non-Perennial
Chhoti Vegalgaon	0.8	Non-Perennial
Chhoti Vegalgaon	0.38	Non-Perennial
Bhordiya	0.908	Non-Perennial
Rawdi	0.828	Non-Perennial
Sajanpur-1	0.35	Non-Perennial
Sajanpur-2	0.22	Non-Perennial
Akola-1	1.18	Non-Perennial
Akola-2	0.78	Non-Perennial
Bijoriya-1	1.56	Non-Perennial

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Bijoriya-2	1.02	Non-Perennial
Moriyagaon	1.2	Non-Perennial
Chandpur	1.18	Non-Perennial
Guda-1	0.92	Non-Perennial
Guda-2	1.48	Non-Perennial
Pratappura	1.72	Non-Perennial
Panala-1	0.6	Non-Perennial
Panala-2	0.468	Non-Perennial
Falyamau-1	1.55	Non-Perennial
Falyamau-2	0.518	Non-Perennial
Aalgota-1	0.58	Non-Perennial
Aalgota-2	0.5	Non-Perennial
Arthhi-1	1.34	Non-Perennial
Arthhi-2	1.26	Non-Perennial
Aalgota-3	1.04	Non-Perennial
Aalgota-4	0.62	Non-Perennial
Aalgota-5	0.52	Non-Perennial
Kadvaliya	0.6	Non-Perennial
Chandpur-1	0.38	Non-Perennial
Chandpur-2	0.76	Non-Perennial
Chandpur-3	0.96	Non-Perennial
Chandpur-4	0.72	Non-Perennial
Akola	0.66	Non-Perennial
Mehani	0.66	Non-Perennial
Vakneri	1	Non-Perennial
Andharkach	1.32	Non-Perennial
Nichavas	0.68	Non-Perennial
Bholvat	1.04	Non-Perennial
Aamkhut	0.368	Non-Perennial

b) De-Siltation Location: (Lakes/Ponds/Dams etc.)

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size(Ha)
NIL						

c) Patta Lands/Khatedari Land:

Owner	Sy.No.	Area(Ha)	District	Tehsil	Village	Agricultural Land(Yes/No)
NIL						

d) M-Sand Plants:

Plant Name	Owner	District	Tehsil	Village	Geo- Location	Quantity Tones/Annum
NIL						

Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.


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ANNEXURE NO.-II,

List of Potential Sand Mining Area (Existing & Proposed) Rivers.

River Details	Lease Details	Area (Ha)	Distance (in KM) from PA/BR/WC	Distance from Forest Area (in KM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in M ³ /Annum considering digging depth max as 3 meters.		Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing/ Proposed
						In M ³	In tonne		
Sukkad	Kodli	4.00	More than 10 kms.	More than 0.25 kms.	no	39192	54868.8	Sand	Existing
Sukkad	Rajawat	10.00	More than 10 kms.	More than 0.25 kms.	yes	39000	54600	Sand	Existing
Ankhad	Baddala	10.00	More than 10 kms.	More than 0.25 kms.	yes	58622	82070.8	Sand	Existing
Nala	Baddala	3.50	More than 10 kms.	More than 0.25 kms.	yes	15660	21924	Sand	Existing
Ankhad	Baddala	3.75	More than 10 kms.	More than 0.25 kms.	no	17748	24847.2	Sand	Existing
Sukkad	Morasa	5.00	More than 10 kms.	More than 0.25 kms.	no	0	0	Sand	Existing
Sukkad	Kharkuan	7.00	More than 10 kms.	More than 0.25 kms.	yes	37152	52012.8	Sand	Existing
Nala	Ambari	3.44	More than 10 kms.	More than 0.25 kms.	no	5356	7498.4	Sand	Existing
Hathni	Badi-Khattali	5.50	More than 10 kms.	More than 0.25 kms.	yes	14515	20321	Sand	Existing
Hathni	Baldamug	1.70	More than 10 kms.	More than 0.25 kms.	no	5100	7140	Sand	Existing
Nala	Davri	3.00	More than 10 kms.	More than 0.25 kms.	no	20304	28425.6	Sand	Existing
Ankhad	Chhoti Vegalgaon	5.52	More than 10 kms.	More than 0.25 kms.	yes	4320	6048	Sand	Existing
Ankhad	Chhoti Vegalgaon	2.18	More than 10 kms.	More than 0.25 kms.	yes	2280	3192	Sand	Existing
Hathni	Bhordiya	6.00	More than 10 kms.	More than 0.25 kms.	yes	6537	9151.8	Sand	Existing
Hathni	Rawdi	10.00	More than 10 kms.	More than 0.25 kms.	yes	6955	9737	Sand	Existing
Orsang	Sajanpur-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	55692	77968.8	Sand	Existing
Orsang	Sajapur-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	37250	52150	Sand	Existing
Nala	Akola-1	4.00	More than 10 kms.	More than 0.25 kms.	no	17700	24780	Sand	Existing
Nala	Akola-2	5.00	More than 10 kms.	More than 0.25 kms.	no	22932	32104.8	Sand	Existing
Nala	Bijoriya-1	5.00	More than 10 kms.	More than 0.25 kms.	yes	19094	26731.6	Sand	Existing
Nala	Bijoriya-2	1.50	More than 10 kms.	More than 0.25 kms.	yes	3672	5140.8	Sand	Existing
Nala	Moriyagaon	5.30	More than 10 kms.	More than 0.25 kms.	yes	20880	29232	Sand	Existing
Nala	Chandpur	6.00	More than 10 kms.	More than 0.25 kms.	yes	37170	52038	Sand	Existing
Nala	Guda-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	27600	38640	Sand	Existing

Nala	Guda-2	6.00	More than 10 kms.	More than 0.25 kms.	yes	22200	31080	Sand	Existin g
Urpur	Pratappura	7.00	More than 10 kms.	More than 0.25 kms.	yes	25800	36120	Sand	Existin g
Urpur	Panala-1	3.07	More than 10 kms.	More than 0.25 kms.	no	12960	18144	Sand	Existin g
Nala	Panala-2	2.35	More than 10 kms.	More than 0.25 kms.	no	9828	13759.2	Sand	Existin g
Nala	Falyamau-1	6.60	More than 10 kms.	More than 0.25 kms.	yes	25110	35154	Sand	Existin g
Nala	Falyamau-2	1.50	More than 10 kms.	More than 0.25 kms.	no	8080	11312	Sand	Existin g
Nala	Aagaigota-1	5.00	More than 10 kms.	More than 0.25 kms.	yes	18792	26308.8	Sand	Existin g
Nala	Aagalgot-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	8700	12180	Sand	Existin g
Nala	Arthhi-1	4.94	More than 10 kms.	More than 0.25 kms.	no	25326	35456.4	Sand	Existin g
Nala	Arthhi-2	4.55	More than 10 kms.	More than 0.25 kms.	yes	14288	20003.2	Sand	Existin g
Nala	Aagalgot-3	7.230	More than 10 kms.	More than 0.25 kms.	yes	8736	12230.4	Sand	Existin g
Nala	Aagalgot-4	2.180	More than 10 kms.	More than 0.25 kms.	no	7440	10416	Sand	Existin g
Nala	Aagalgot-5	1.990	More than 10 kms.	More than 0.25 kms.	no	10764	15069.6	Sand	Existin g
Nala	Kadvaliya	1.160	More than 10 kms.	More than 0.25 kms.	no	900	1260	Sand	Existin g
Nala	Chandpur-1	3.00	More than 10 kms.	More than 0.25 kms.	no	4104	5745.6	Sand	Existin g
Nala	Chandpur-2	2.860	More than 10 kms.	More than 0.25 kms.	no	5016	7022.4	Sand	Existin g
Nala	Chandpur-3	2.940	More than 10 kms.	More than 0.25 kms.	no	8640	12096	Sand	Existin g
Nala	Chandpur-4	4.00	More than 10 kms.	More than 0.25 kms.	no	17280	24192	Sand	Existin g
Nala	Akola	1.640	More than 10 kms.	More than 0.25 kms.	no	1980	2772	Sand	Existin g
Nala	Mehani	1.000	More than 10 kms.	More than 0.25 kms.	no	3960	5544	Sand	Existin g
Nala	Vakneri	1.820	More than 10 kms.	More than 0.25 kms.	no	6000	8400	Sand	Existin g
Nala	Andharkach	2.520	More than 10 kms.	More than 0.25 kms.	no	11880	16632	Sand	Existin g
Nala	Nichavas	1.340	More than 10 kms.	More than 0.25 kms.	no	3672	5140.8	Sand	Existin g
Nala	Bholvat	6.00	More than 10 kms.	More than 0.25 kms.	yes	14601	20441.4	Sand	Existin g
Nala	Aamkhut	2.00	More than 10 kms.	More than 0.25 kms.	no	9273	12982.2	Sand	Existin g

अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
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 State Level Environment Impact
 Assessment Authority, M.P.
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 Parvavaran Parisar
 E-5, Arera Colony, Bhopal (M.P.)

Patta Lands/Khatedari Land: (existing & proposed)

Owner	Sy.No.	Area	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing/Proposed NIL
NIL								

De-Siltation Location: (Lakes/Ponds/Dams etc.) (existing & proposed)

Name of reservoir/ Dams	Maintain/ Controlled by State Govt/PSU etc.	Location	District	Tehsil	Village	Size (Ha)	Quantity MT/Year	Existing/ Proposed
NIL								

M-Sand Plants: (existing & proposed)

Plant Name	Owner	Location	District	Tehsil	Village	Geo-Location	Quantity Tones/Annum	Existing/ Proposed
NIL								

ANNEXURE-III

Cluster & Contiguous Cluster details

1. Clusters:

River Name	Cluster No.	Lease No.	Location (Reverbed/ Patta Land)	Village	Area (ha)	Total excavation (MT)	Total Mineral excavation (MT)
NIL							

2. Contiguous Cluster:

River Name	Contiguous Cluster No.	Cluster No.	Number of lease in the cluster	Location (Rever bed / Patta land)	Distance between cluster	Village	Area of cluster (ha)	Total mineral excavation (ton)
NIL								


 State Level Environment Impact
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अधिकृत समिति द्वारा तैयार एवं सत्यापित
 प्रभारी अधिकारी
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ANNEXURE-IV

Transportation Routes for Individual Sand Quarry and Sand Quarry in Cluster

1. Transportation Routes For Individual Sand Quarry

Lease Name	Transportation Route No.	Number of tippers/ day of lease	Number of tippers/ day of all the lease on route	Length of Route in KM	Type of road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/Lease Owner	Route Map & Location
Kodli	1	07	07	0.5	unpaved	unpaved	Leasee	Enclosed
Rajawat	1	04	04	0.9	unpaved	unpaved	Leasee	Enclosed
Baddala	1	06	06	0.7	unpaved	unpaved	Leasee	Enclosed
Baddala	1	07	07	3.2	unpaved	unpaved	Leasee	Enclosed
Baddala	1	03	03	0.3	unpaved	unpaved	Leasee	Enclosed
Morasa	1	05	05	1.1	unpaved	unpaved	Leasee	Enclosed
Kharkuan	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Ambari	1	04	04	3.2	unpaved	unpaved	Leasee	Enclosed
Badi-Khattali	1	06	06	0.3	unpaved	unpaved	Leasee	Enclosed
Baldamug	1	07	07	1.1	unpaved	unpaved	Leasee	Enclosed
Davri	1	03	03	0.8	unpaved	unpaved	Leasee	Enclosed
Chhoti Vegalgaon	1	05	05	0.5	unpaved	unpaved	Leasee	Enclosed
Chhoti Vegalgaon	1	06	06	0.9	unpaved	unpaved	Leasee	Enclosed
Bhordiya	1	07	07	0.7	unpaved	unpaved	Leasee	Enclosed
Rawdi	1	03	03	3.2	unpaved	unpaved	Leasee	Enclosed
Sajanpur-1	1	05	05	0.3	unpaved	unpaved	Leasee	Enclosed
Sajapur-2	1	06	06	1.1	unpaved	unpaved	Leasee	Enclosed
Akola-1	1	04	04	0.8	unpaved	unpaved	Leasee	Enclosed
Akola-2	1	06	06	3.2	unpaved	unpaved	Leasee	Enclosed
Bijoriya-1	1	07	07	0.3	unpaved	unpaved	Leasee	Enclosed
Bijoriya-2	1	03	03	1.1	unpaved	unpaved	Leasee	Enclosed
Moriyagaon	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Chandpur	1	07	07	3.2	unpaved	unpaved	Leasee	Enclosed

Akela

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Paryavaran Parisar
5, Arera Colony, Bhopal (M.P.)

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

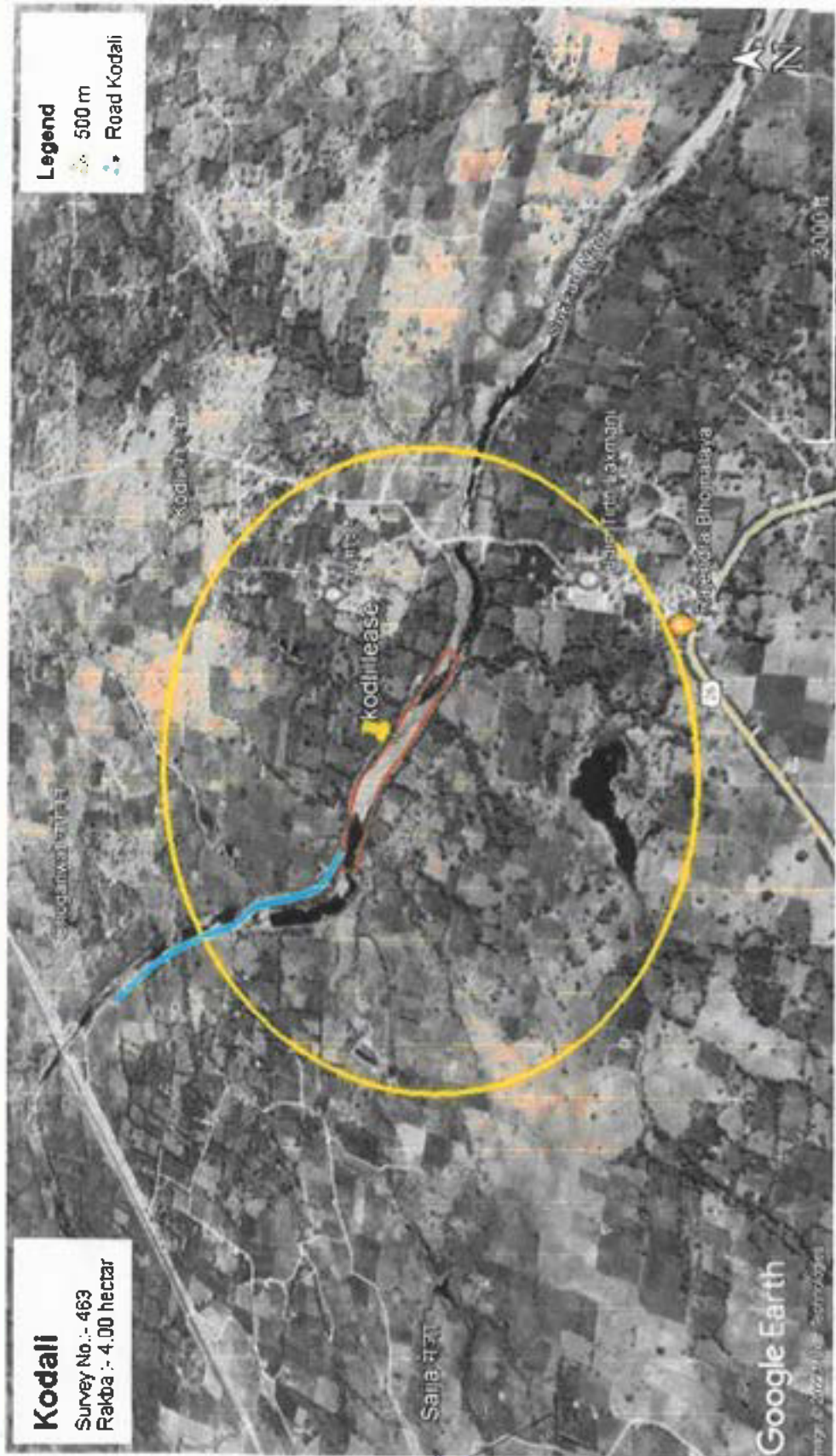
Guda-1	1	03	03	0.3	unpaved	unpaved	Leasee	Enclosed
Guda-2	1	05	05	1.1	unpaved	unpaved	Leasee	Enclosed
Pratappura	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Panala-1	1	07	07	0.5	unpaved	unpaved	Leasee	Enclosed
Panala-2	1	03	03	0.9	unpaved	unpaved	Leasee	Enclosed
Falyamau-1	1	05	05	0.8	unpaved	unpaved	Leasee	Enclosed
Falyamau-2	1	06	06	0.5	unpaved	unpaved	Leasee	Enclosed
Aagalgota-1	1	04	04	0.9	unpaved	unpaved	Leasee	Enclosed
Aagalgota-2	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Arthhi-1	1	07	07	3.2	unpaved	unpaved	Leasee	Enclosed
Arthhi-2	1	05	05	0.3	unpaved	unpaved	Leasee	Enclosed
Aagalgota-3	1	06	06	1.1	unpaved	unpaved	Leasee	Enclosed
Aagalgota-4	1	07	07	0.8	unpaved	unpaved	Leasee	Enclosed
Aagalgota-5	1	03	03	0.5	unpaved	unpaved	Leasee	Enclosed
Kadvaliya	1	05	05	0.9	unpaved	unpaved	Leasee	Enclosed
Chandpur-1	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Chandpur-2	1	07	07	0.5	unpaved	unpaved	Leasee	Enclosed
Chandpur-3	1	03	03	0.9	unpaved	unpaved	Leasee	Enclosed
Chandpur-4	1	05	05	0.5	unpaved	unpaved	Leasee	Enclosed
Akola	1	06	06	0.9	unpaved	unpaved	Leasee	Enclosed
Mehani	1	04	04	0.8	unpaved	unpaved	Leasee	Enclosed
Vakneri	1	06	06	0.5	unpaved	unpaved	Leasee	Enclosed
Andharkach	1	07	07	0.9	unpaved	unpaved	Leasee	Enclosed
Nichavas	1	05	05	1.1	unpaved	unpaved	Leasee	Enclosed
Bholvat	1	06	06	0.8	unpaved	unpaved	Leasee	Enclosed
Aamkhut	1	03	03	0.5	unpaved	unpaved	Leasee	Enclosed


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 (EPCO)
 Paryavaran Parisar
 E-5, Arera Colony, Bhopal (M.P.)

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Route and Location Map of Kodali



Ashwini
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Assessment Authority, M.P.
(EPCO)
Bhopal, Madhya Pradesh
(M.P.)

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प्रधारी अधिकारी

अग्निज शाखा जिला - अलीराजपुर

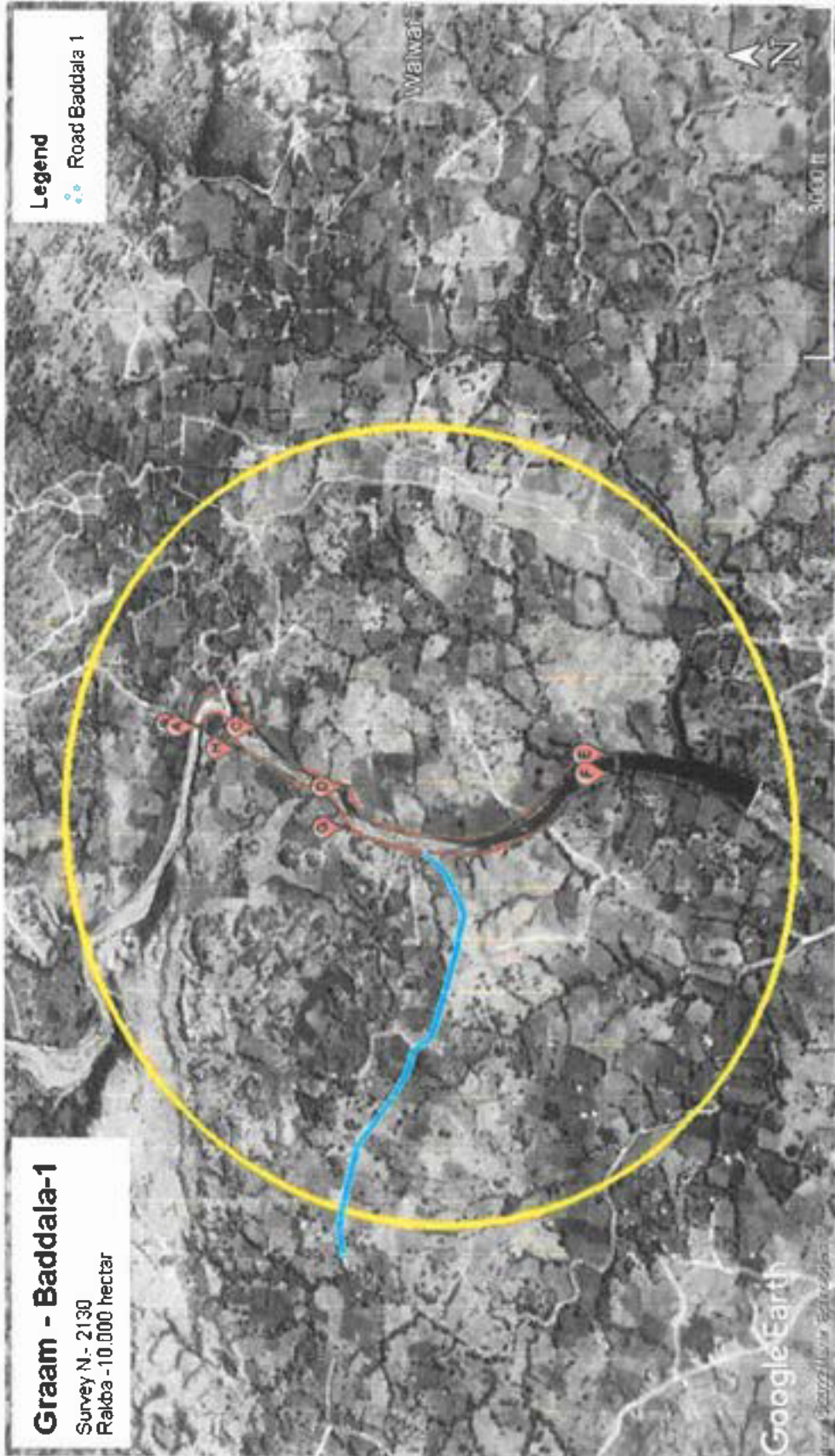
Route and Location Map of Rajawat



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प्रभासी अधिकाारी
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Arata
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Bharwanan Parisar
Bhopal (M.P.)

Route and Location Map of Baddala-1

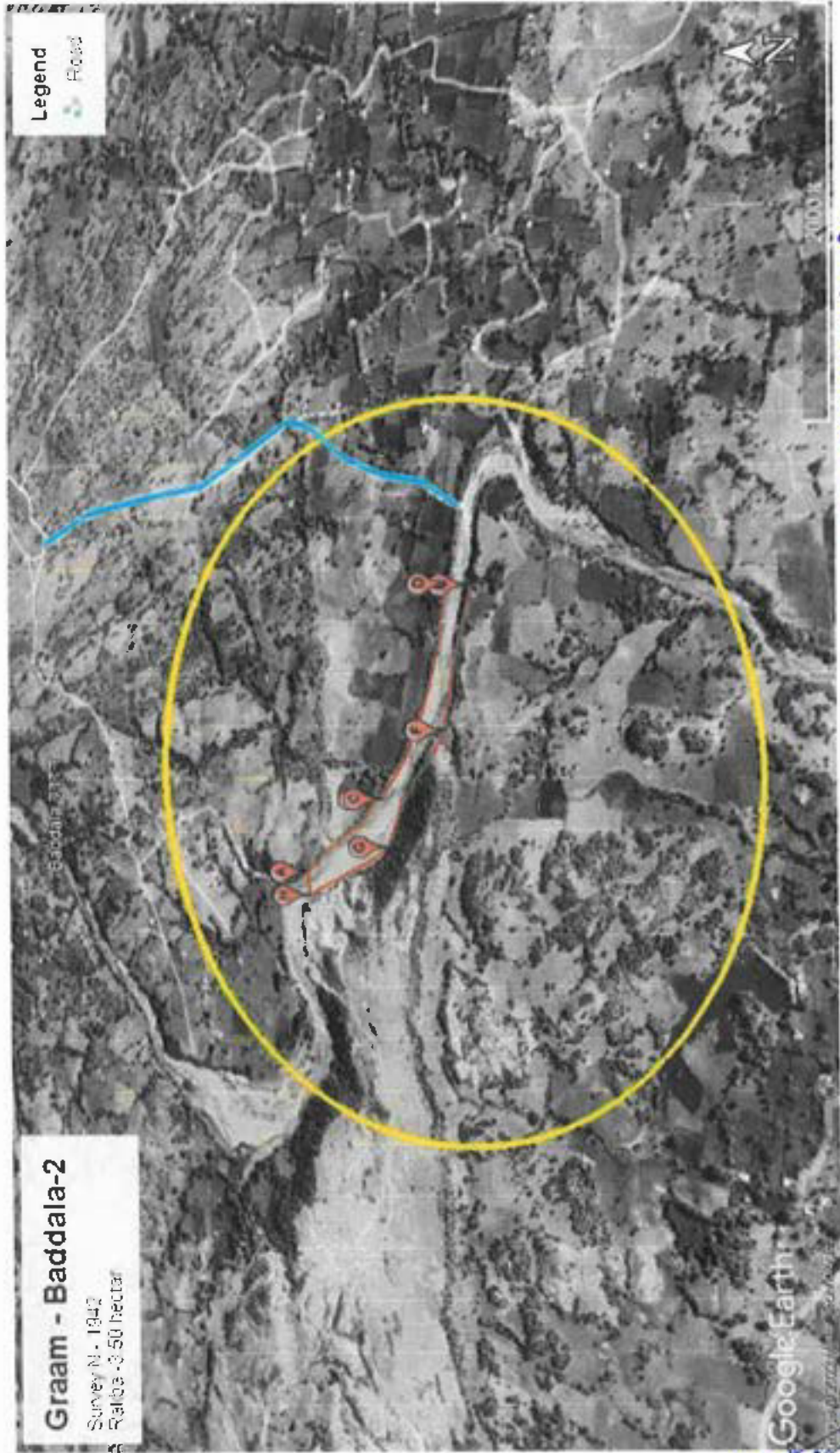


अभिमत समिति द्वारा तैयार एवं मस्यारित

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अनिज शाखा जिला-अलीराजपुर

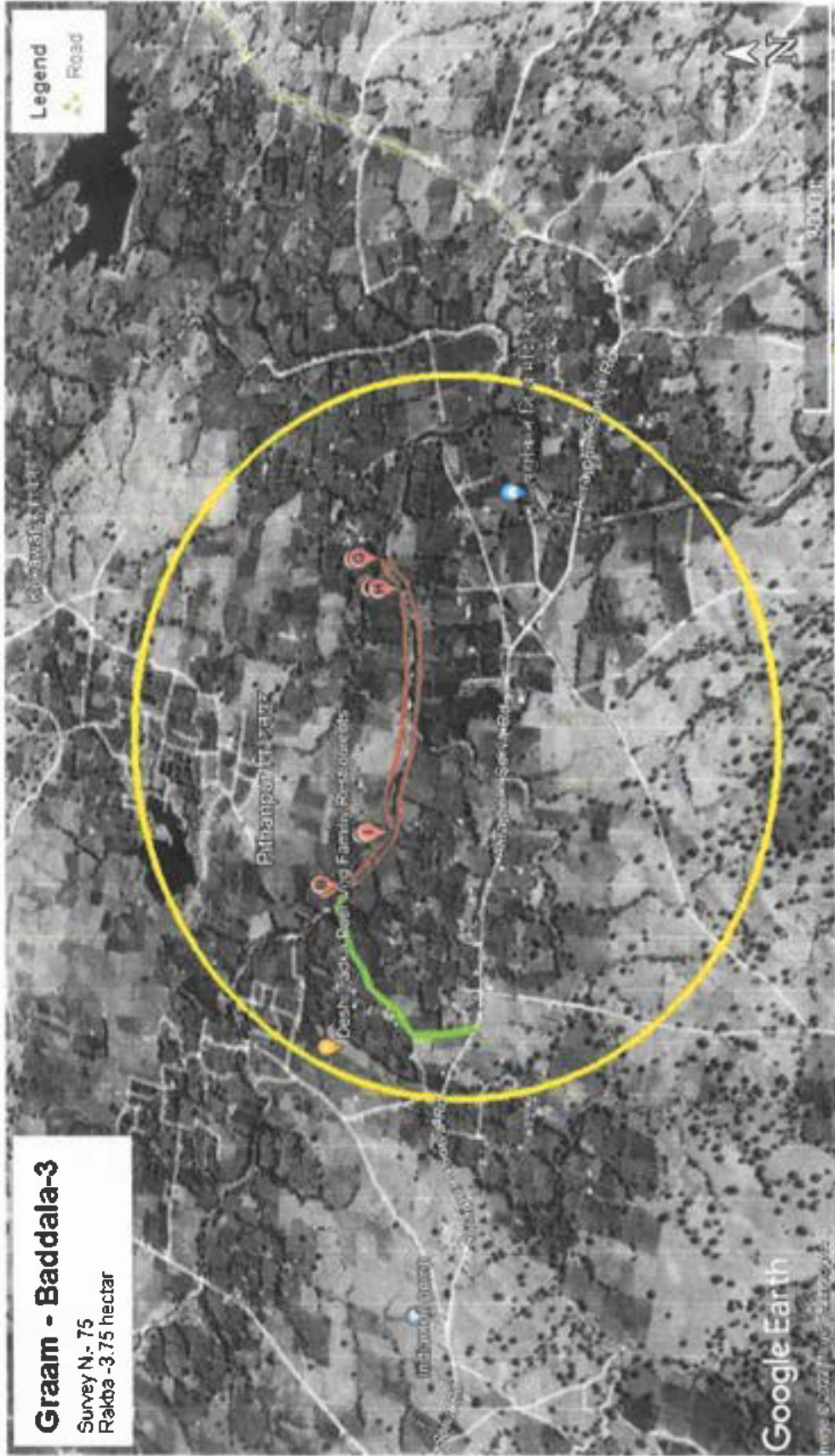
Arjun
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Farvevaran Farisar
E-5, J... .., Bhopal (M.P.)

Route and Location Map of Baddala-2



Aravind
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Daxsharath, Parisar
Bhopal, M.P.

Route and Location Map of Baddala-3



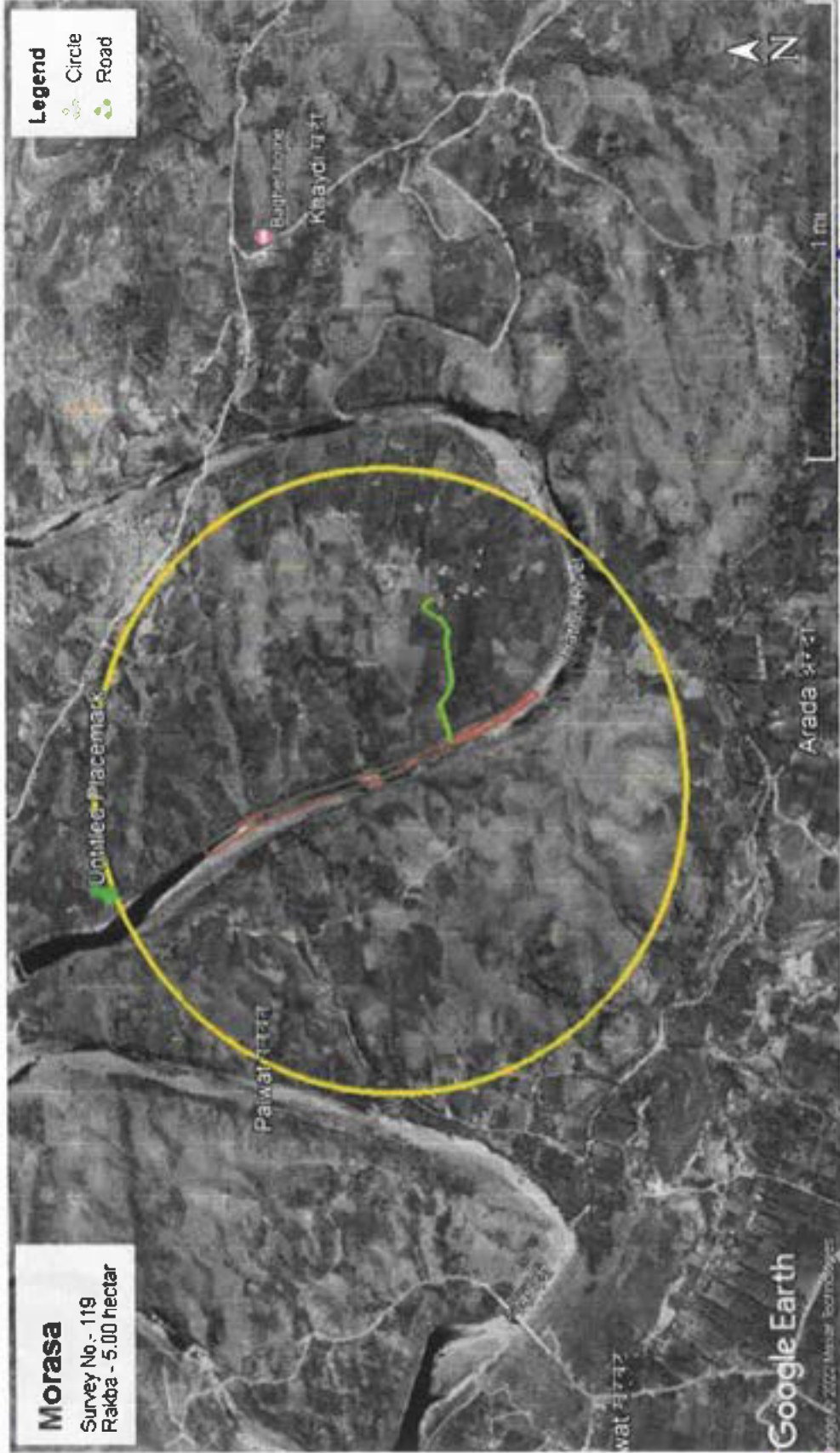
अधिकृत समिति द्वारा देया एवं सत्यापित

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A. K. Sharma
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Darvavarani Parisar
C-5, Ashok Vihar, Bhopal (M.P.)

Route and Location Map of Morasa



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प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

Autor
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Assessment Authority, M.P.
(EPCO)
Bhavavaran Parkar
E.P. Colony, Bhopal (M.P.)

Route and Location Map of Kharkuaa



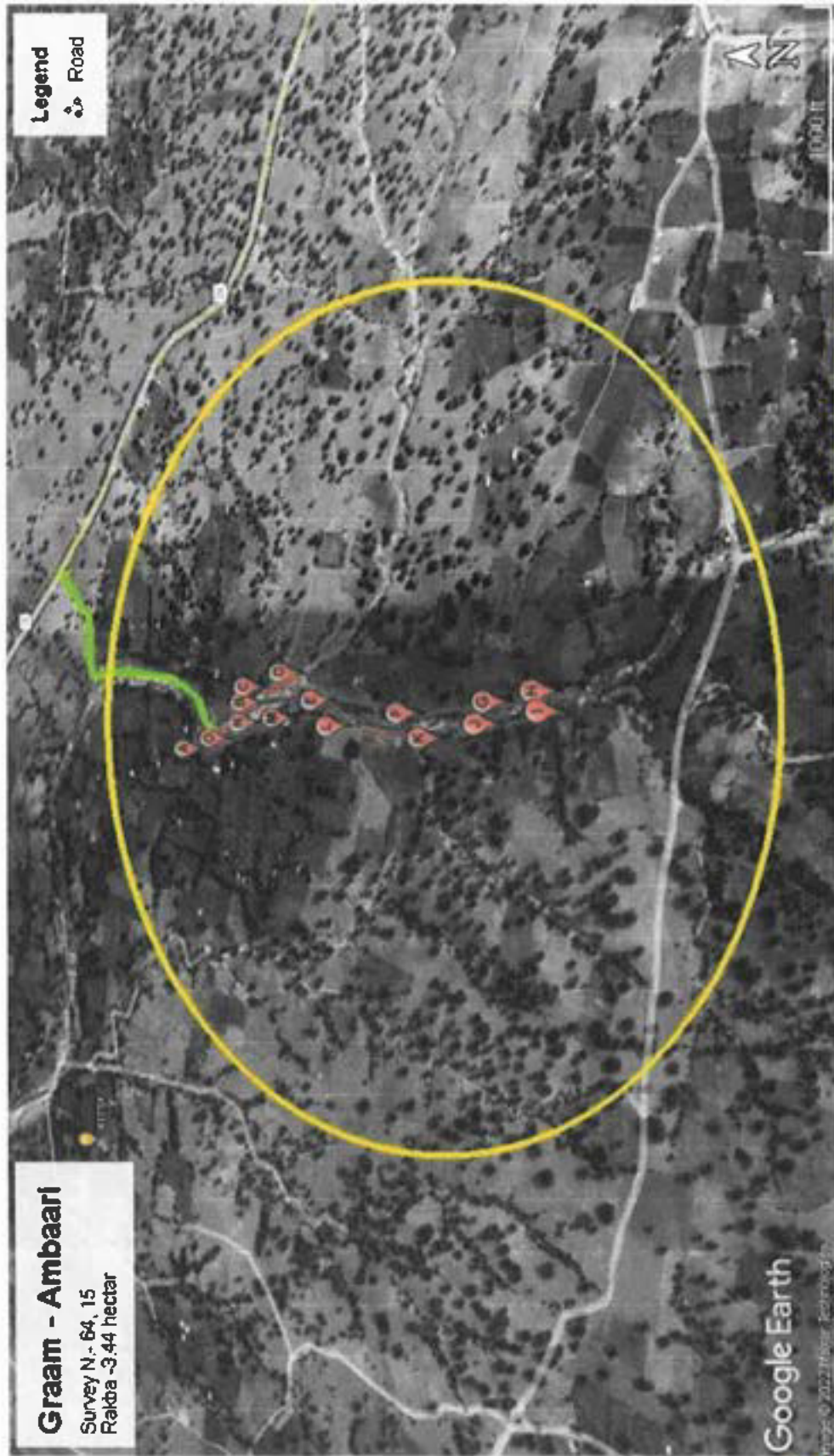
Graam - Kharkuan
Survey N - 1388
Rakba - 7.00 hectar

Legend
Road

अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
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Antony
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Assessment Authority, M.P.
(EPCO)
Parvavaran Parisar
E-5, Ar. ny. Bhopal (M.P.)

Route and Location Map of Ambari



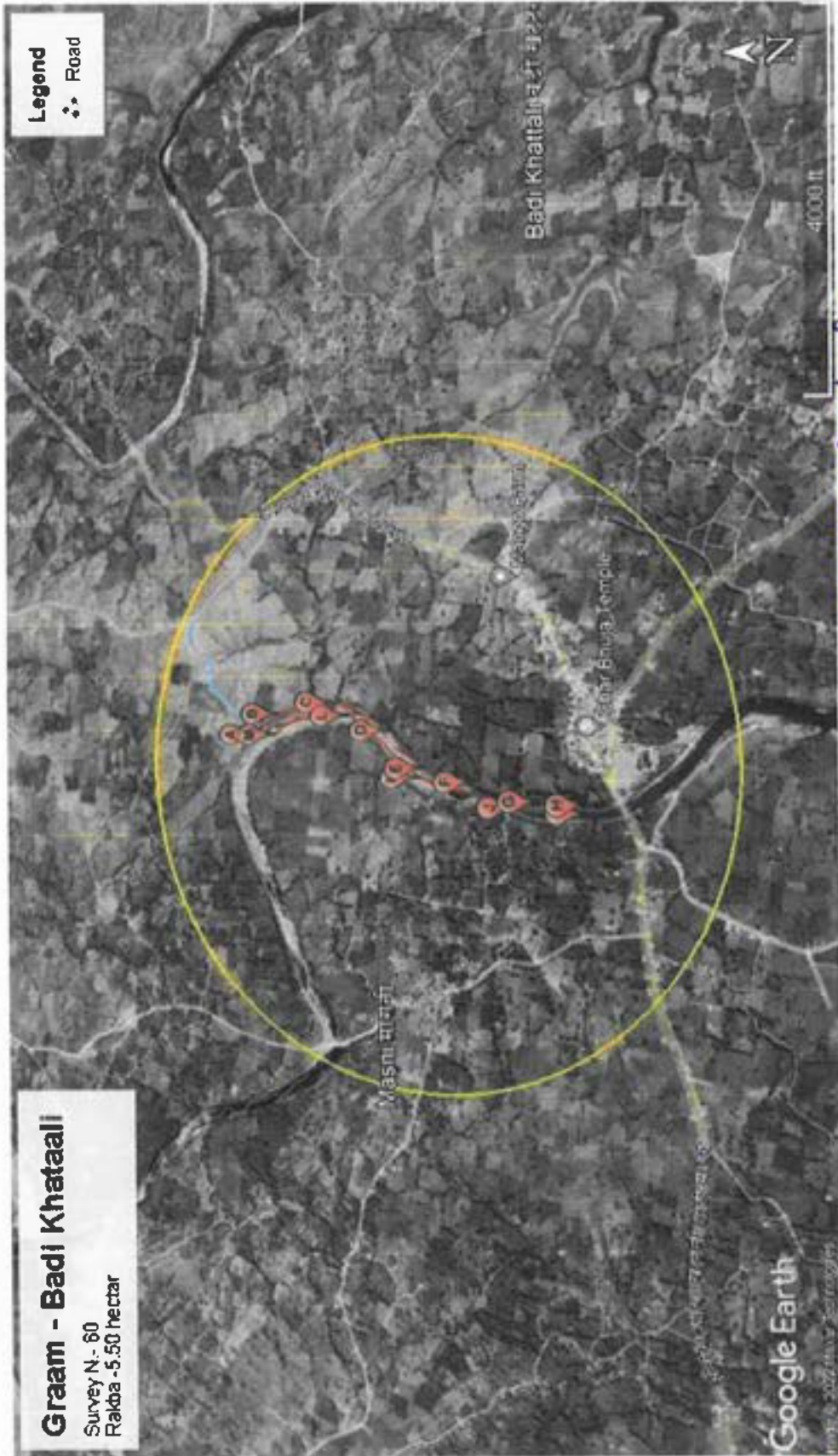
अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

अनिज शाखा जिला-अलीराजपुर

Atkhan
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Assessment Authority, M.P.
(EPCO)
Paryevaran Parisar
E-5, A-1, G. Ind. Colony, Bhopal (M.P.)

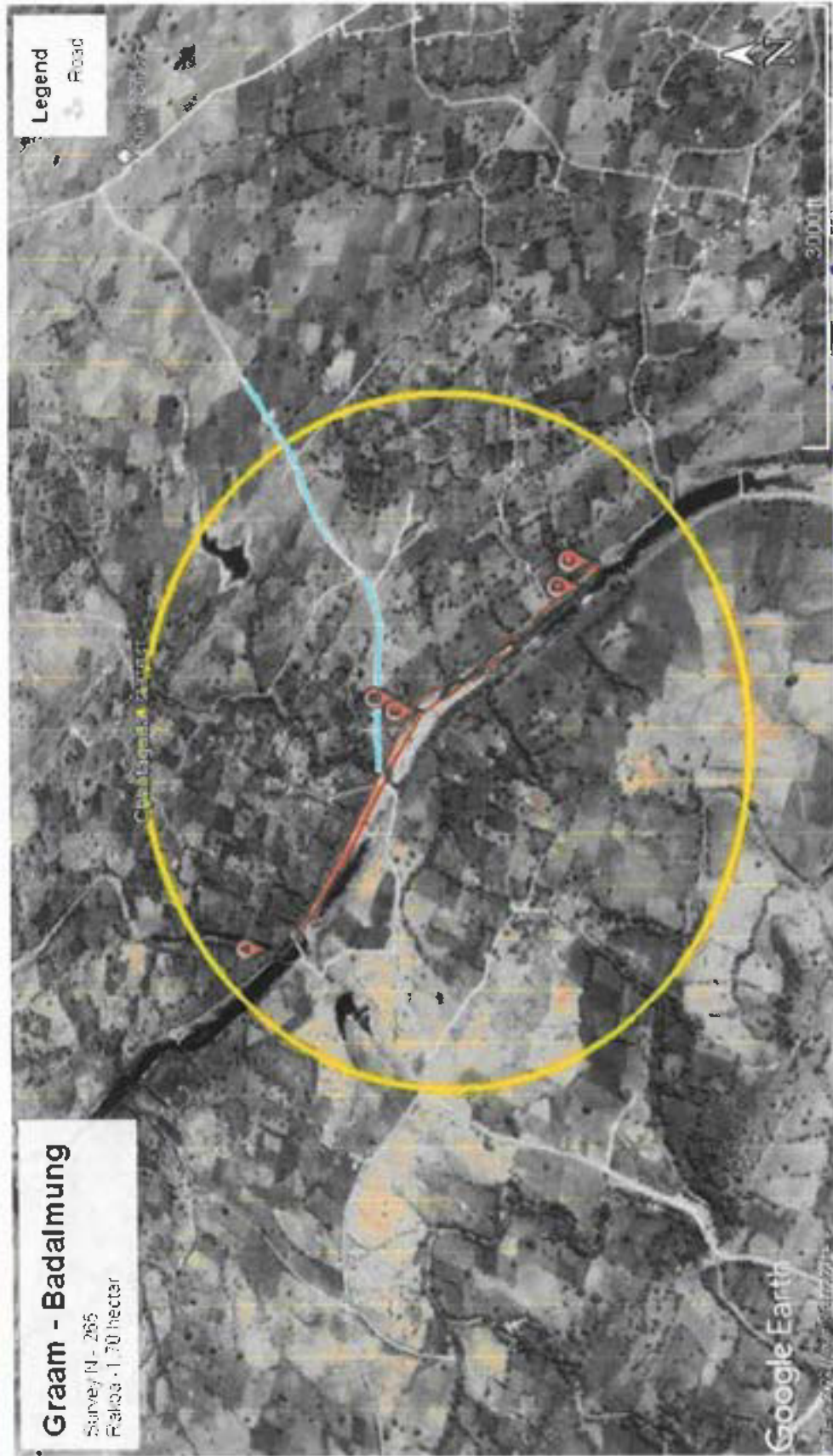
Route and Location Map of Badi Khattali



अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी
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Route and Location Map of Baladmung



Graam - Badalmung

Survey No - 265

Rakoo - 1.70 hecter

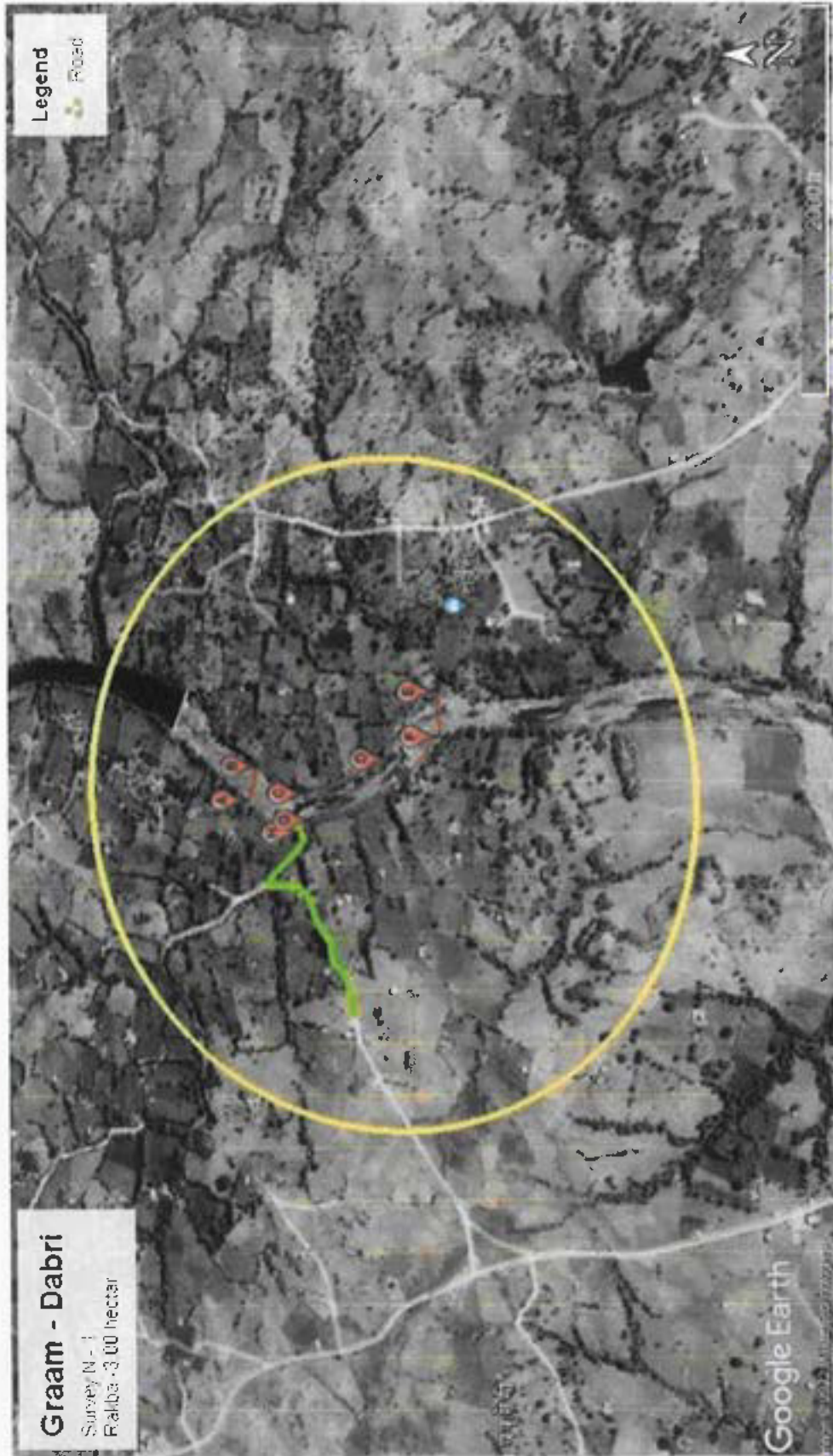
अधिकृत समिति द्वारा तैयार एवं सत्यापित

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खनिज शाखा जिला-अलीराजपुर

A. Sharma
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Aruna Colony, Bhopal (M.P.)

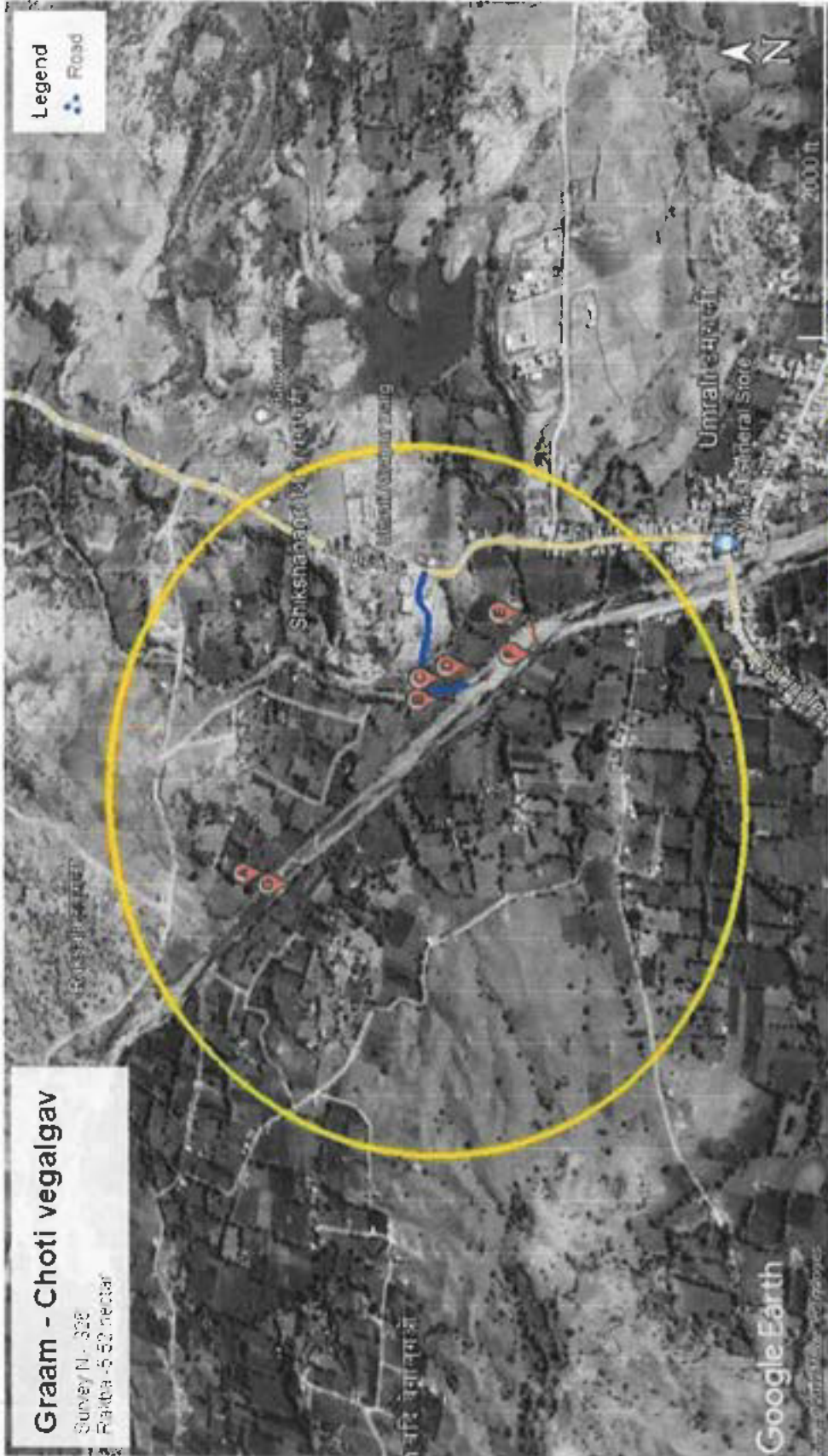
Route and Location Map of Davri



अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
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A. K. Singh
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parishad
B-5, Panchsheel Colony, Bhopal (M.P.)

Route and Location Map of Choti Vegalganv-1



अधिकृत समिति द्वारा तैयार एवं सत्यापित है

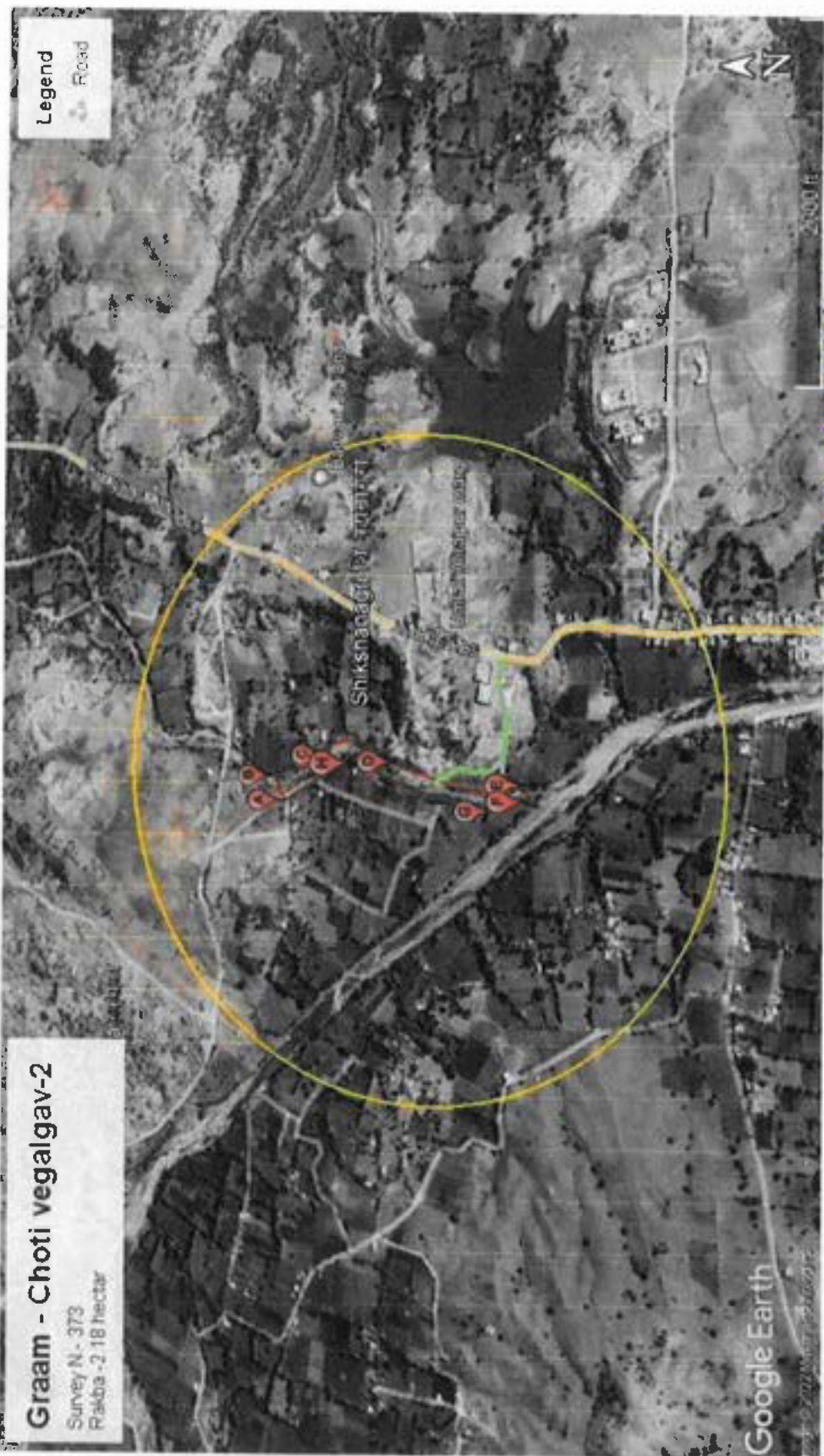
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खनिज शाखा जिला-अलीराजपुर

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Assessment Authority, M.P.
(EPCO)
Bhawanjyoti, Parisar
B-35, 1st Floor, B-35, 1st Floor (M.P.)

Ashtar

Route and Location Map of Choti Vegalgav-2



अधिकृत समिति द्वारा तैयार एवं सत्यापित

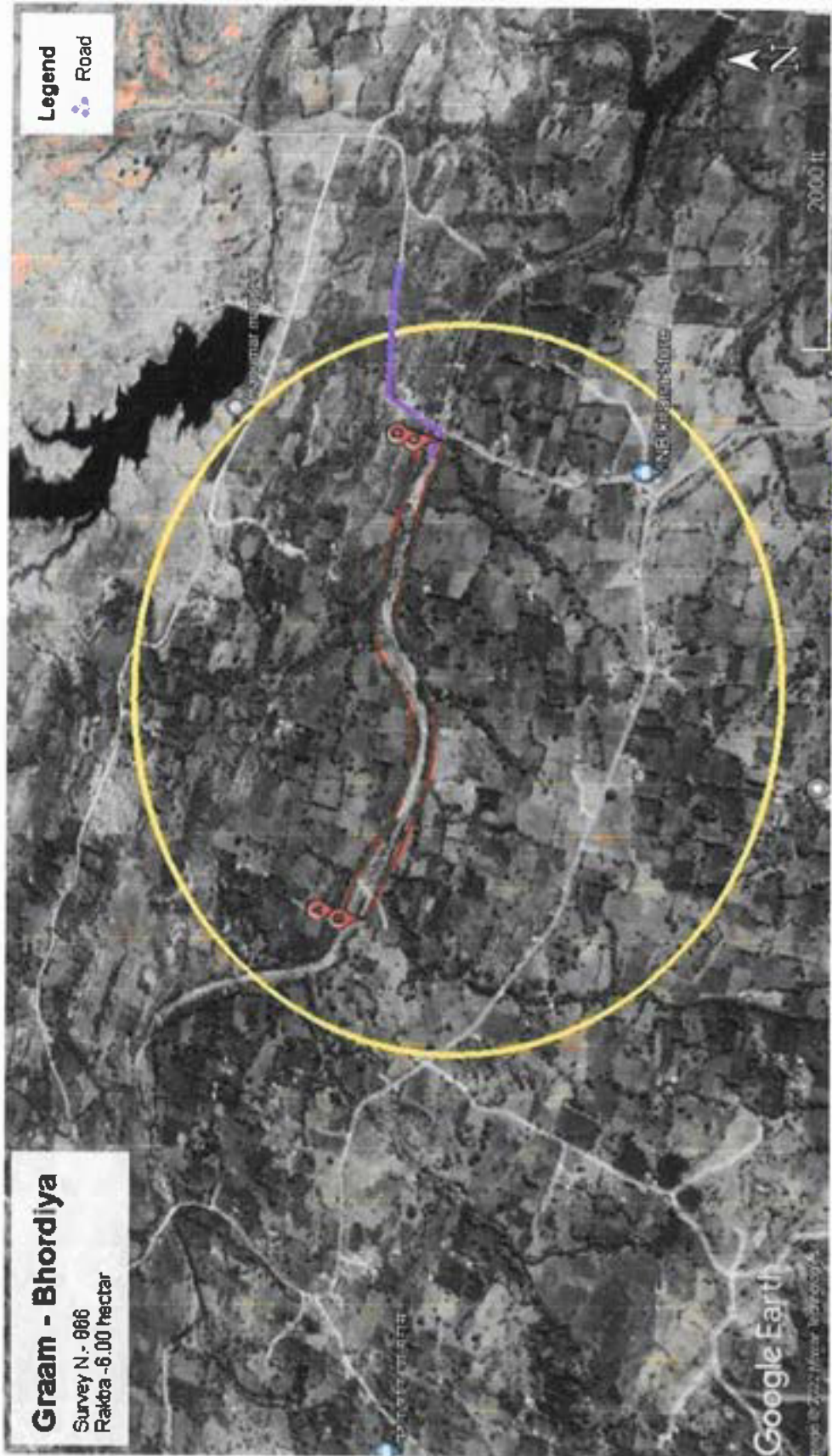
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Aretam

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(EPCO)
Parvvaran Parisar
E-5, 1st Floor, Bhopal (M.P.)

Route and Location Map of Bhordiya



Graam - Bhordiya

Survey N. - 986

Rakba - 6.00 hectar

Legend

Road

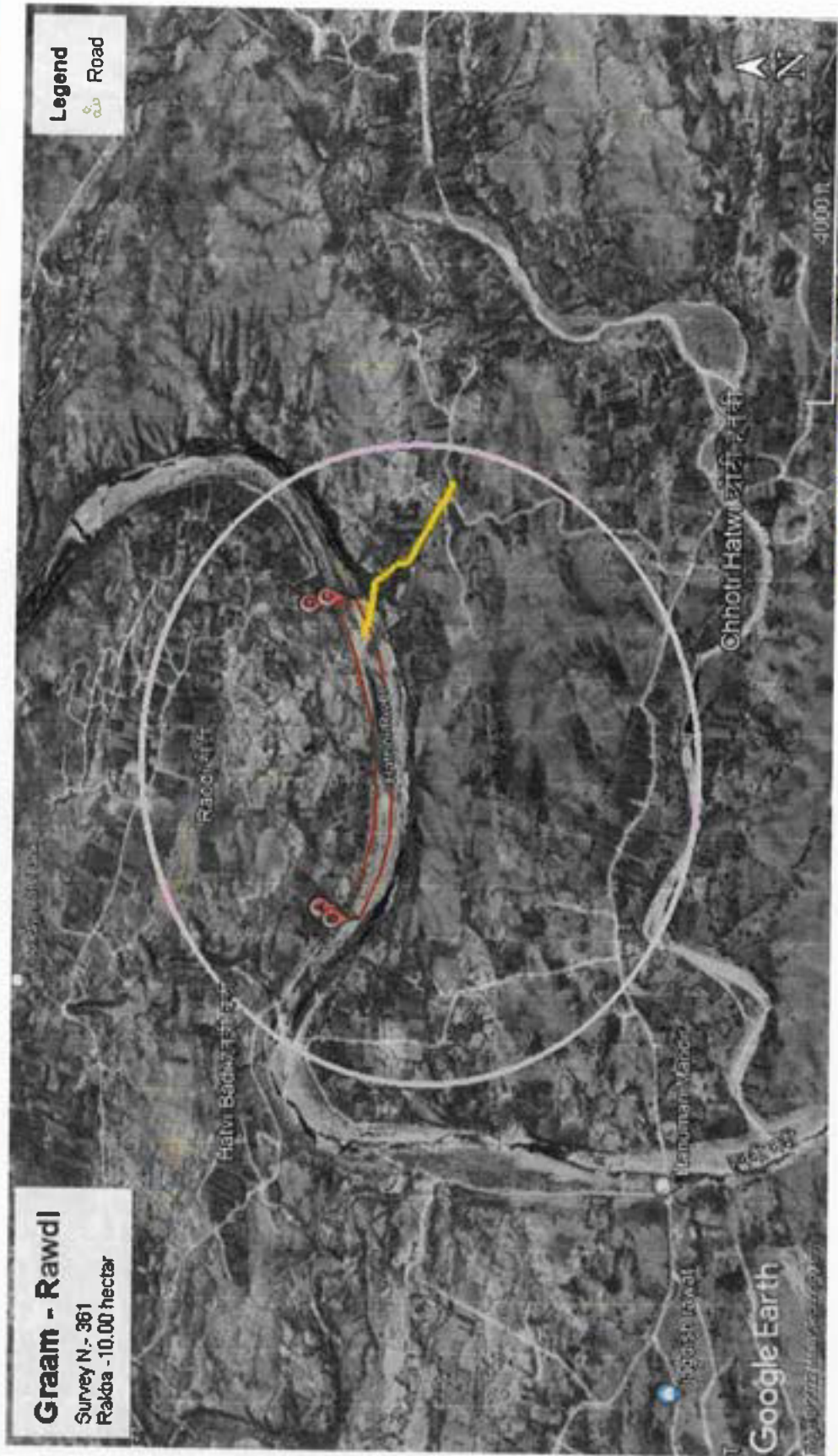
अभिकृत समिति द्रष्टु तैयार एव सत्यमित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

Devi
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arora Colony, Bhopal (M.P.)

Route and Location Map of Rawdi

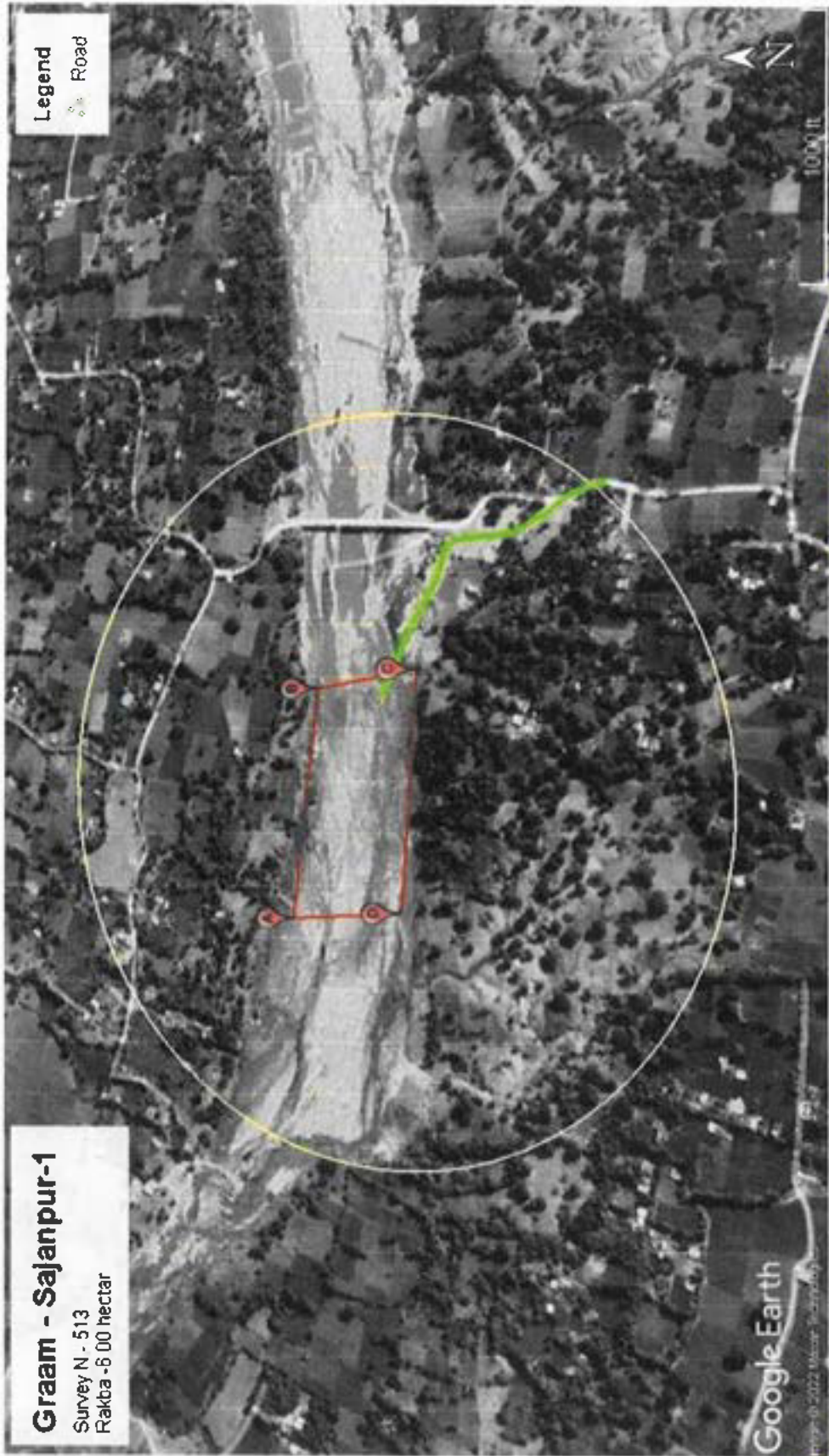


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प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

A. K. Sharma
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvavaran Parisar
E-5, Anand Colony, Bhopal (M.P.)

Route and Location Map of Sajjanpur-1



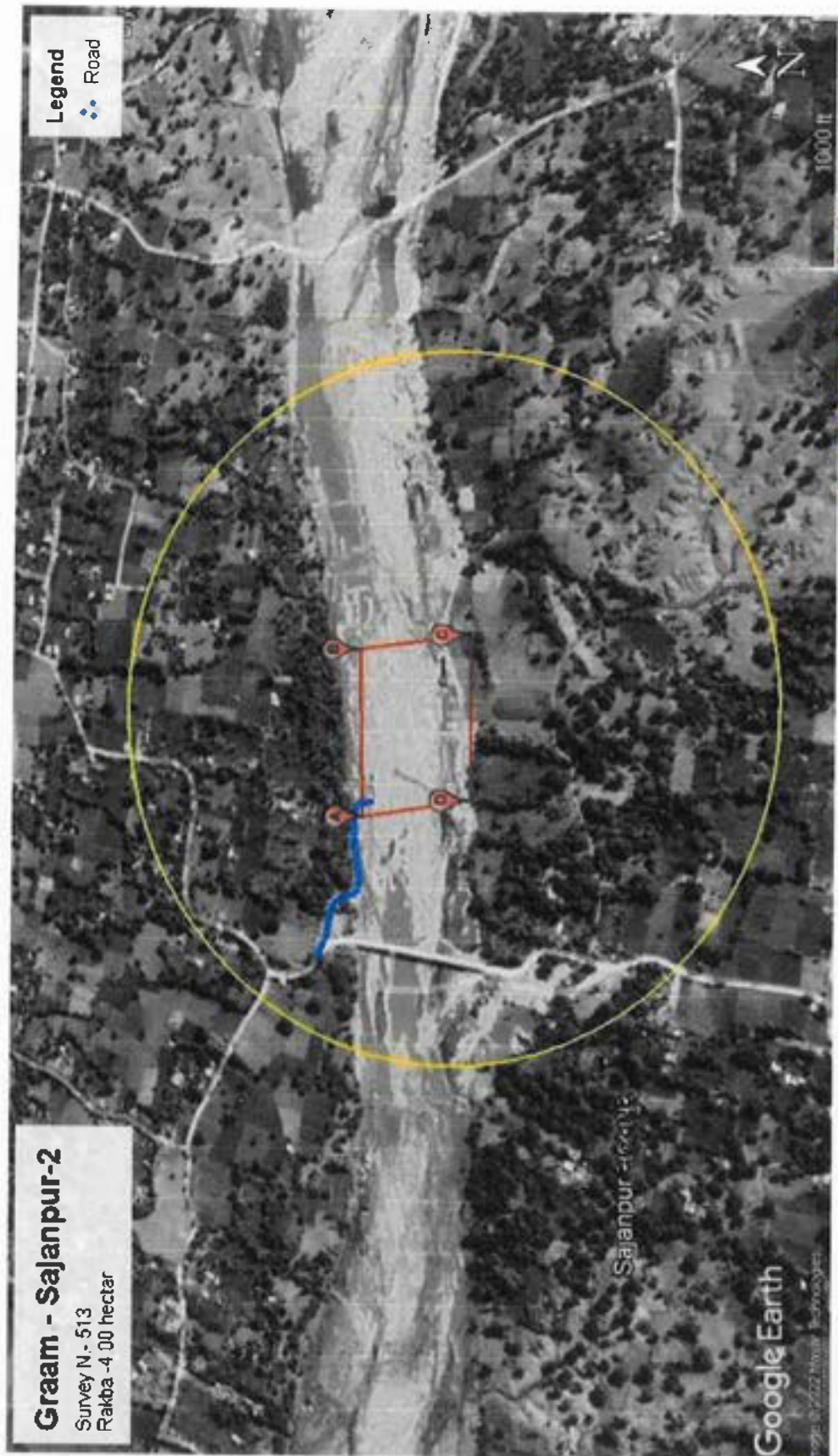
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खनिज शाखा - अलीराजपुर


State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvatan Parisar
Bhopal (M.P.)

Route and Location Map of Sajjanpur-2



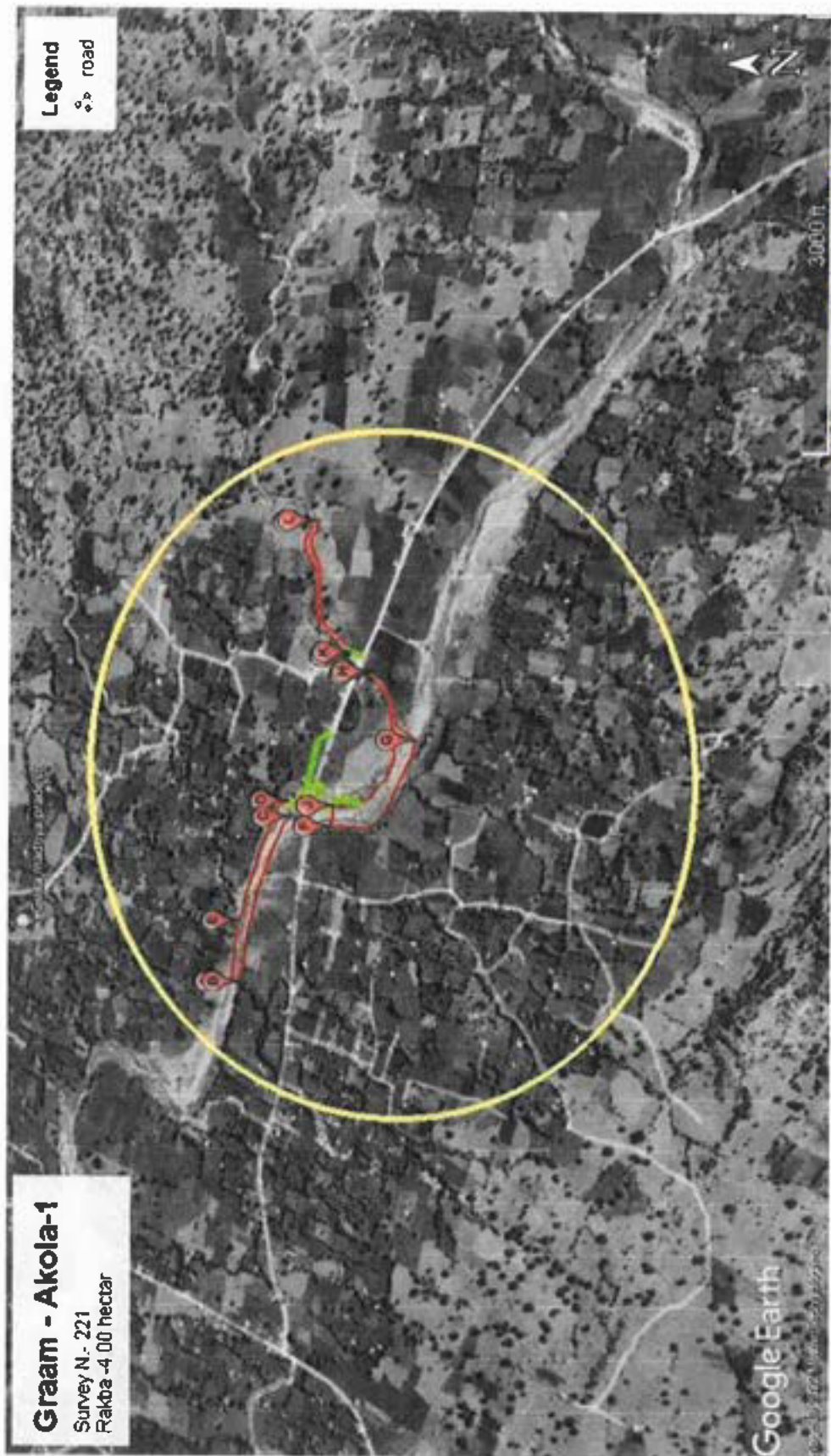
अभियुक्त समिति द्वारा तैयार एवं मत्यापित

प्रभारी अधिकारी

स्थितिज शाखा जिला-अलीराजपुर

Signature
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Akola-1

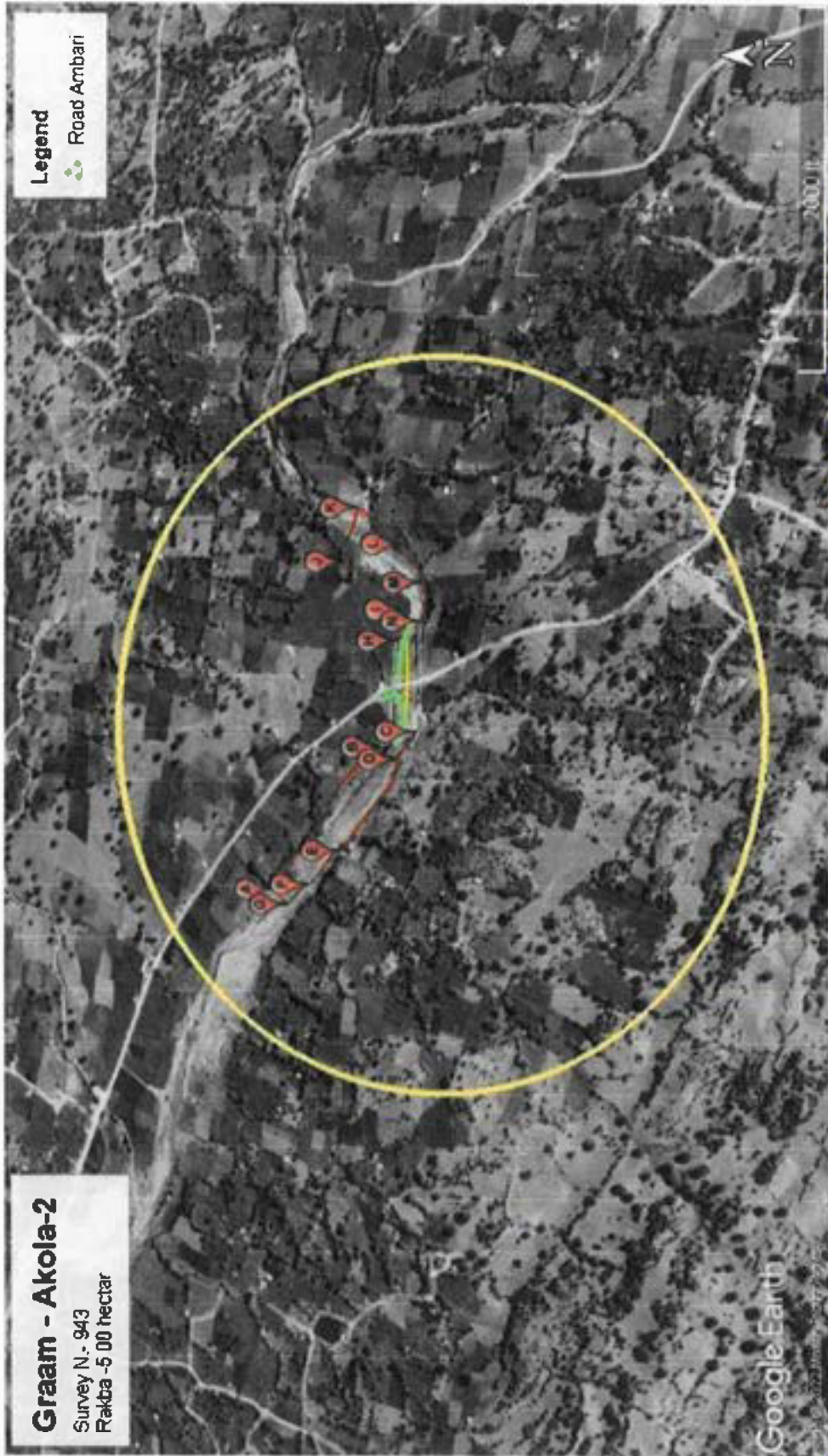


अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

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Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Akola-2



अधिकृत समिति द्वारा तैयार एवं सत्यापित

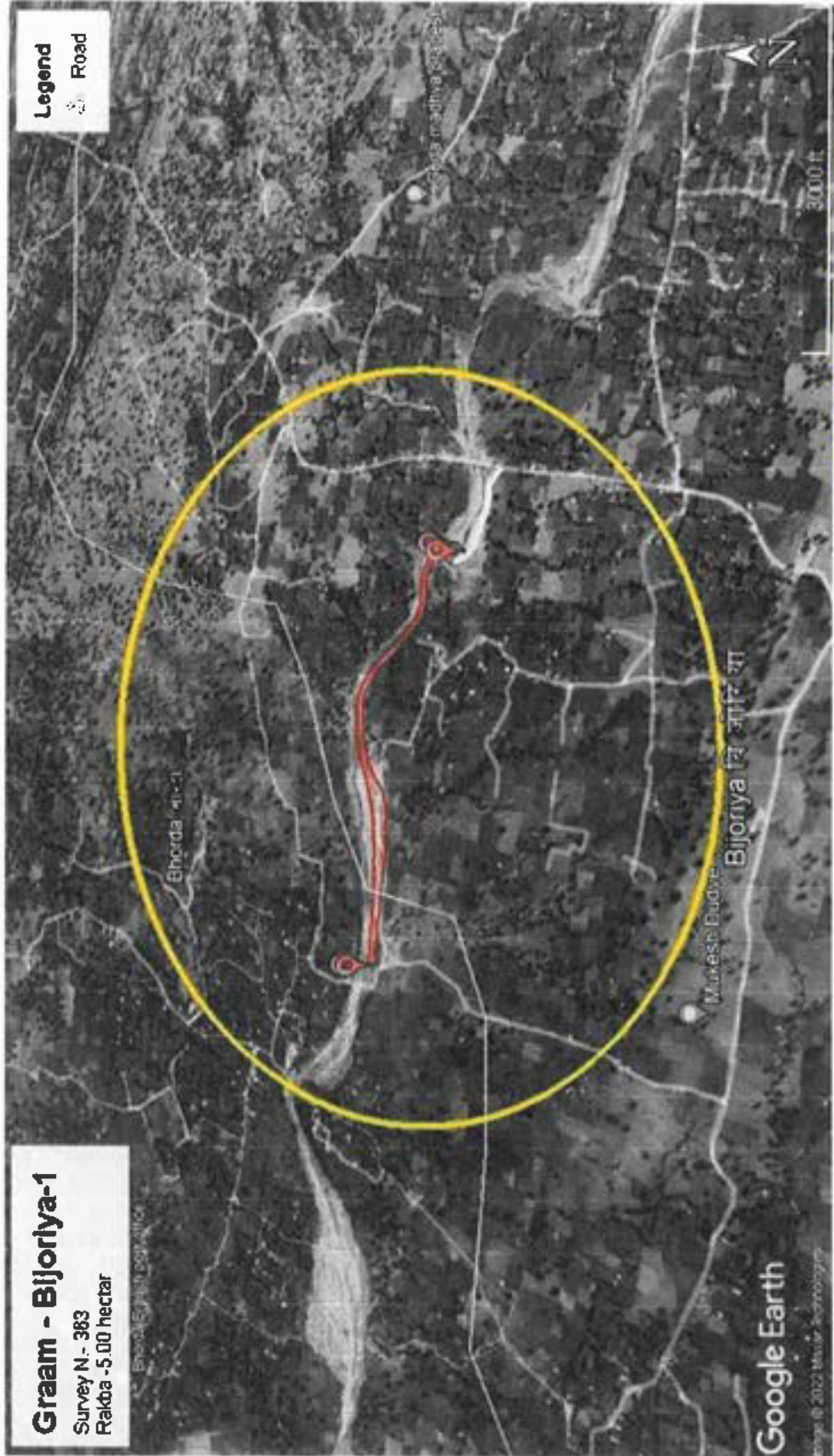
प्रभारी अधिकारी

खनिज शाखा जिला-अमरीराजपुर

A. S. Chavan

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

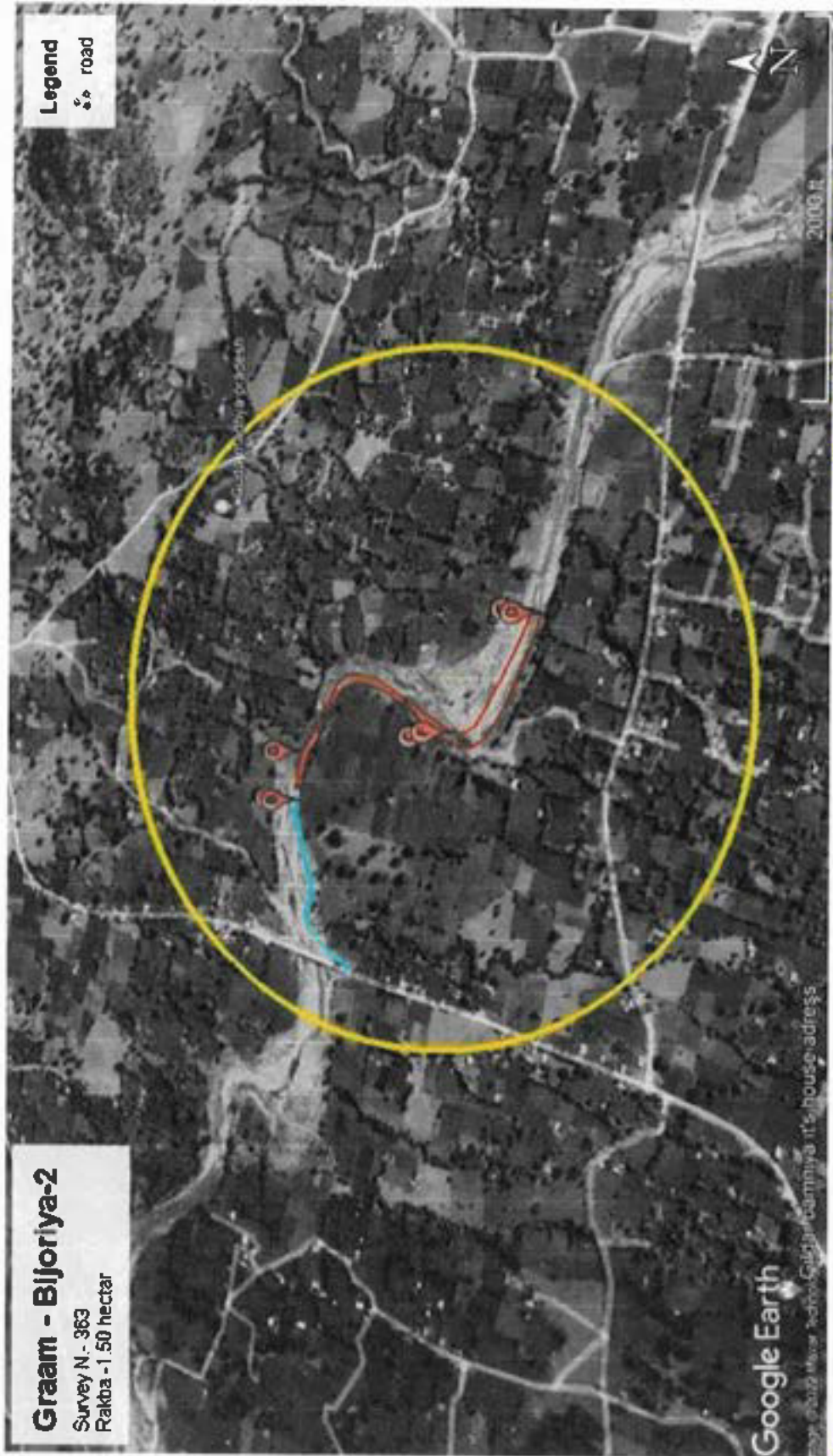
Route and Location Map of Bijoriya-1



अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
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Arjun
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Assessment Authority, M.P.
(EPCO)
Paryevaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Bijoriya-2



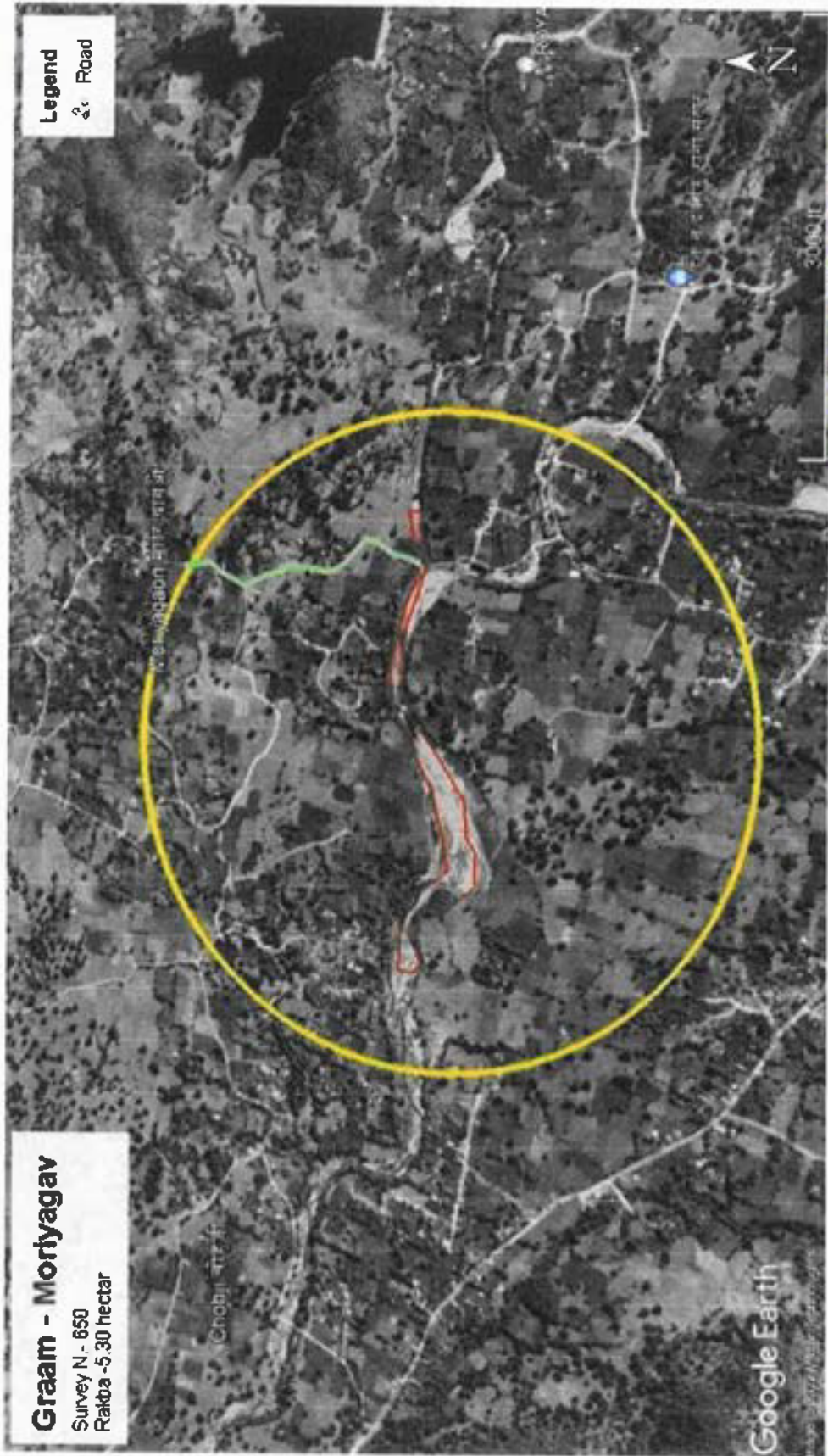
अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Moriyagaon



आभूत समिति ग्राम, नैवार एवं मत्पणित
प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

Archan

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Pariwar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Chandpur



Graam - Chandpur
Survey N- 1275
Rakba -6.00 hectar

अभियुक्त समिति द्वारा तैयार एवं मस्युपित
प्रभारी अधिकारी
खनिज शाखा जिला--अलीराजपुर

A. K. Sharma

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Guda-1



अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा सिल्ला-अलीराजपुर

Ashok

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvatan Parisar
E-5, Ashok Colony, Bhopal (M.P.)

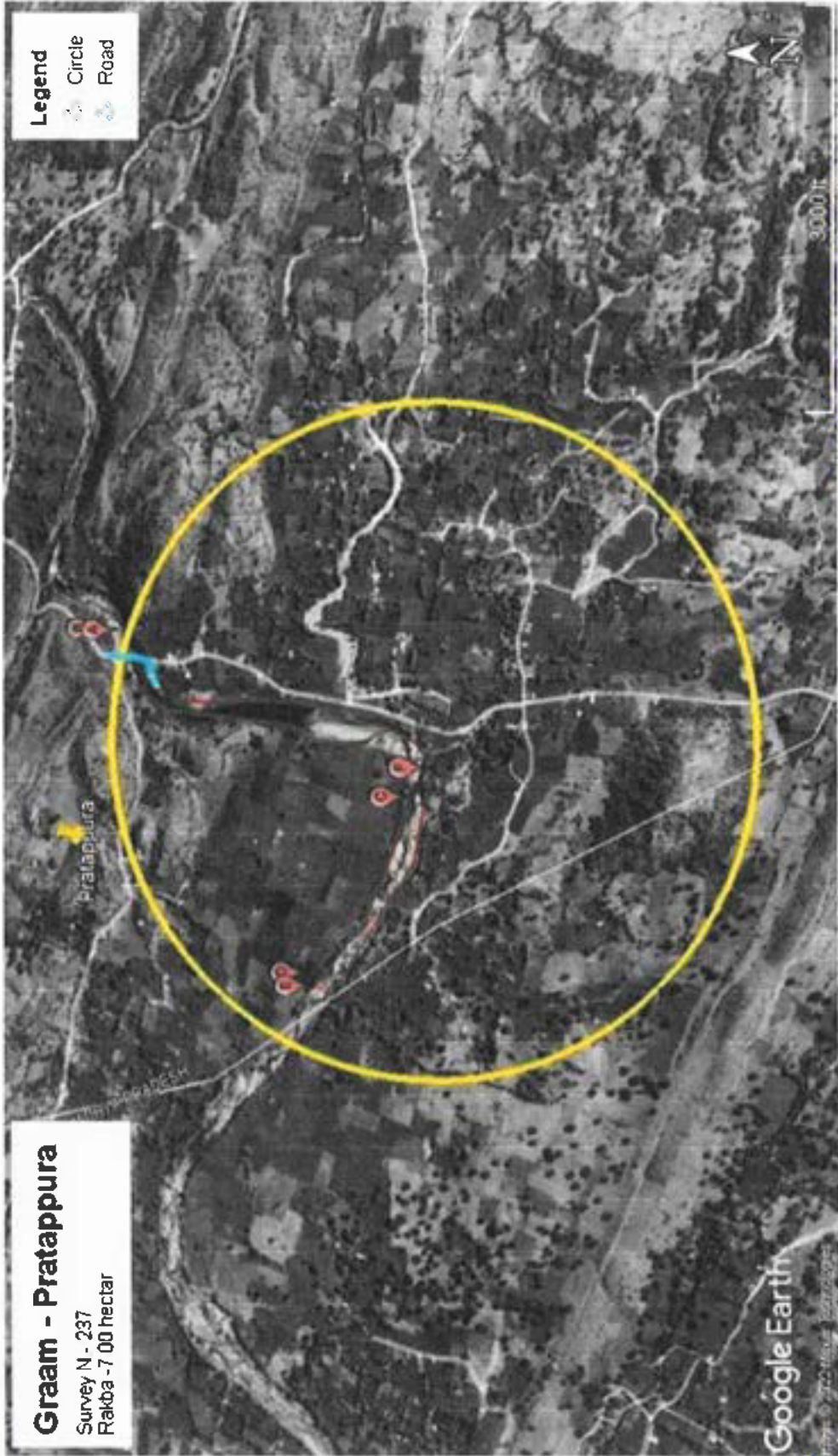
Route and Location Map of Guda-2



अधिकृत समिति दायतुवैचार एवं सत्यापित
प्रधारी अधिकासी
खनिज शाखा जिला-अलीराजपुर

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvavaran Parisar
E.F.A., Guindy, Bhopal (M.P.)

Route and Location Map of Pratappura



अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

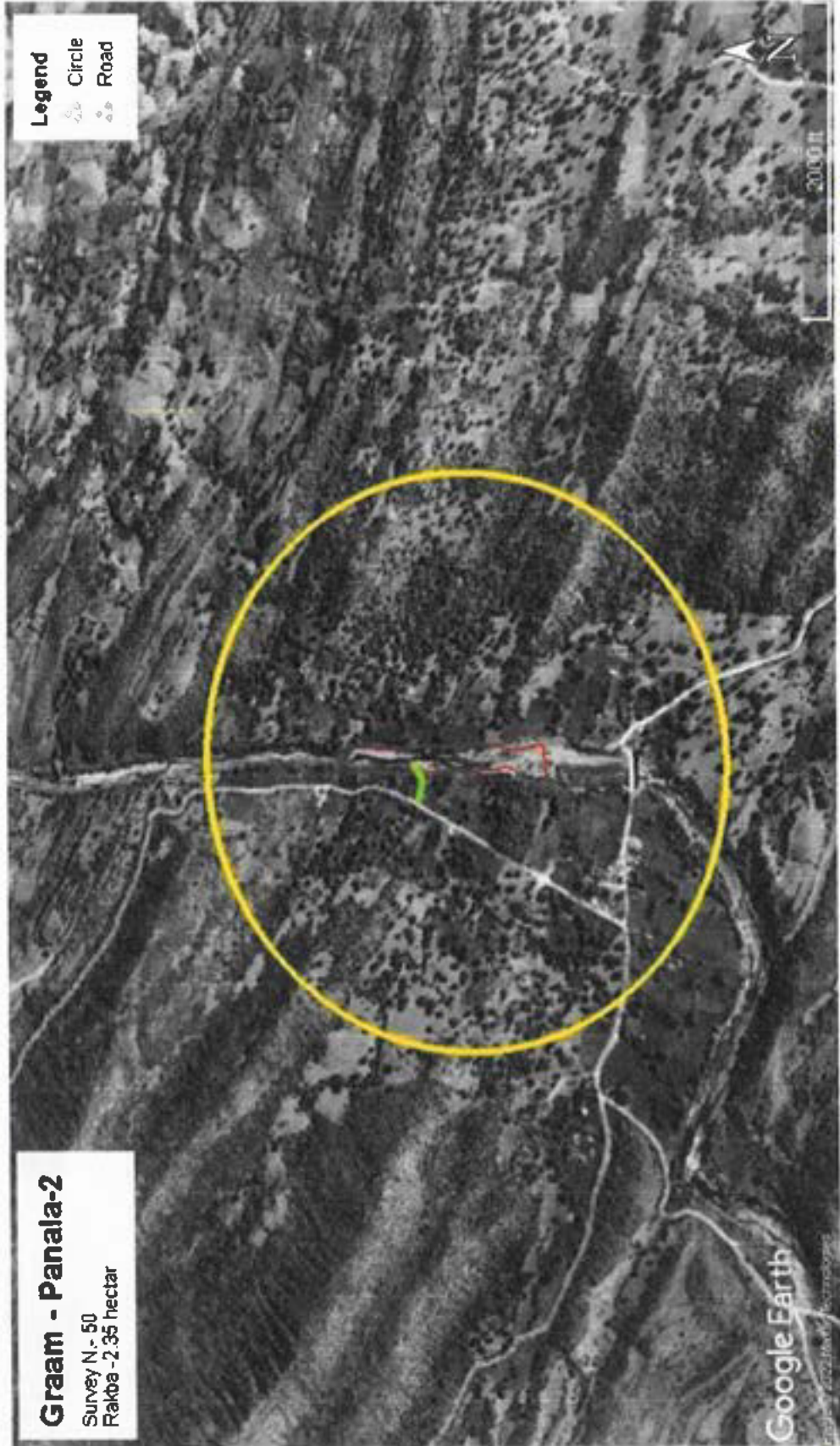
Arshon
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
F-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Panala-1



अधिकृत समिति द्वारा देया एवं सत्यापित
प्रभारी अधिकारी
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Route and Location Map of Panala-2



Graam - Panala-2

Survey N.- 50

Rakba - 2.35 hectar

Google Earth

अधिकृत समिति द्वारा किया एवं सत्यापित

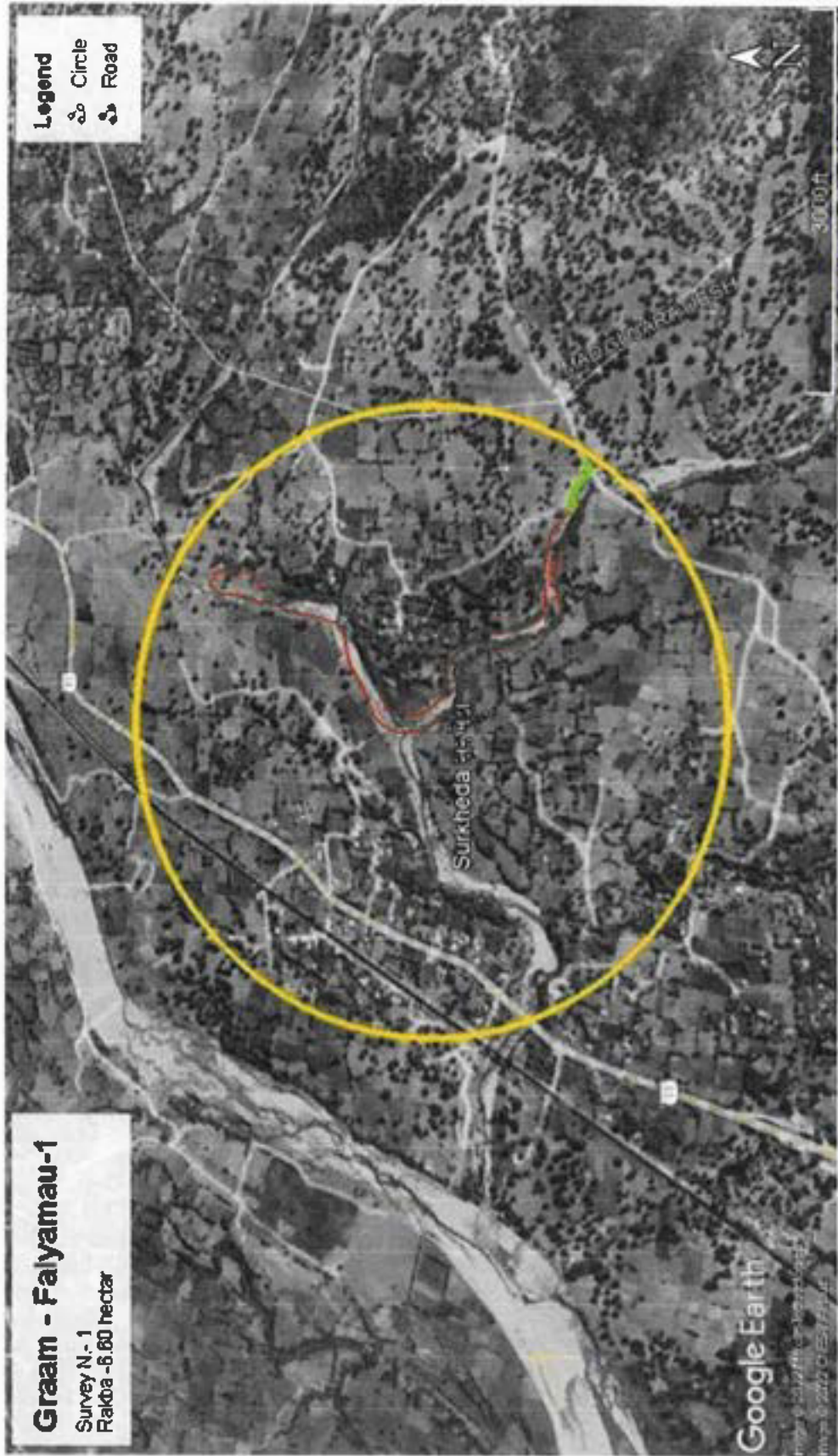
प्रभारी अधिकारी

खनिज शाखा-अलीराजपुर

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State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Faliyamau-1

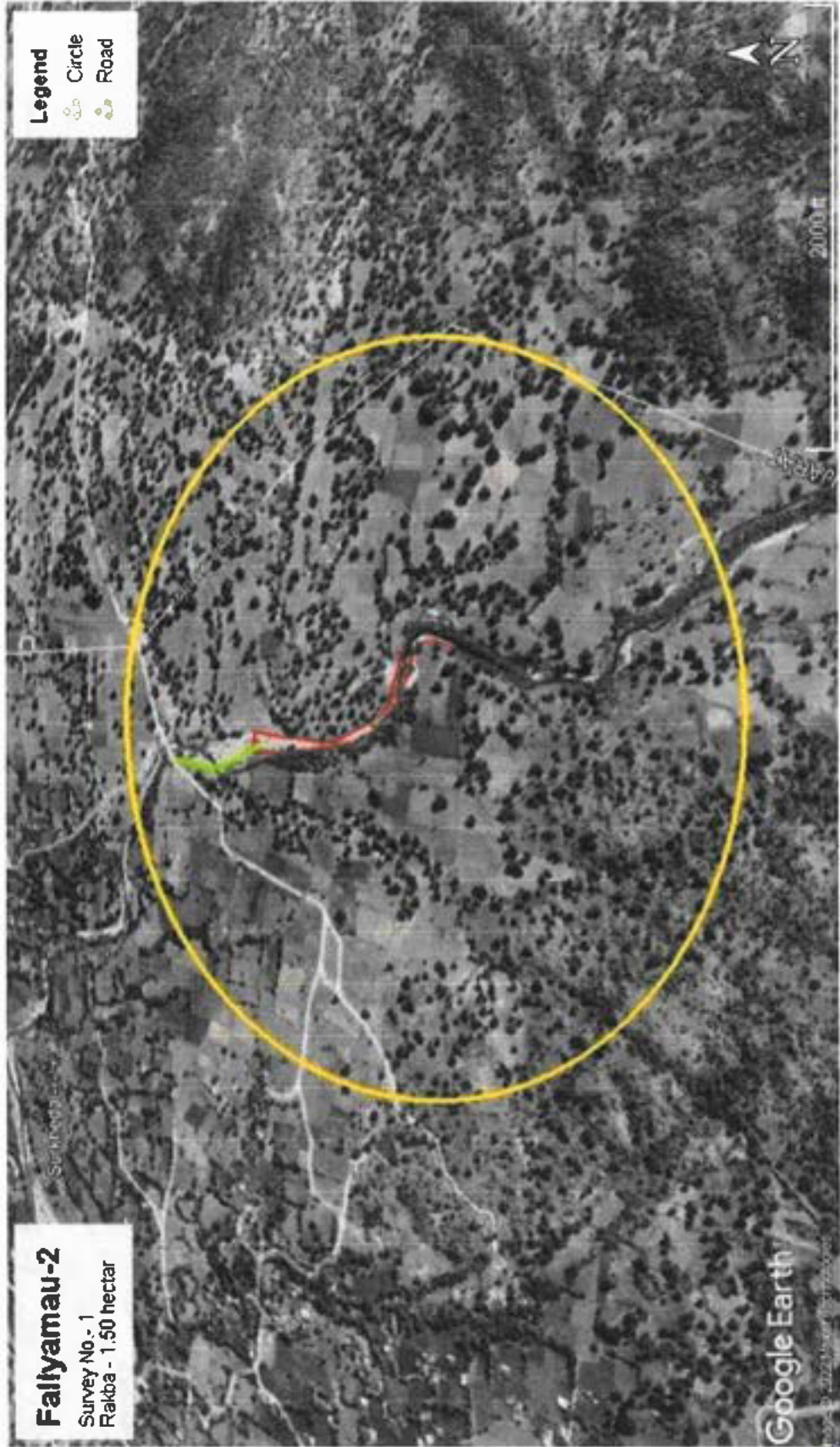


अधिकृत समिति द्वारा तैयार एवं सत्यापित

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खनिज शाखा जिला-अलीराजपुर

Ashta
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Paryavaran Parisar
E-5, Anand Colony, Bhopal (M.P.)

Route and Location Map of Faliyamau-2



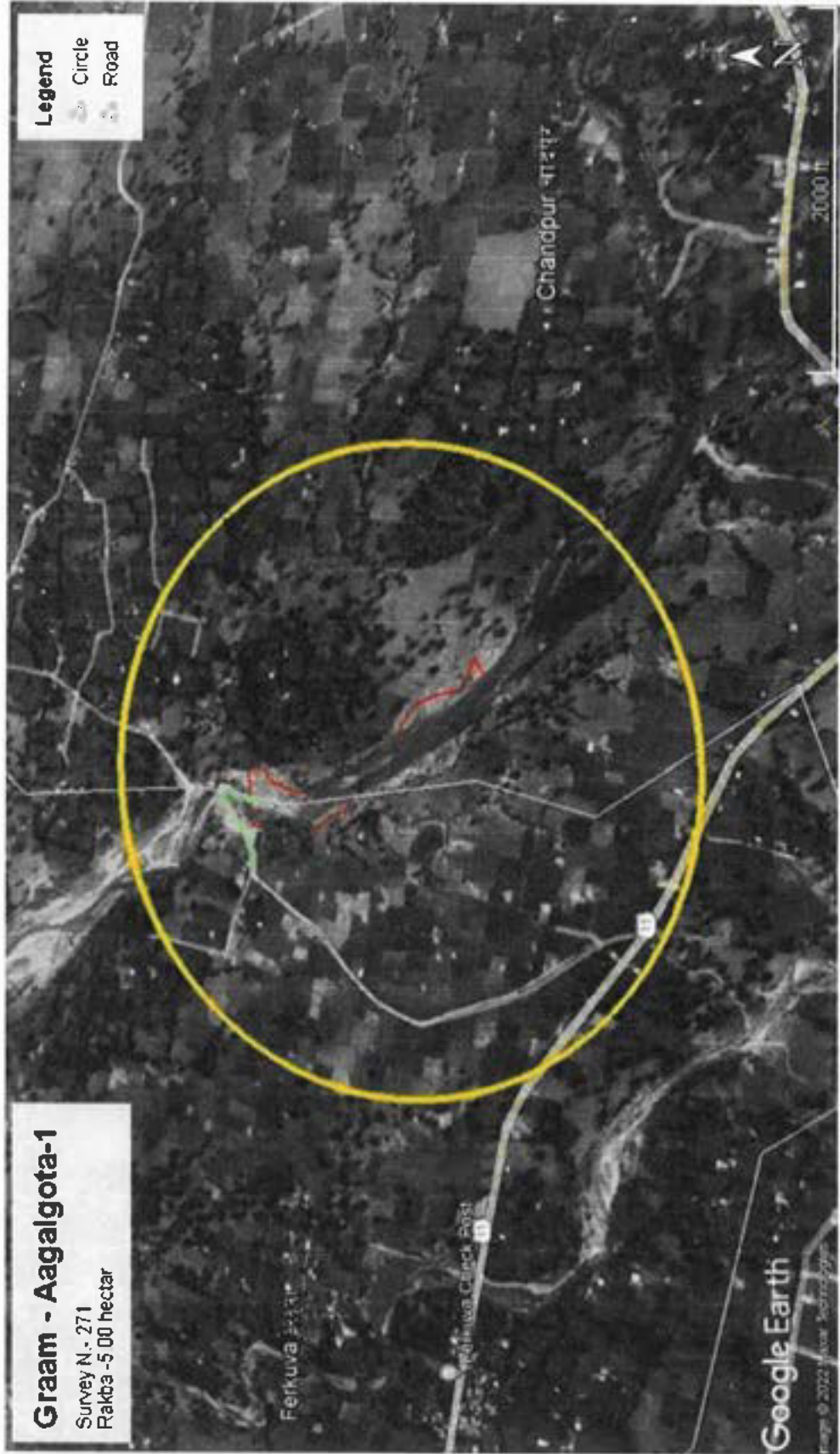
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प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

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Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

Route and Location Map of Aagalgota-1



Graam - Aagalgota-1

Survey N.- 271
Rakba -5 00 hectar

अभिकृत समिति द्वारा तैयार एवं सत्यापित,

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स्वनिज शाखा जिला-अलीराजपुर

State Level Environment Impact
Assessment Authority, M.P.
(E-ICO)
Bhawarwar, Farisar
E-5, Arora Colony, Bhopal (M.P.)

Arora

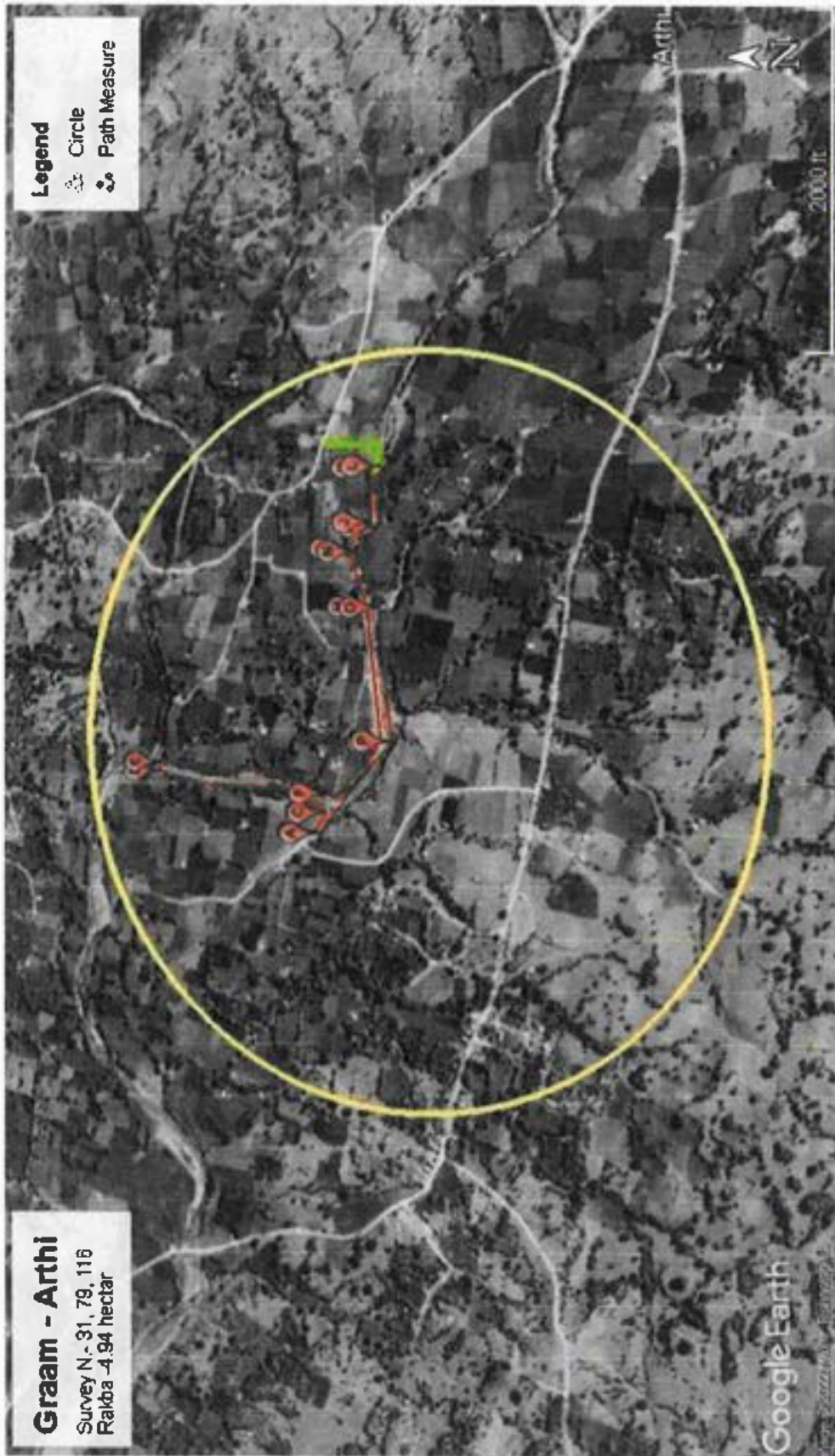
Route and Location Map of Aagalgota-2



[Signature]
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारि अधिकारी
खनिज शाखा, दिल्ली - खानीराजपुर

Route and Location Map of Arthi-1



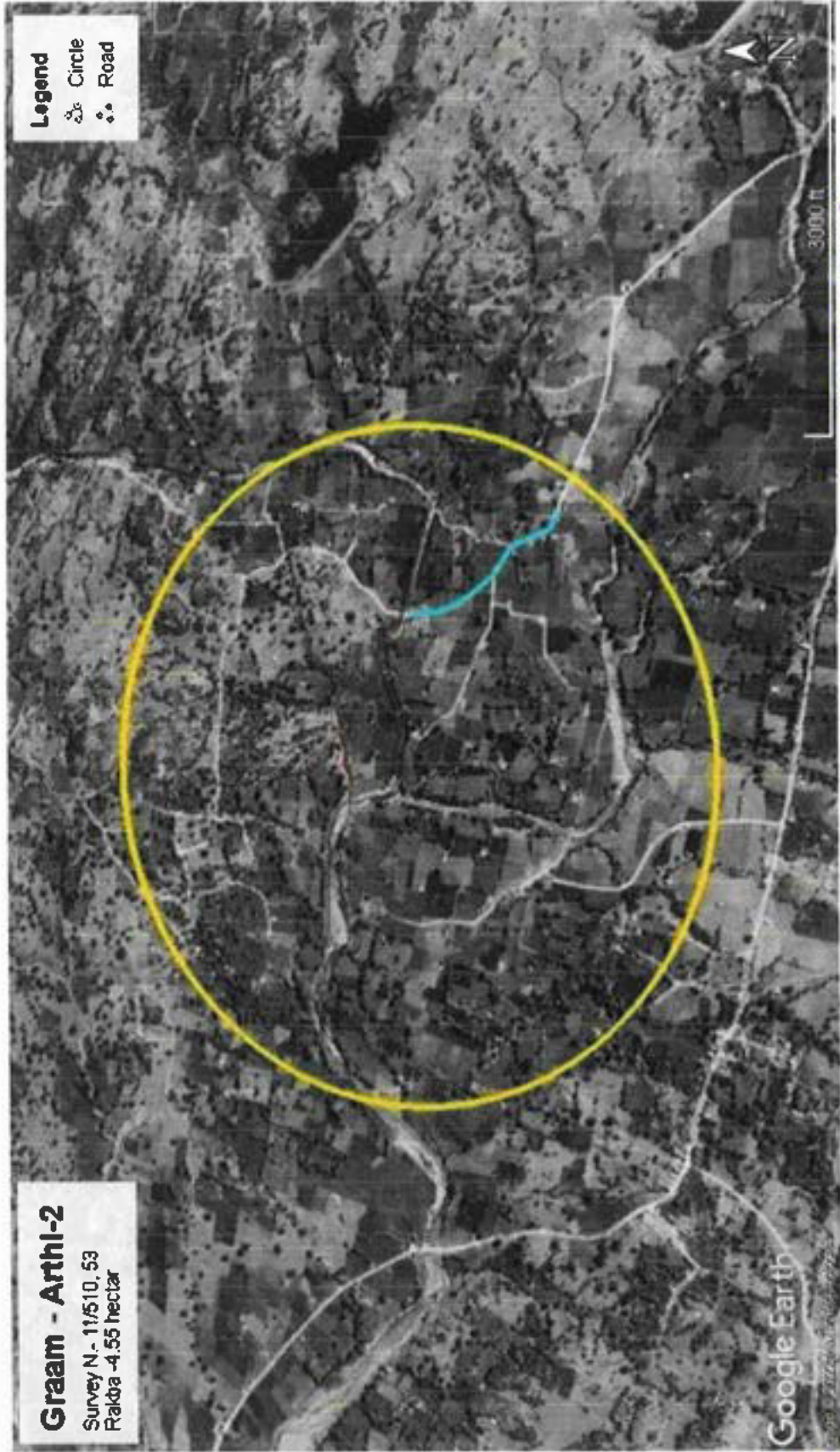
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प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Daryavaran Parisar
P. F. Colony, Bhopal (M.P.)

Route and Location Map of Arthi-2



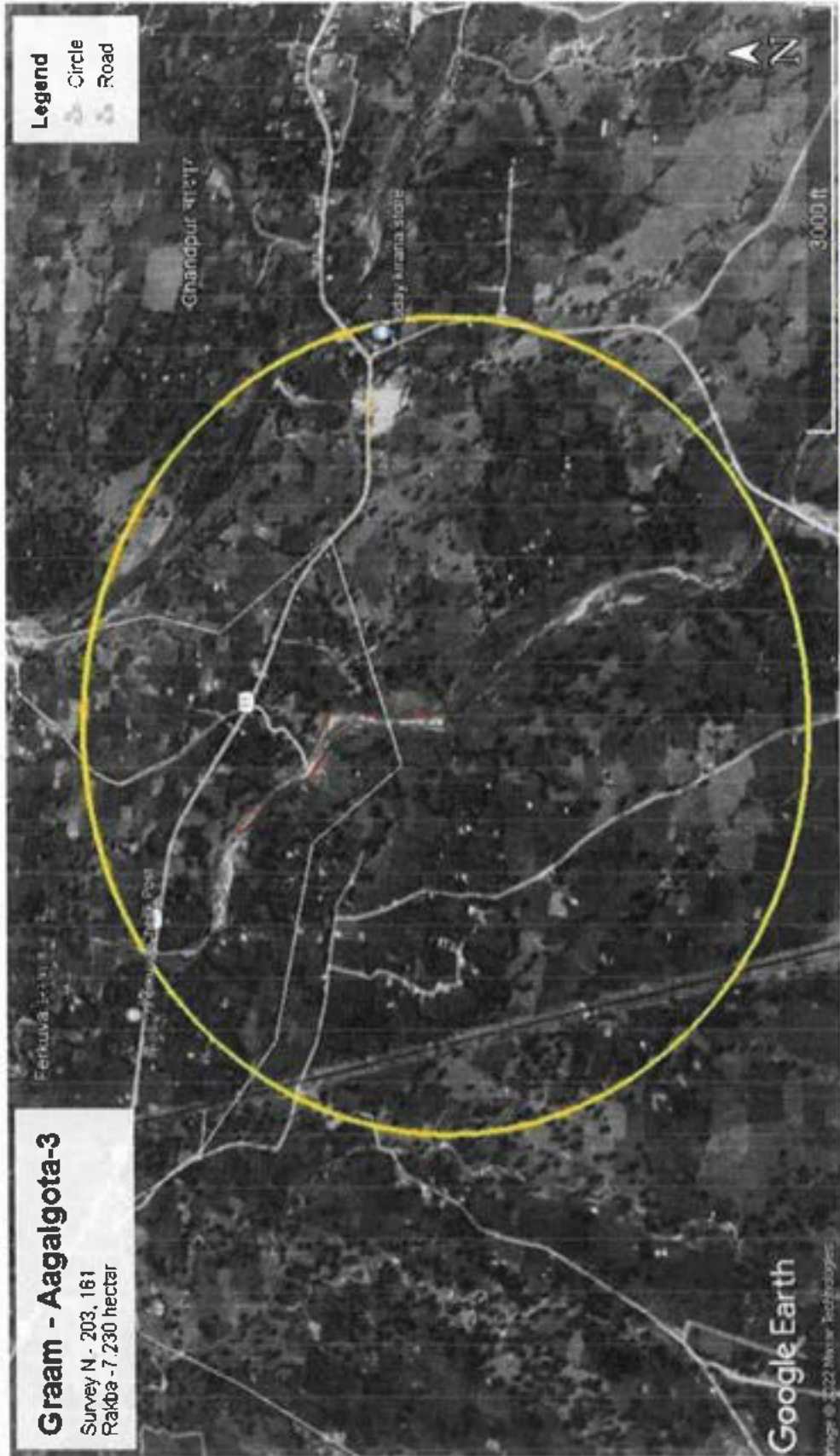
अधिकृत समिति द्वारा तैयार एवं सत्यापित,

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

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Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
F-5, Area Colony, Bhopal (M.P.)

Route and Location Map of Aagalgota-3



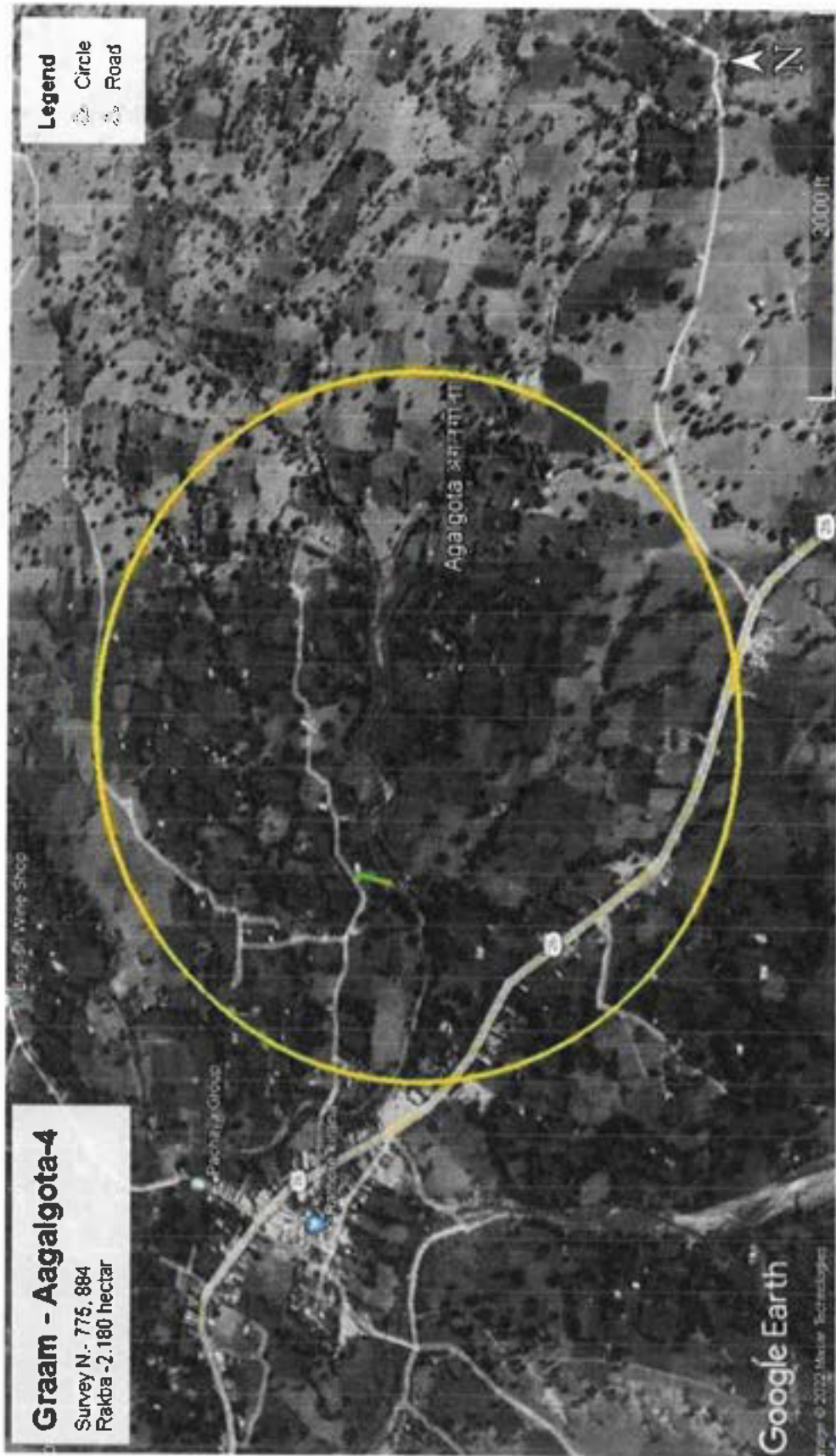
Graam - Aagalgota-3
Survey N - 203, 161
Rakba - 7.230 hectar

Legend
Circle
Road

अधिकृत समिति द्वारा तैयार एवं सत्यापित
प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

Autam
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Assessment Authority, M.P.
(EPCO)
Parvvaran Parisar
E-5, ... , Bhopal (M.P.)

Route and Location Map of Aagalgota-4



अभिकृत समिति द्वारा तैयार एवं सत्यापित

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Arjun
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Area Colony, Bhopal (M.P.)

Route and Location Map of Aagalgota-5

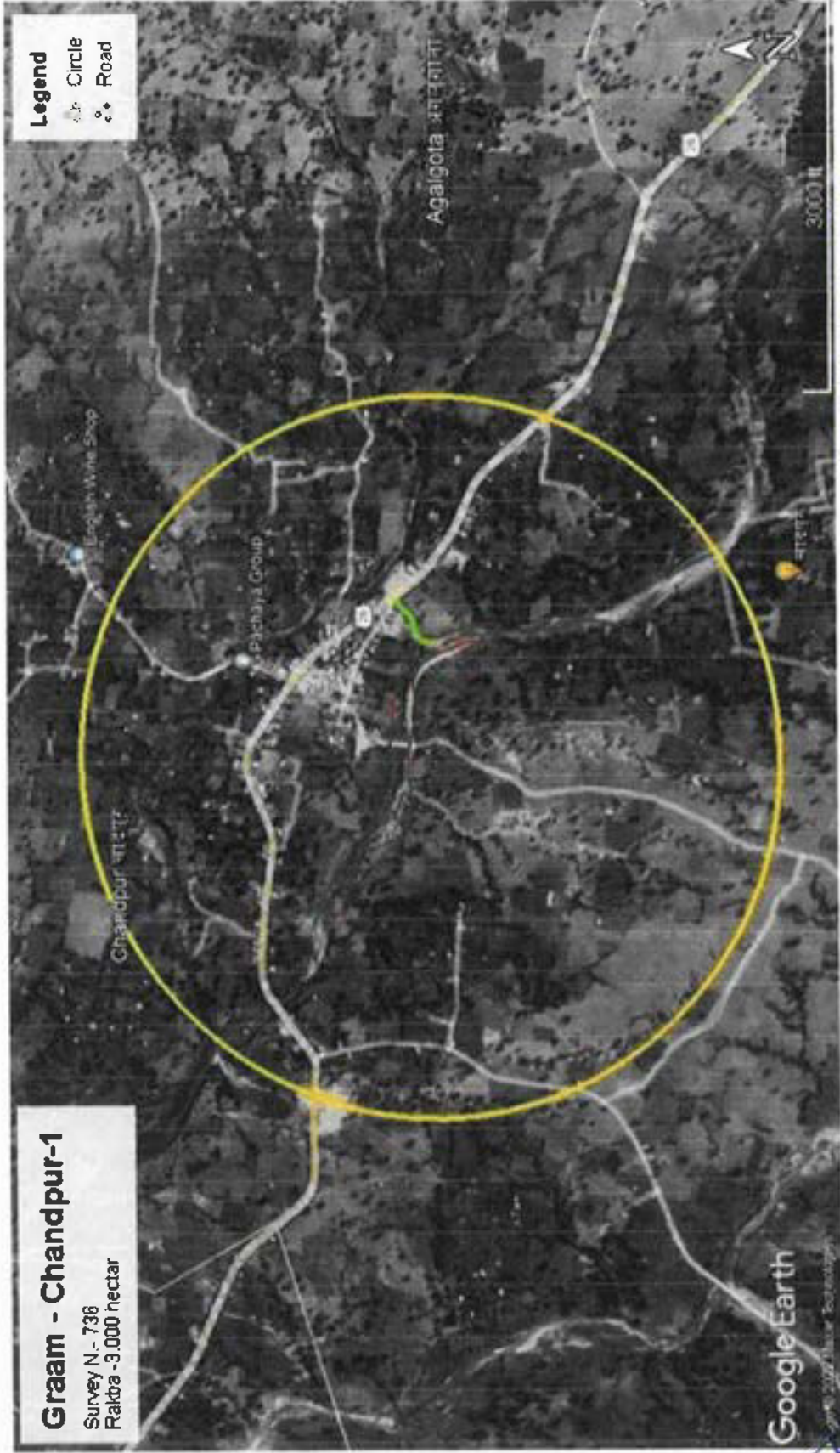


अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा - अलीराजपुर

Route and Location Map of Chandpur-1



Graam - Chandpur-1

Survey N - 736
Rakha - 3,000 hectar

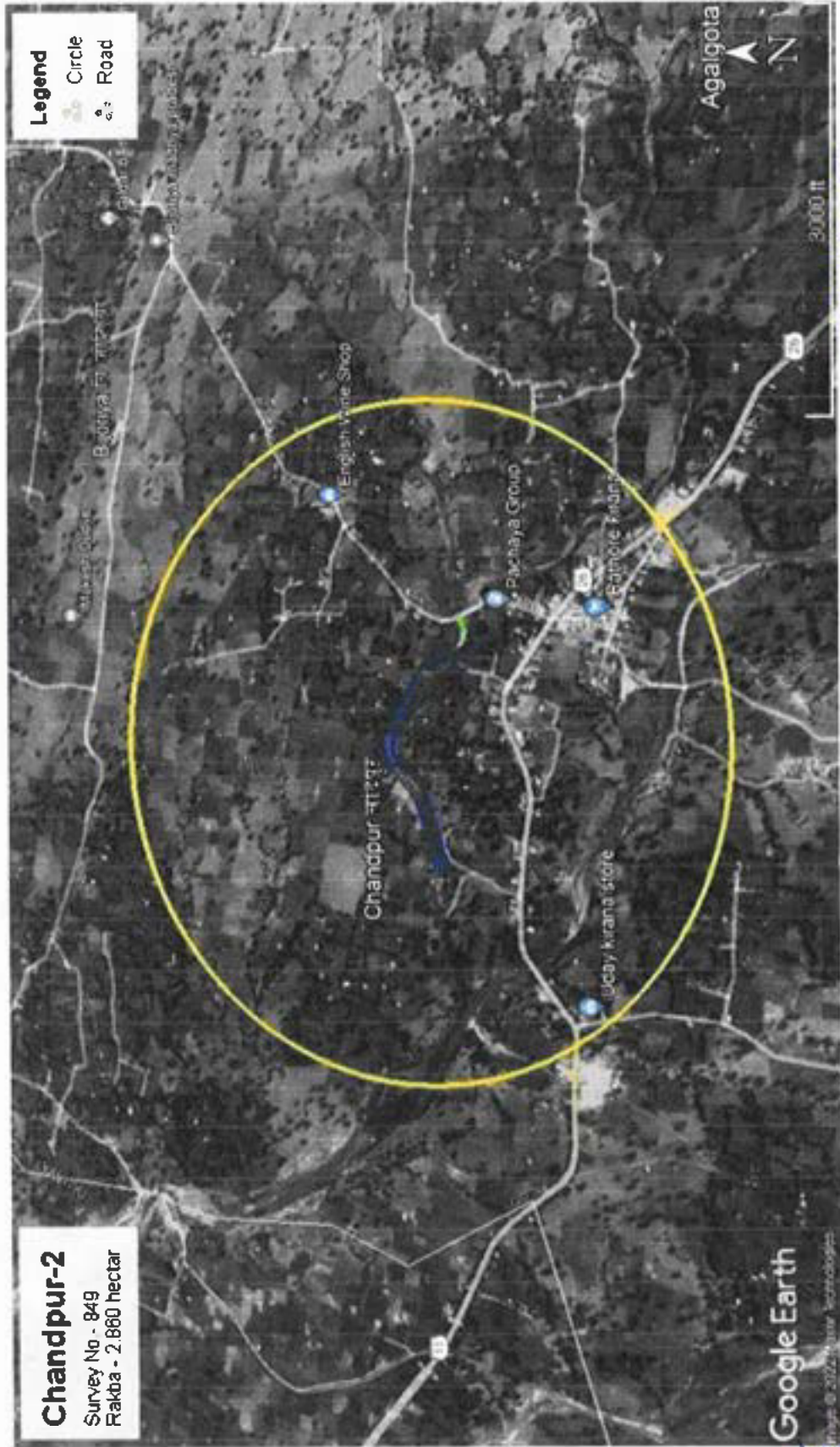
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प्रभासी अधिकारी

खनिज शाखा जिला-अलीराजपुर

Ashtona
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Darvavaran Parisar
C. S. T. Colony, Bhopal (M.P.)

Route and Location Map of Chandpur-2

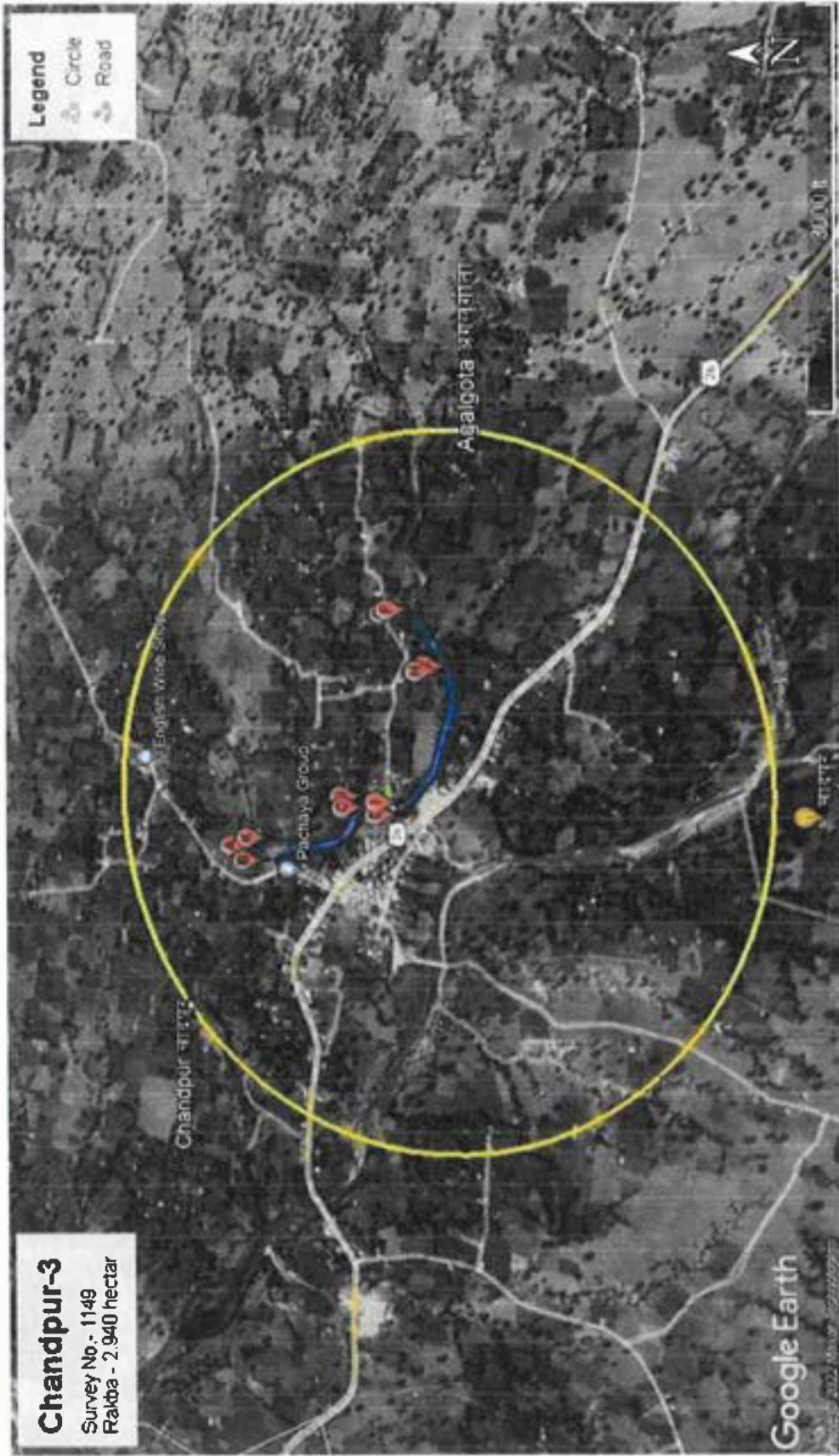


अधिकृत समिति द्वारा द्वारा एवं सत्यापित

प्रभारी आधिकारी

अनिज शाखा जिला-अलीराजपुर

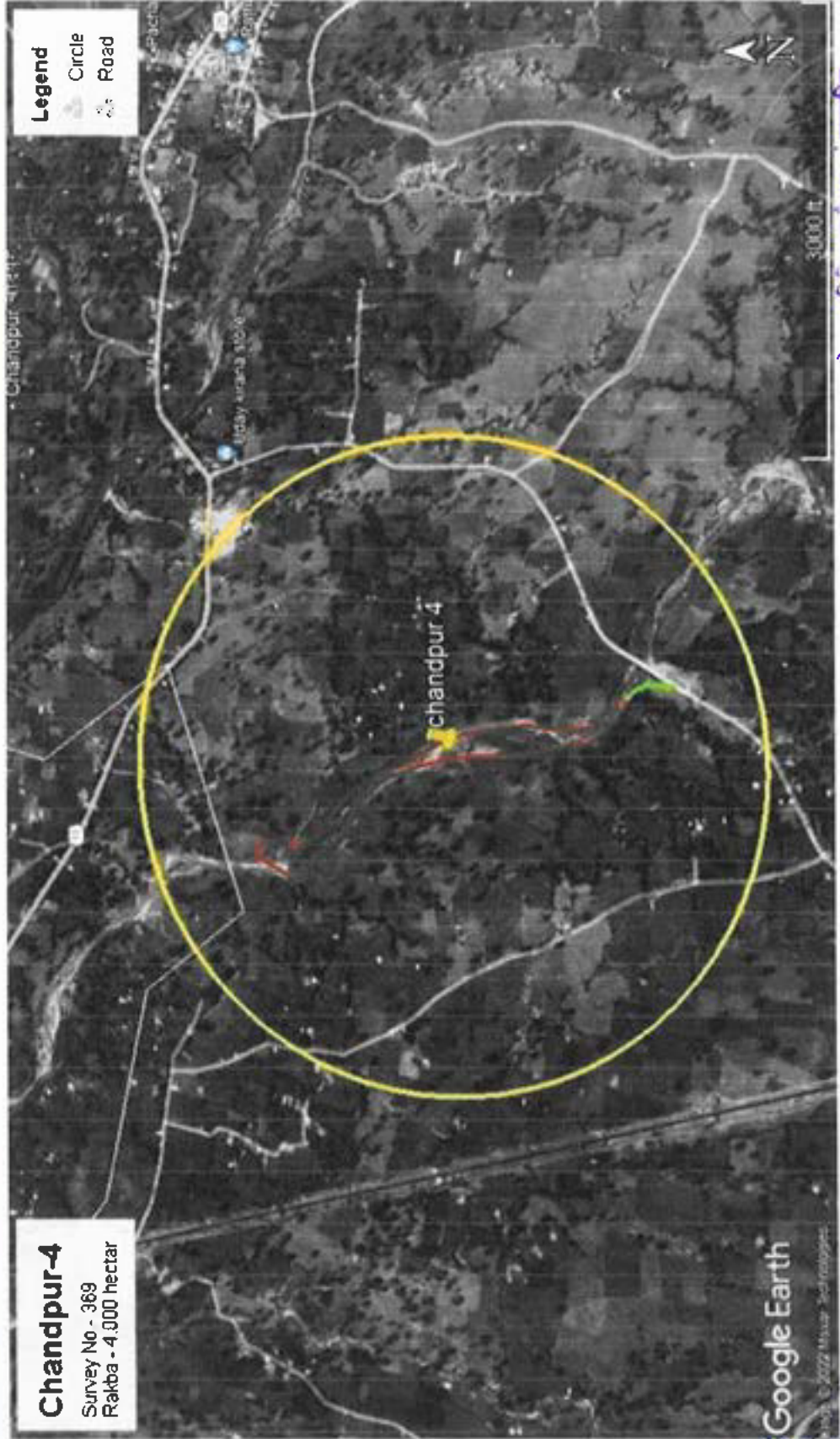
Route and Location Map of Chandpur-3



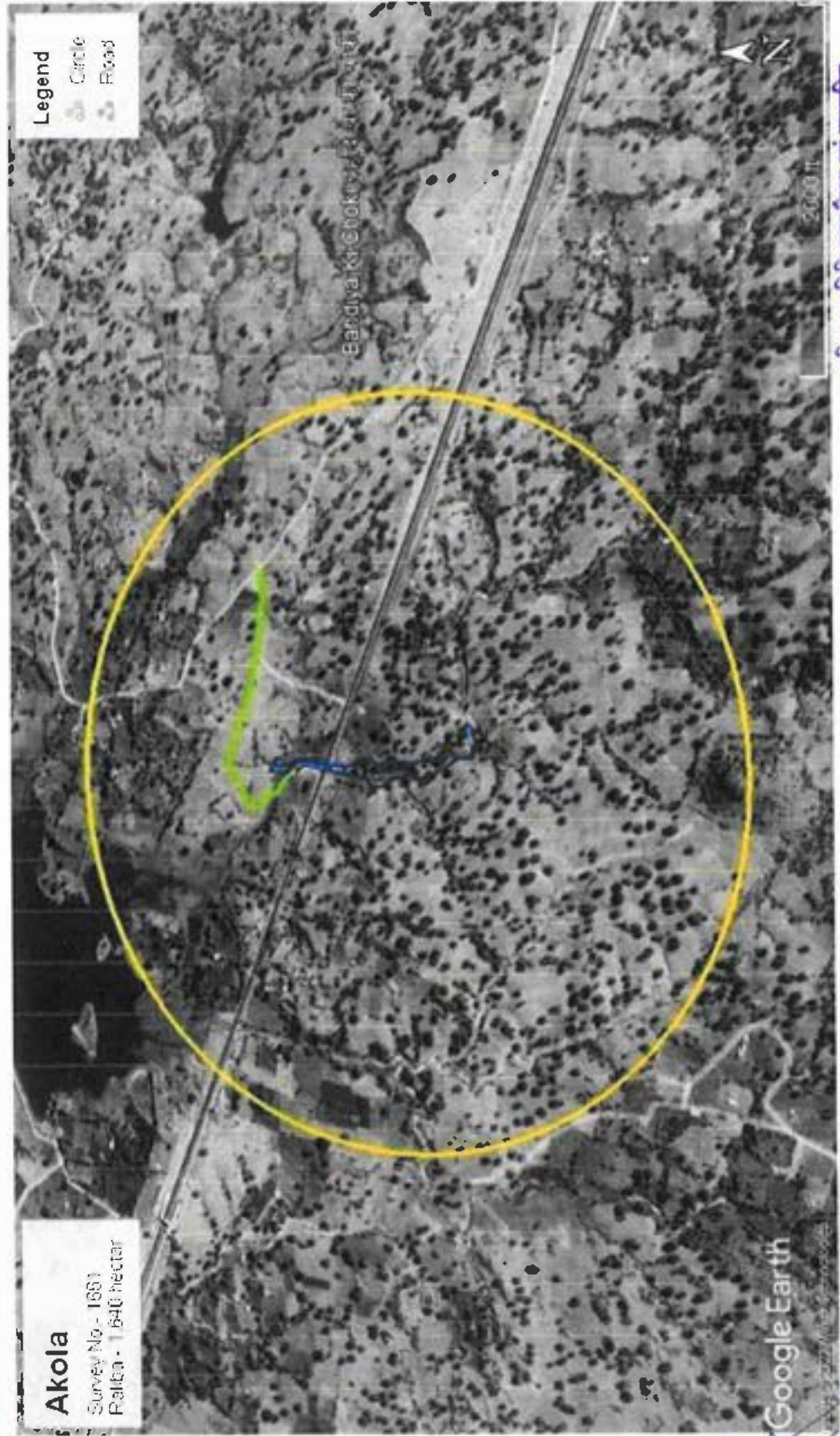
अधिकृत समिति द्वारा नक्शा एवं सत्यापित
प्रभारी अधिकारी
खनिज शाखा जिला-अलीराजपुर

A. K. Sharma
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvataran Parisar
E-5, 1st Cross, Bhopal (M.P.)

Route and Location Map of Chandpur-4



Route and Location Map of Akola

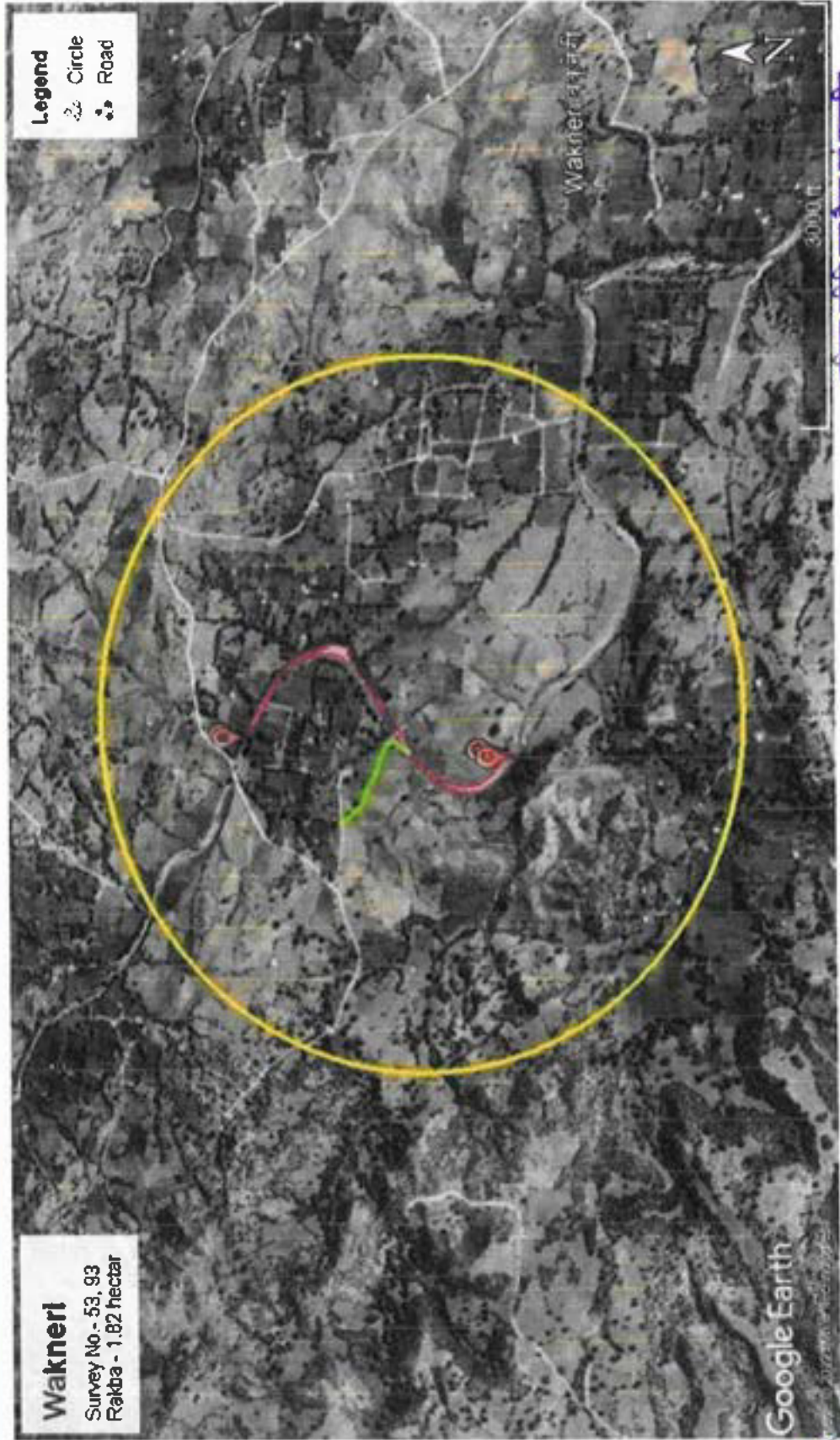


Arjun
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Assessment Authority, M.P.
(SEPP)
Bhopal
Madhya Pradesh (M.P.)

Route and Location Map of Mehni

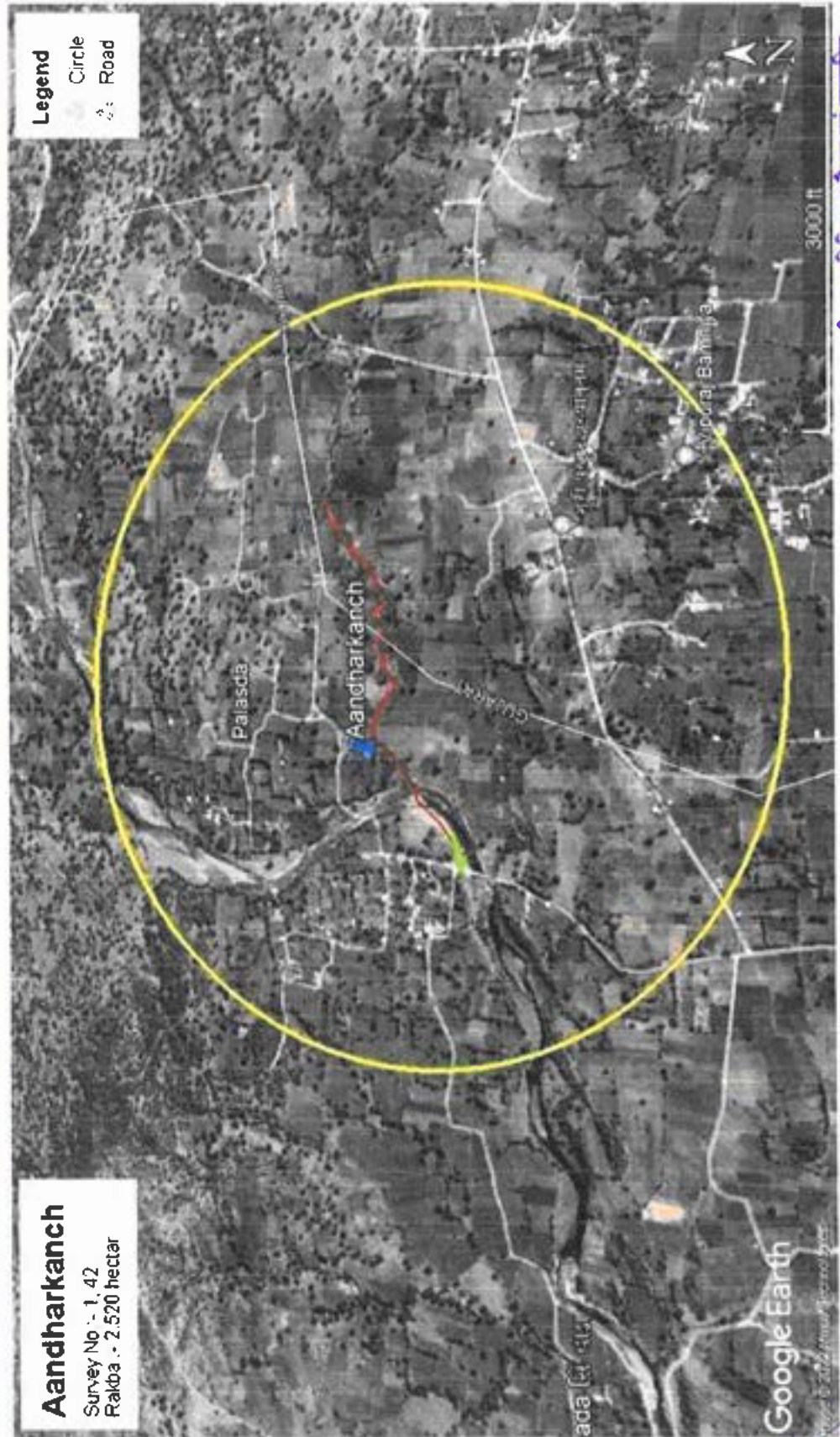


Route and Location Map of Wakneri



Ashwini
State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Parvatan Parisar
C-5, Sector-10, Bhopal (M.P.)

Route and Location Map of Aandharkanch

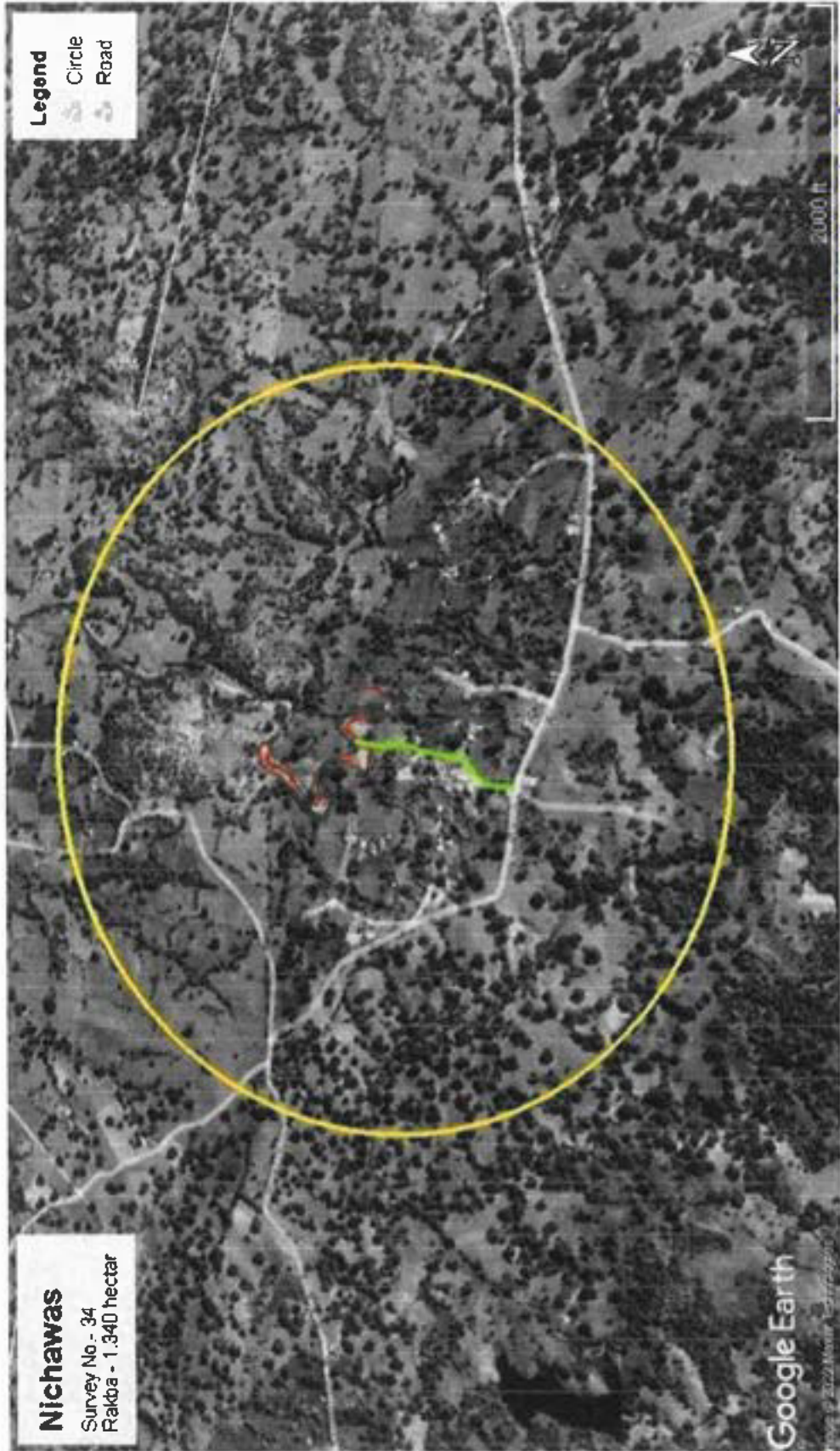


State Level Environment Impact
Assessment Authority, M.P.
(SEAAA)

Director, Gwalior

A. Khan

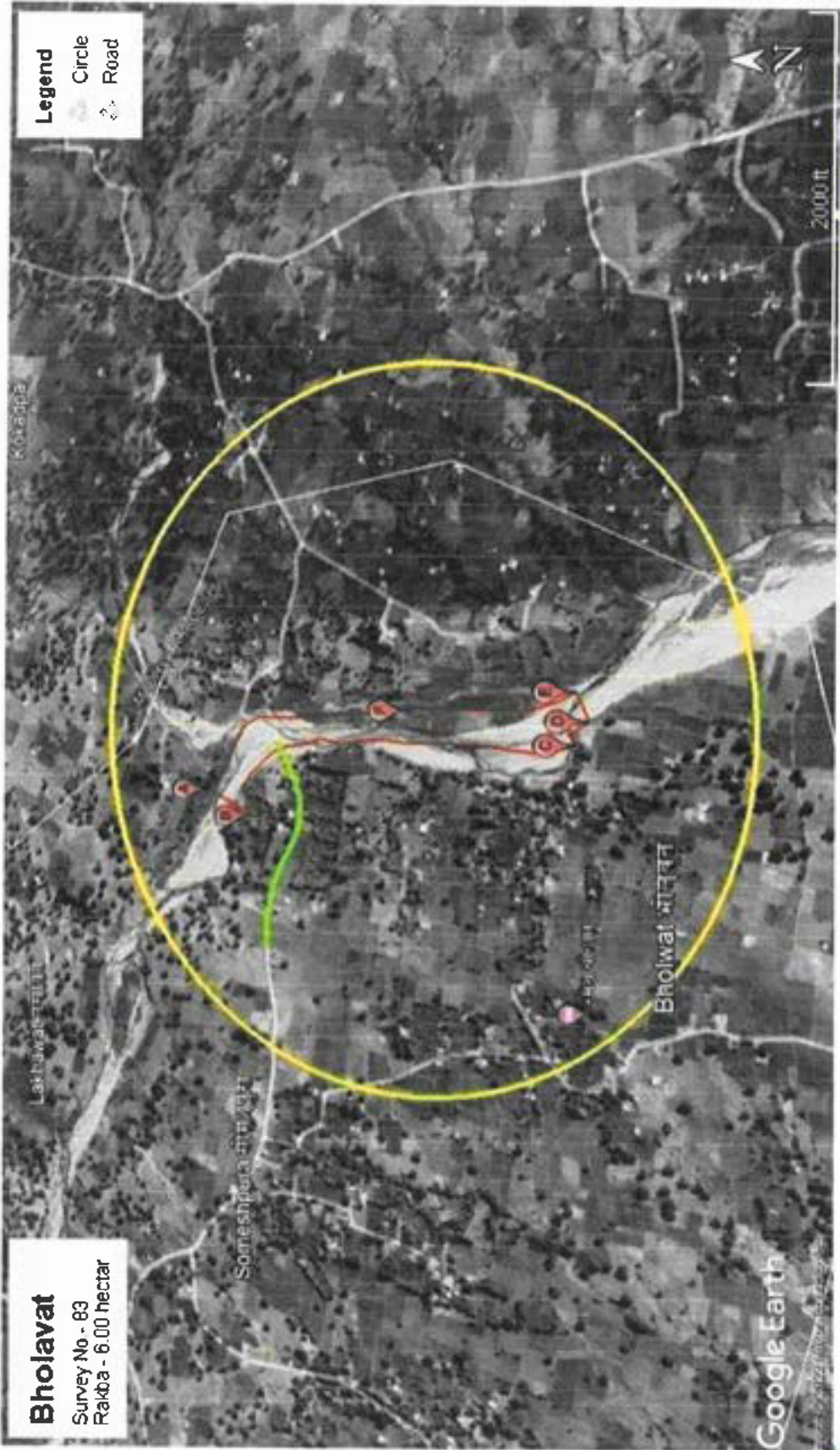
Route and Location Map of Nichawas



अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारती अधिकारी
वनविज्ञ शाखा जिला-अलीराजपुर

Route and Location Map of Bholvat

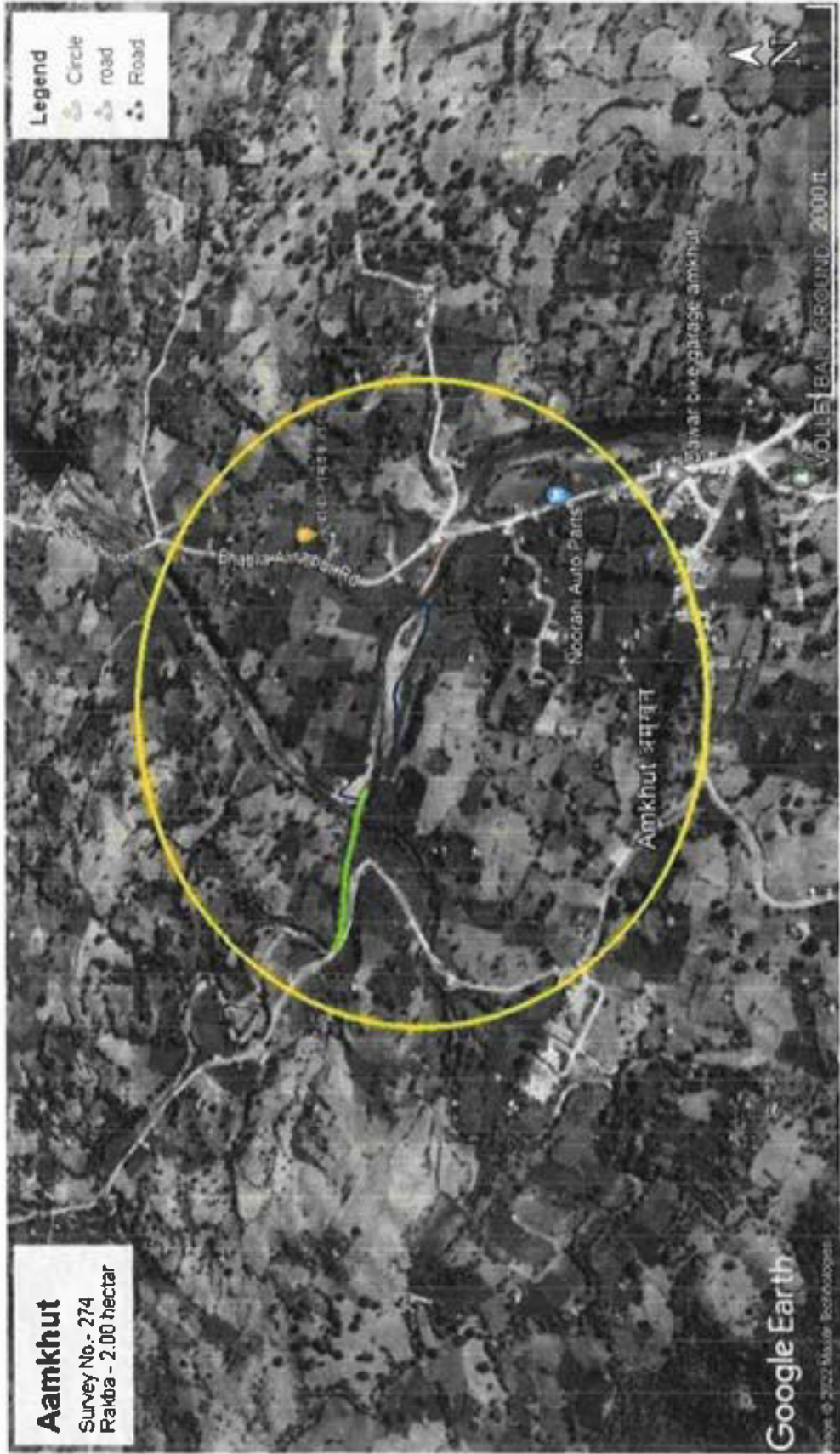


अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

Route and Location Map of Aamkhut



अभ्युक्त समिति द्वारा तैयार कृत स्थलचित्र

प्रभासी अधिकासी

खनिज शाखा जिला-अलीराजपुः

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Assessment Authority, M.P.
(EPCO)
Dr. J. K. Sarsar
Director, Environment, M.P.

(Signature)

ANNEXURE-V, Final list of Potential Sand Mining Area (Existing & Proposed)

River	Lease details	Area (in ha.)	Distance (inKM) from PA/BR/WC	Distance from Forest Area (inKM)	Mining leases within 500 meters (if yes/cluster area)	Total excavation in cubic meter/Annium considering digging depth max as 3 meters.		Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing/Proposed
						In M ³	In tonne		
Sukkad	Kodli	4.00	More than 10 kms.	More than 0.25 kms.	no	39192	54868.8	Sand	Existing
Sukkad	Rajawat	10.00	More than 10 kms.	More than 0.25 kms.	yes	39000	54600	Sand	Existing
Ankhad	Baddala	10.00	More than 10 kms.	More than 0.25 kms.	yes	58622	82070.8	Sand	Existing
Nala	Baddala	3.50	More than 10 kms.	More than 0.25 kms.	yes	15660	21924	Sand	Existing
Ankhad	Baddala	3.75	More than 10 kms.	More than 0.25 kms.	no	17748	24847.2	Sand	Existing
Sukkad	Morasa	5.00	More than 10 kms.	More than 0.25 kms.	no	0	0	Sand	Existing
Sukkad	Kharkuan	7.00	More than 10 kms.	More than 0.25 kms.	yes	37152	52012.8	Sand	Existing
Nala	Ambari	3.44	More than 10 kms.	More than 0.25 kms.	no	5356	7498.4	Sand	Existing
Hathni	Badh-Khattali	5.50	More than 10 kms.	More than 0.25 kms.	yes	14515	20321	Sand	Existing
Hathni	Baldamug	1.70	More than 10 kms.	More than 0.25 kms.	no	5100	7140	Sand	Existing
Nala	Davri	3.00	More than 10 kms.	More than 0.25 kms.	no	20304	28425.6	Sand	Existing
Ankhad	Chhoti Vegalgaon	5.52	More than 10 kms.	More than 0.25 kms.	yes	4320	6048	Sand	Existing
Ankhad	Chhoti Vegalgaon	2.18	More than 10 kms.	More than 0.25 kms.	yes	2280	3192	Sand	Existing
Hathni	Shoriya	6.00	More than 10 kms.	More than 0.25 kms.	yes	6537	9151.8	Sand	Existing
Hathni	Rawdi	10.00	More than 10 kms.	More than 0.25 kms.	yes	6955	9737	Sand	Existing
Of-sang	Sajanpur-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	55692	77968.8	Sand	Existing
Of-sang	Sajanpur-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	37250	52150	Sand	Existing


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Nala	Akola-1	4.00	More than 10 kms.	More than 0.25 kms.	no	17700	24780	Sand	Existing
Nala	Akola-2	5.00	More than 10 kms.	More than 0.25 kms.	no	22932	32104.8	Sand	Existing
Nala	Bijoriya-1	5.00	More than 10 kms.	More than 0.25 kms.	yes	19094	26731.6	Sand	Existing
Nala	Bijoriya-2	1.50	More than 10 kms.	More than 0.25 kms.	yes	3672	5140.8	Sand	Existing
Nala	Moriyagaon	5.30	More than 10 kms.	More than 0.25 kms.	yes	20880	29232	Sand	Existing
Nala	Chandpur	6.00	More than 10 kms.	More than 0.25 kms.	yes	37170	52038	Sand	Existing
Nala	Guda-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	27600	38640	Sand	Existing
Nala	Guda-2	6.00	More than 10 kms.	More than 0.25 kms.	yes	22200	31080	Sand	Existing
Urpur	Pratappura	7.00	More than 10 kms.	More than 0.25 kms.	yes	25800	36120	Sand	Existing
Urpur	Panala-1	3.07	More than 10 kms.	More than 0.25 kms.	no	12960	18144	Sand	Existing
Nala	Panala-2	2.35	More than 10 kms.	More than 0.25 kms.	no	9828	13759.2	Sand	Existing
Nala	Falyamau-1	6.60	More than 10 kms.	More than 0.25 kms.	yes	25110	35154	Sand	Existing
Nala	Falyamau-2	1.50	More than 10 kms.	More than 0.25 kms.	no	8080	11312	Sand	Existing
Nala	Aagalgota-1	5.00	More than 10 kms.	More than 0.25 kms.	yes	18792	26308.8	Sand	Existing
Nala	Aagalgota-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	8700	12180	Sand	Existing
Nala	Arthhi-1	4.94	More than 10 kms.	More than 0.25 kms.	no	25326	35456.4	Sand	Existing
Nala	Arthhi-2	4.55	More than 10 kms.	More than 0.25 kms.	yes	14288	20003.2	Sand	Existing
Nala	Aagalgota-3	7.230	More than 10 kms.	More than 0.25 kms.	yes	8736	12230.4	Sand	Existing
Nala	Aagalgota-4	2.180	More than 10 kms.	More than 0.25 kms.	no	7440	10416	Sand	Existing

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारती अधिकारी

मनिज शाखा जिला-अलीराजपुर


 Assessment Authority, M.P.
 (ECCO)
 Parveeran Parisar
 E. S. Arora Colony, Bhopal (M.P.)

Nala	Aalgota-5	1.990	More than 10 kms.	More than 0.25 kms.	no	10764	15069.6	Sand	Existing
Nala	Kadvaliya	1.160	More than 10 kms.	More than 0.25 kms.	no	900	1260	Sand	Existing
Nala	Chandpur-1	3.00	More than 10 kms.	More than 0.25 kms.	no	4104	5745.6	Sand	Existing
Nala	Chandpur-2	2.860	More than 10 kms.	More than 0.25 kms.	no	5016	7022.4	Sand	Existing
Nala	Chandpur-3	2.940	More than 10 kms.	More than 0.25 kms.	no	8640	12096	Sand	Existing
Nala	Chandpur-4	4.00	More than 10 kms.	More than 0.25 kms.	no	17280	24192	Sand	Existing
Nala	Akola	1.640	More than 10 kms.	More than 0.25 kms.	no	1980	2772	Sand	Existing
Nala	Mehani	1.000	More than 10 kms.	More than 0.25 kms.	no	3960	5544	Sand	Existing
Nala	Vakneri	1.820	More than 10 kms.	More than 0.25 kms.	no	6000	8400	Sand	Existing
Nala	Andharkach	2.520	More than 10 kms.	More than 0.25 kms.	no	11880	16632	Sand	Existing
Nala	Nichavas	1.340	More than 10 kms.	More than 0.25 kms.	no	3672	5140.8	Sand	Existing
Nala	Bholvat	6.00	More than 10 kms.	More than 0.25 kms.	yes	14601	20441.4	Sand	Existing
Nala	Aamkhat	2.00	More than 10 kms.	More than 0.25 kms.	no	9273	12982.2	Sand	Existing

Patta Lands/Khatedari Land: (existing & proposed)

Owner	Sy.No.	Area	District	Tehsil	Village	Total Reserve(MT)	District	Tehsil	Village	Total Mineral to be mined (MT)	Existing/Proposed
NIL											

De-Siltation Location: (Lakes/Ponds/Dams etc.) (existing & proposed)

Name of reservoir/Dams	Maintain/ Controlled by State Govt/PSU etc.	Location	District	Tehsil	Village	Quantity MT/Year	Existing/Proposed
NIL							

M-Sand Plants: (existing & proposed)

Plant Name	Owner	Location	District	Tehsil	Village	Geo-Location	Quantity Tones/Annum	Existing/Proposed
NIL								

ANNEXURE-VI

Final list of Cluster & Contiguous Cluster

3. Clusters:

River Name	Cluster No.	Lease No.	Location (Reverbed/ Patta Land)	Village	Area (ha)	Total excavation (MT)	Total Mineral excavation (MT)
NIL							

4. Contiguous Cluster:

River Name	Contiguous Cluster No.	Cluster No.	Number of lease In the cluster	Location (Rever bed / Patta land)	Distance between cluster	Village	Area of cluster (ha)	Total mineral excavation (ton)
NIL								


State Level Environment Impact
Assessment Authority, M.P.
(EPCO)
Paryavaran Parisar
E-5, Arera Colony, Bhopal (M.P.)

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभास ओडेकारी
खनिज शाखा जिला-अलीराजपुर

ANNEXURE-VII

Final Transportation Routes for Individual Sand Quarry and Sand Quarry in Cluster:

1. Transportation Routes For Individual Sand Quarry

River	Lease details	Area (in ha.)	Distance (inKM) from PA/BR/AWC	Distance from Forest Area (inKM)	Mining leases within 500 meters (if yes cluster area)	Total excavation in cubic meter/Annrum considering digging depth max as 3 meters.		Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing/ Proposed
						In M ³	In tonne		
Sukkad	Kodli	4.00	More than 10 kms.	More than 0.25 kms.	no	39192	54868.8	Sand	Existing
Sukkad	Rajawat	10.00	More than 10 kms.	More than 0.25 kms.	yes	39000	54600	Sand	Existing
Ankhad	Baddala	10.00	More than 10 kms.	More than 0.25 kms.	yes	58622	82070.8	Sand	Existing
Nala	Baddala	3.50	More than 10 kms.	More than 0.25 kms.	yes	15660	21924	Sand	Existing
Ankhad	Baddala	3.75	More than 10 kms.	More than 0.25 kms.	no	17748	24847.2	Sand	Existing
Sukkad	Morasa	5.00	More than 10 kms.	More than 0.25 kms.	no	0	0	Sand	Existing
Sukkad	Kharkuan	7.00	More than 10 kms.	More than 0.25 kms.	yes	37152	52012.8	Sand	Existing
Nala	Ambari	3.44	More than 10 kms.	More than 0.25 kms.	no	5356	7498.4	Sand	Existing
Hathni	Badi-Khattali	5.50	More than 10 kms.	More than 0.25 kms.	yes	14515	20321	Sand	Existing
Hathni	Baldamug	1.70	More than 10 kms.	More than 0.25 kms.	no	5100	7140	Sand	Existing
Nala	Davri	3.00	More than 10 kms.	More than 0.25 kms.	no	20304	28425.6	Sand	Existing
Ankhad	Chhoti Vegalgaon	5.52	More than 10 kms.	More than 0.25 kms.	yes	4320	6048	Sand	Existing
Ankhad	Chhoti Vegalgaon	2.18	More than 10 kms.	More than 0.25 kms.	yes	2280	3192	Sand	Existing

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

अनिज शाखा पिपरा-अलीराजपुर

Hathni	Bhoriya	6.00	More than 10 kms.	More than 0.25 kms.	yes	6537	9151.8	Sand	Existing
Hathni	Rawdi	10.00	More than 10 kms.	More than 0.25 kms.	yes	6955	9737	Sand	Existing
Orsang	Sajanpur-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	55692	77968.8	Sand	Existing
Orsang	Sejapur-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	37250	52150	Sand	Existing
Nala	Akola-1	4.00	More than 10 kms.	More than 0.25 kms.	no	17700	24780	Sand	Existing
Nala	Akola-2	5.00	More than 10 kms.	More than 0.25 kms.	no	22932	32104.8	Sand	Existing
Nala	Bijoriya-1	5.00	More than 10 kms.	More than 0.25 kms.	yes	19094	26731.6	Sand	Existing
Nala	Bijoriya-2	1.50	More than 10 kms.	More than 0.25 kms.	yes	3672	5140.8	Sand	Existing
Nala	Moriyagaon	5.30	More than 10 kms.	More than 0.25 kms.	yes	20880	29232	Sand	Existing
Nala	Chandpur	6.00	More than 10 kms.	More than 0.25 kms.	yes	37170	52038	Sand	Existing
Nala	Guda-1	6.00	More than 10 kms.	More than 0.25 kms.	yes	27600	38640	Sand	Existing
Nala	Guda-2	6.00	More than 10 kms.	More than 0.25 kms.	yes	22200	31080	Sand	Existing
Urpur	Pratappura	7.00	More than 10 kms.	More than 0.25 kms.	yes	25800	36120	Sand	Existing
Urpur	Panala-1	3.07	More than 10 kms.	More than 0.25 kms.	no	12960	18144	Sand	Existing
Nala	Panala-2	2.35	More than 10 kms.	More than 0.25 kms.	no	9828	13759.2	Sand	Existing
Nala	Faiyamau-1	6.60	More than 10 kms.	More than 0.25 kms.	yes	25110	35154	Sand	Existing
Nala	Faiyamau-2	1.50	More than 10 kms.	More than 0.25 kms.	no	8080	11312	Sand	Existing
Nala	Angalgota	5.00	More than 10 kms.	More than 0.25 kms.	yes	18792	26308.8	Sand	Existing

अधिकृत समिति द्वारा तैयार एवं सत्यापित

प्रभारी अधिकारी

खनिज शाखा जिला - यूपी राजपु

Nala	Aagalgota-2	4.00	More than 10 kms.	More than 0.25 kms.	yes	8700	12180	Sand	Existing
Nala	Arthhi-1	4.94	More than 10 kms.	More than 0.25 kms.	no	25326	35456.4	Sand	Existing
Nala	Arthhi-2	4.55	More than 10 kms.	More than 0.25 kms.	yes	14288	20003.2	Sand	Existing
Nala	Aagalgota-3	7.230	More than 10 kms.	More than 0.25 kms.	yes	8736	12230.4	Sand	Existing
Nala	Aagalgota-4	2.180	More than 10 kms.	More than 0.25 kms.	no	7440	10416	Sand	Existing
Nala	Aagalgota-5	1.990	More than 10 kms.	More than 0.25 kms.	no	10764	15069.6	Sand	Existing
Nala	Kadvaliya	1.160	More than 10 kms.	More than 0.25 kms.	no	900	1260	Sand	Existing
Nala	Chandpur-1	3.00	More than 10 kms.	More than 0.25 kms.	no	4104	5745.6	Sand	Existing
Nala	Chandpur-2	2.860	More than 10 kms.	More than 0.25 kms.	no	5016	7022.4	Sand	Existing
Nala	Chandpur-3	2.940	More than 10 kms.	More than 0.25 kms.	no	8640	12096	Sand	Existing
Nala	Chandpur-4	4.00	More than 10 kms.	More than 0.25 kms.	no	17280	24192	Sand	Existing
Nala	Akola	1.640	More than 10 kms.	More than 0.25 kms.	no	1980	2772	Sand	Existing
Nala	Mehani	1.000	More than 10 kms.	More than 0.25 kms.	no	3960	5544	Sand	Existing
Nala	Vakneri	1.820	More than 10 kms.	More than 0.25 kms.	no	6000	8400	Sand	Existing
Nala	Andharkach	2.520	More than 10 kms.	More than 0.25 kms.	no	11880	16632	Sand	Existing
Nala	Nichavas	1.340	More than 10 kms.	More than 0.25 kms.	no	3672	5140.8	Sand	Existing
Nala	Bholvat	6.00	More than 10 kms.	More than 0.25 kms.	yes	14601	20441.4	Sand	Existing
Nala	Aamkhut	2.00	More than 10 kms.	More than 0.25 kms.	no	9273	12982.2	Sand	Existing

अधिकृत समिति द्वारा तैयार एवं मर्यापित

प्रभारी अधिकारी

खनिज शाखा जिला-अलीराजपुर

Tahsil wise detail of river or stream and other sand source

S.No.	Tahsil	River or River Stream for sand source
1	Katthiwara	Orsang,
2	Alirajpur	Ankhad, Hathni, Sukkad
3	Jobat	Hathni
4	Sondwa	Ankhad

Tahsil wise Availability of sand or gravel or aggregate resources

S.No.	Tahsil	River name	Name of Sand Ghats
1	Katthiwara	Orsang,	Sajanpur
2	Alirajpur	Ankhad, Hathni, Sukkad	Kodli, Rajawat, Baddala, marasa, Kharkuan
3	Jobat	Hathni	Badi-khattali, Baladmug, Bhordiya, Rawdi
4	Sondwa	Ankhad	Chhoti-wegalgaon

Tahsil wise detail of existing mining leases of sand and aggregates

S.No.	Tahsil	No. of Sand Ghats
1	Katthiwara	34
2	Alirajpur	08
3	Jobat	02
4	Sondwa	05

List of Rivers and Drained flowing in Alirajpur District

s.no.	Name of the River	Length in the district (in KM)	Brief information of river
1	The Narmada	About 45 Kms in the district	This river originate from Amarkantak district Annupur and the river is Perennial type
2	Hatni River	About 85 kms	This river originate from Sejawada in district and the river is Non-Perennial type
3	Ankhad River	About 30 kms	This river originate from Sorwa tahsil and the river is Non-Perennial type
4	Orsang River	About 38 kms	This river originate from Kunhki in district and the river is Non-Perennial type
5	Sukkad River	About 72kms	This river originate from Begda in district and the river is Non-Perennial type

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