

**ENVIRONMENT IMPACT ASSESSMENT
&
ENVIRONMENTAL MANAGEMENT PLAN
WITH EXECUTIVE SUMMARY HINDI & ENGLISH
FOR
RIVER BED MINING PROJECT OF MINOR MINERAL
SAND, BAJRI, & STONE
AT**

MAUZA AND MOHAL GAURI & DATWAL

**Tehsil –Bijhri Datwal , District – Hamirpur,
State – Himachal Pardesh**

(Government Land)

NAME OF RIVER – SUKKER KHAD PART - I

Purpose – Fresh Grant EC,

Proposed Production – 90,450 TPA

APPLIED LEASE AREA- 06-10-05 Hect., PROJECT COST – 50.50 Lacs

CATEGORY- 'B1



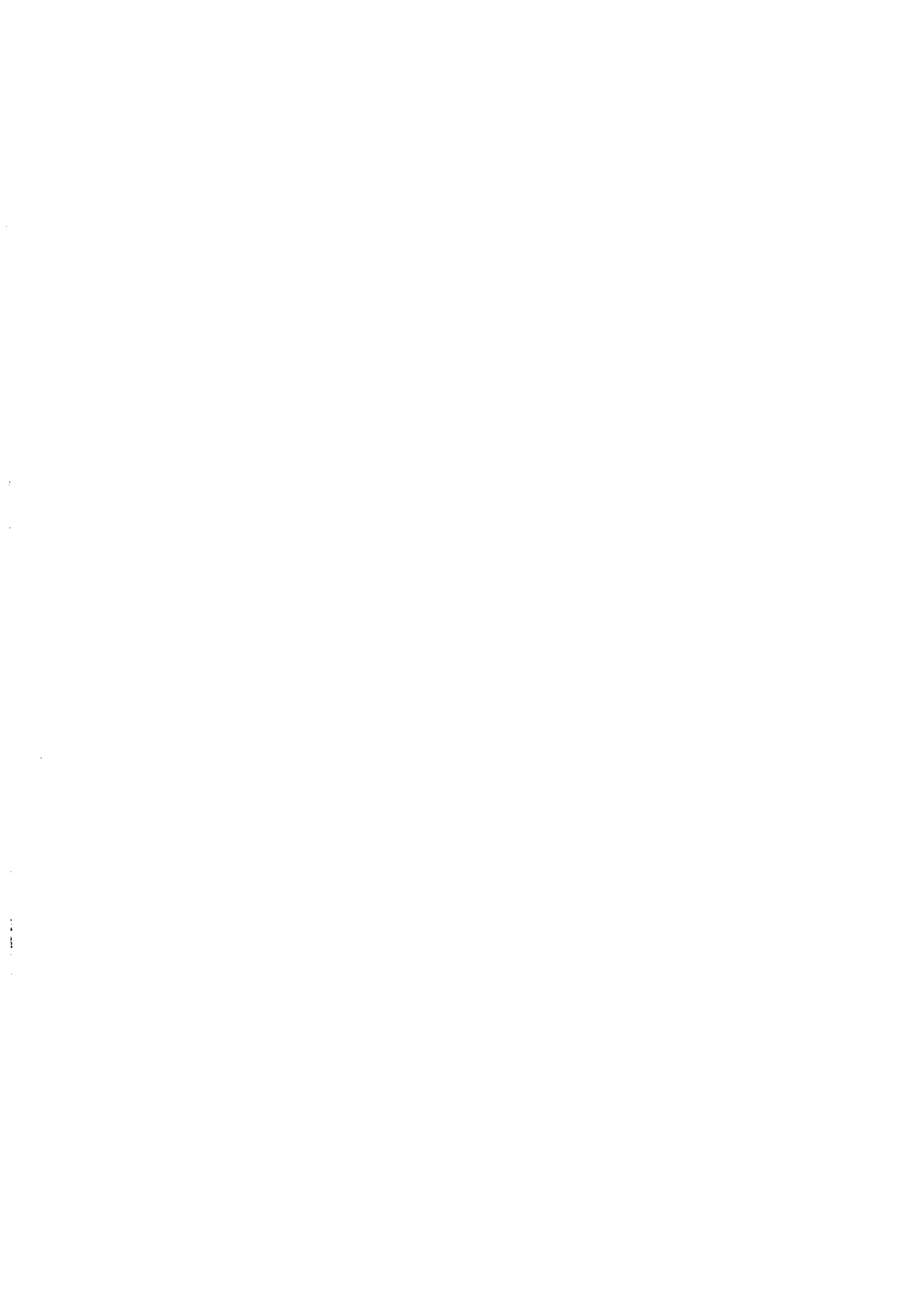
APPLICANT

**M/s. SHRI RAJ KUMAR S/o SHRI
JOGINDAR SINGH
R/o.- VILLAGE & P.O SAMTANA
TEHSIL- BIJHARI DATWAL &
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Quality Council of India
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ABBREVIATIONS

AAS/ICP	:	Atomic Absorption Spectrophotometer/Inductively Coupled
A		Plasma Analyzer
AAQ	:	Ambient Air Quality
AAQM	:	Ambient Air Quality Monitoring
AAQS	:	Ambient Air Quality Standards
ADM	:	Additional District Magistrate
AIS & LUS	:	All India Soil and Land Use Survey
AMSL	:	Above Mean Sea Level
ANFO	:	Ammonium Nitrate - Fuel Oil
APHA	:	American Public Health Association
BH	:	Business Head
BHs	:	Bore Holes
BIS	:	Bureau of Indian Standards
BGL	:	Below Ground Level
CAZRI	:	Central Arid Zone Research Institute
CC	:	Calcium Carbonate
CCA	:	Culturable Command Area
CFM	:	Cubic Feet per Minute
CWC		Central Water Commission
CPCB	:	Central Pollution Control Board
CCR	:	Central Control Room
CSR	:	Corporate Social Responsibility
CMO	:	Cement Manufacturing Officer
DFO	:	District Forest Officer
DGMS	:	Directorate General of Mines Safety
DMP	:	Disaster Management Plan
DMG	:	Department of Mines and Geology
DSB	:	Differential Sub Basin
DTH	:	Down the Hole
E	:	East
EAC	:	Expert Appraisal Committee
EC	:	Environmental Clearance
ECO	:	Emergency Coordinating Officer
EIA	:	Environmental Impact Assessment

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EMC	:	Environment Management Cell
EMP	:	Environmental Management Plan
EMP	:	Environmental Monitoring Programme
ESE	:	East of South East
ENE	:	East of North East
EPA	:	Environmental Protection Act
ETP	:	Effluent Treatment Plant
ERDAS	:	Earth Resources Data Analysis System
EPO	:	Emergency planning officer
FPS	:	Fine Particulate Sampler
FCC	:	False Color Composite
Govt.	:	Government
GCP	:	Ground Control Points
GLC	:	Ground Level Concentration
GOI	:	Government of India
GPS	:	Global Positioning System
GSI	:	Geological Survey of India
GWEC	:	Ground Water Estimation Committee
Ha	:	Hectare
HIV	:	Human Immunodeficiency Virus
HEME	:	Heavy Earth Moving Equipment
HP	:	Horse Power
HOD	:	Head of Department
HSD	:	High Speed Diesel
IBM	:	Indian Bureau of Mines
IMD	:	India Meteorological Department
IS	:	Indian Standards
ISO	:	International Organization of Standardization
IUCN	:	International Union for Conservation of Nature
KLD	:	Kilo Liter Per Day
LOI	:	Letter of Intent
LUS	:	Land Use Study
LU/LC	:	Land Use / Land Cover
mRL	:	Meter Reduced Level
MC	:	Magnesium Carbonate
MHHS	:	Multi House Hold Survey
ML	:	Mining Lease

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MoEF&C	:	Ministry of Environment , Forests& Climate Change
C	:	
MSK	:	Medvedev-Sponheur-Karnik Scale
MSL	:	Mean Sea Level
MT	:	Metric Tonnes
MTPA	:	Metric Tonnes Per Annum
N	:	North
NAAQS	:	National Ambient Air Quality Standards
NABET	:	National Accreditation Board for Education & Training
NATMO	:	National Atlas & Thematic Mapping Organization
NABL	:	National Accreditation Board for Testing and Calibration Laboratories
NDIR	:	Non Depressive Infrared Spectroscopy
NE	:	North East
NH	:	National Highway
NNE	:	North of North East
NGO	:	Non Governmental Organization
NNW	:	North of North West
NRBPT	:	National Registration Board for Personnel & Training
NRSA	:	National Remote Sensing Agency
NRSC	:	National Remote Sensing Centre
NW	:	North West
OB	:	Over Burden
OBC	:	Other Backward Classes
OHS	:	Occupational Health and Safety
OSHA	:	Occupational Safety and Health Administration
PETN	:	Penta Erythritol Tetra Nitrate
PFR	:	Pre Feasibility Report
pH	:	Potential of Hydrogen
PHCS	:	Public Health Centers
PM	:	Particulate Matter
PPE	:	Personal Protective Equipment
PPV	:	Peak Particle Velocity
QCI	:	Quality Council of India
RSPM	:	Reparable Suspended Particulate Matter
SDO	:	Sub Divisional Officer
SC	:	Scheduled Caste

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SE	:	South East
SEIAA	:	State Environmental Impact Assessment Authority
SHE	:	Safety, Health & Environment
SI	:	Sustainability initiatives
SIA	:	Social Impact Assessment
SOI	:	Survey of India
SPCB	:	State Pollution Control Board
SPM	:	Suspended Particulate Matter
SSW	:	South of South West
ST	:	Scheduled Tribe
SW	:	South West
TC	:	Total Carbonate
TDS	:	Total Dissolved Solids
TNT	:	Tri Nitro Toluene
ToR	:	Terms of Reference
TPD	:	Tonnes Per Day
TRC	:	Technical Research Cell
TW	:	Tube Well
UNFC	:	United Nations Framework Classification
UPA	:	Urban Planet Atlas
USDA	:	United States Department of Agriculture
USEPA	:	United States Environmental Protection Agency
VT	:	Vocational Training
RF	:	Reserved Forest
PF	:	Protected Forest
W	:	West
WNW	:	West of North West
WSW	:	West of South West
$\mu\text{g}/\text{m}^3$:	Micro gram per meter cube
μm	:	Micro Meter
cu. m	:	Cubic meter
dB	:	Decibel
gm/sec	:	Gram per second
gm/cc	:	Gram per cubic meter
hr/day	:	Hour per day
kg	:	Kilogram
Kg/hr	:	Kilogram per hour

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Kg/ha	:	Kilogram per hectare
km	:	Kilometer
m	:	Meter
mg/l	:	Milligram per Liter
mm	:	Millimeter
Sq.km	:	Square Kilometer
t/hr	:	Tonnes per hour

CHEPTER- I INTRODUCTION AND BACKGROUND

1.0 PURPOSE OF THE REPORT

Environmental Impact Assessment (EIA) is one of the proven management tools for integrating environmental concerns in development process and for improved decision making. The growing awareness, over the years, on environmental protection and sustainable development, has given further emphasis to the implementation of sound environmental management practices for mitigating adverse impacts from developmental activities. EIA study plays a vital role in sustainable development of a country. Recognizing its importance, the Ministry of Environment and Forest, Government of India had formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and to promote integration of environmental concern in project development.

Environmental Impact Assessment and Environment Management Plan report is prepared as per Office Memorandum No. J-11013/41 /2006-1A- 1 1 (f) (Part) dated 29/08/2017 issued by MoEF & CC, Gol, the Standard Terms of Reference (TOR) which have been which have been issued on 23th June 2020 for mining of Sand, Stone and Bajri in the applied mining lease area measuring 06-10-05 hectares from bed of Sukker khad Part - I falling under category "B1". The lease area lies near Mauza & Mohal- Gauri & Datwal, Tehsil Bijhri Datwal, and District Hamirpur, Himachal Pradesh (*Letter of Intent copy attached with the report as Annexure I*).

The entire stretch of applied mining lease area is Government land which is a part of bed of Sukker khad Part - I.

- The proposed project is manual extraction and collection of sand, Stone and bajri from bed of Sukker khad Part - I up to 1m (3 feet) bgl.

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- It has been proposed to extract around 90,450 TPA of Sand, Stone and Bajri; the extracted materials will get replenished during every monsoon season.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

1.2.1 IDENTIFICATION OF THE PROJECT:

As per vide letter Nos. Udyog-Bhu (Khani- 4) Laghu-723/2019-12287 dated 08-03-2019, a letter of Intent has been granted to Shri Rajkumar S/o Shri Joginder Singh, Village & P.O Samtana, Tehsil Bijhri Datwal and District Hamirpur (H.P) for a period of 10 Years. The area comprises of Khasra No.829 (Govt. Land) measuring 06-10-05 hectares falling in Mauza and Mohal Datwal and Gauri, Tehsil Bijhri Datwal, and District Hamirpur (H.P).

1.2.2 DETAILS OF THE PROJECT PROPONENT:

The details of the project proponent are given below:

Table 1.1

Name of the applicant	Shri Raj kumar S/o Joginder Singh
Name & Address of applicant	Village & P.O Samtana Tehsil- Bijhri Datwal, and District Hamirpur (H.P).
Name of Mine	Sand, Stone and Bajri Mining Project By Shri Raj kumar
Mineral	Sand, Stone and <i>Bajri</i>
Area (ha)	06-10-05 Ha
Location	Mauza and Mohal Datwal and Gauri, Tehsil Bijhri Datwal, and District Hamirpur Himachal Pradesh
Status of Project	New

1.3 BRIEF DESCRIPTION OF PROJECT

Mining of Sand, Stone and *Bajri* will be carried out only up to a depth of 1 m (3 feet) depth, using hand tools like shovel, pan etc only during the day time. The applicant intends to mine Sand, Stone and *Bajri* from the lease area. Mining will be confined to the applied lease area lies in the bed of Sukker khad Part - I. No rotational mining is proposed, complete mineable area shall be explored every year. The applied mining lease area is 06-10-05 hectare Situated Mauza and Mohal Datwal and Gauri, Tehsil Bihri Datwal, and District Hamirpur (H.P). No drilling & blasting is proposed. The proposed capacity of collection of Sand, Stone and *Bajri* will be 90,450 TPA.

1.3.1 SIZE

It has been proposed to extract around 90,450 tonnes per annum of Sand, Stone and *Bajri*, the extracted materials will get replenished during every monsoon season. The area comprises of Khasra No. 829 (Government Land) measuring 06-10-05 hectare falling in Mauza and Mohal Datwal and Gauri, Tehsil Bihri Datwal, and District Hamirpur (H.P).

The entire stretch of mining lease area is Government land which is a part of bed of Sukker khad Part - I. The proposed project is manual extraction and collection of sand, Stone and *bajri* from bed of Sukker khad Part - I up to one meter (3 feet) depth.

1.3.2 LOCATION

Mining will be confined to the allotted lease area lies in the bed of Sukker khad Part - I. The mining lease area is 06-10-05 hectare Situated Mauza and Mohal Datwal and Gauri, Tehsil Bihri Datwal, and District Hamirpur (H.P). The lease area is connected to the nearest metalled road towards sulhari and paplohal through unmettaled road at a distance of about 50m.

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The co- ordinates of the mine lease area are: *(Map showing pillar coordinates of applied lease area attached as Map no-IV.)*

Latitude : $31^{\circ} 33' 28.10'' N$ - $30^{\circ} 33' 28.00'' N$

Longitude : $76^{\circ} 32' 37.70'' E$ - $76^{\circ} 32' 55.00'' E$

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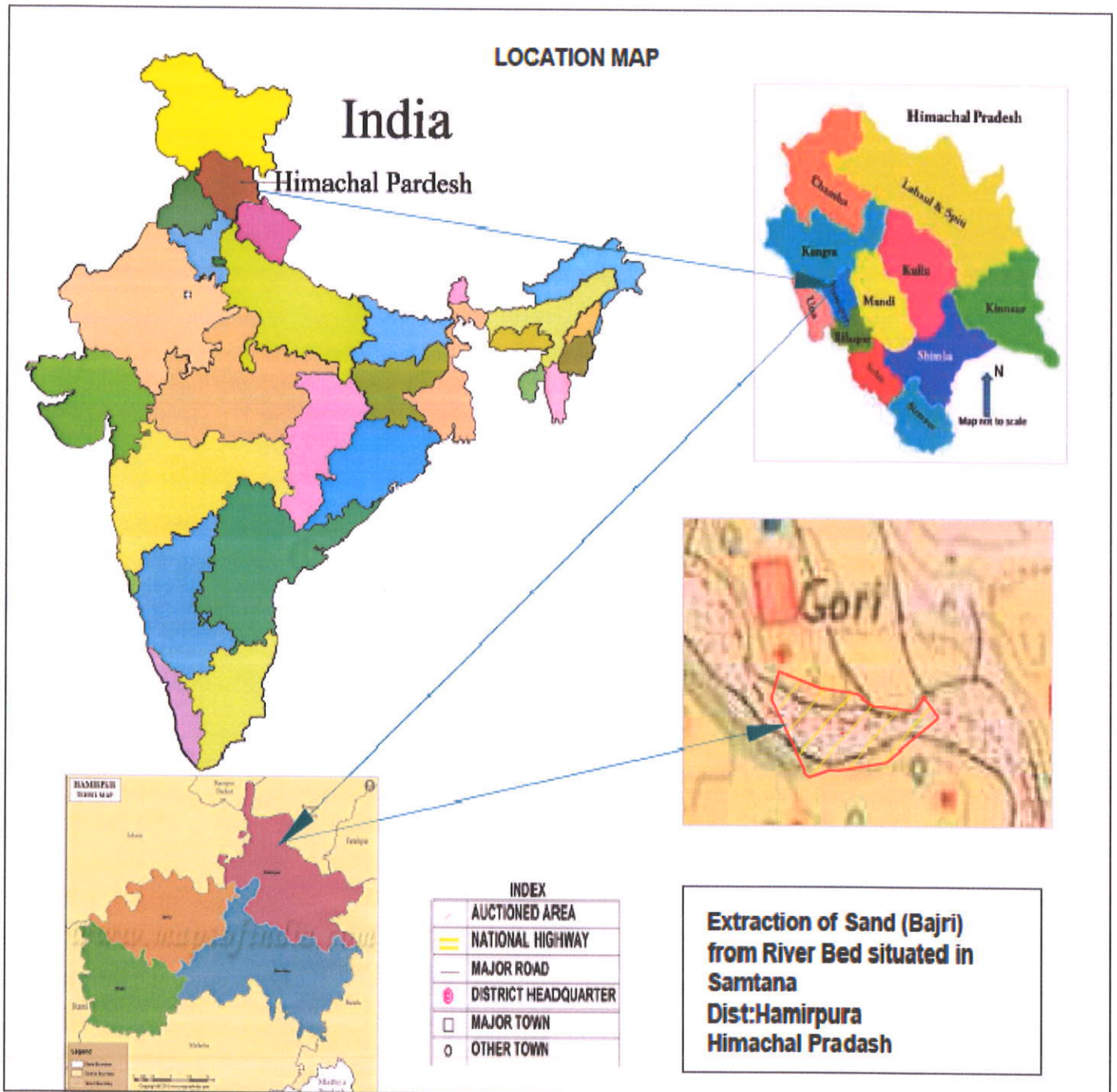


figure 1.1 Location Map

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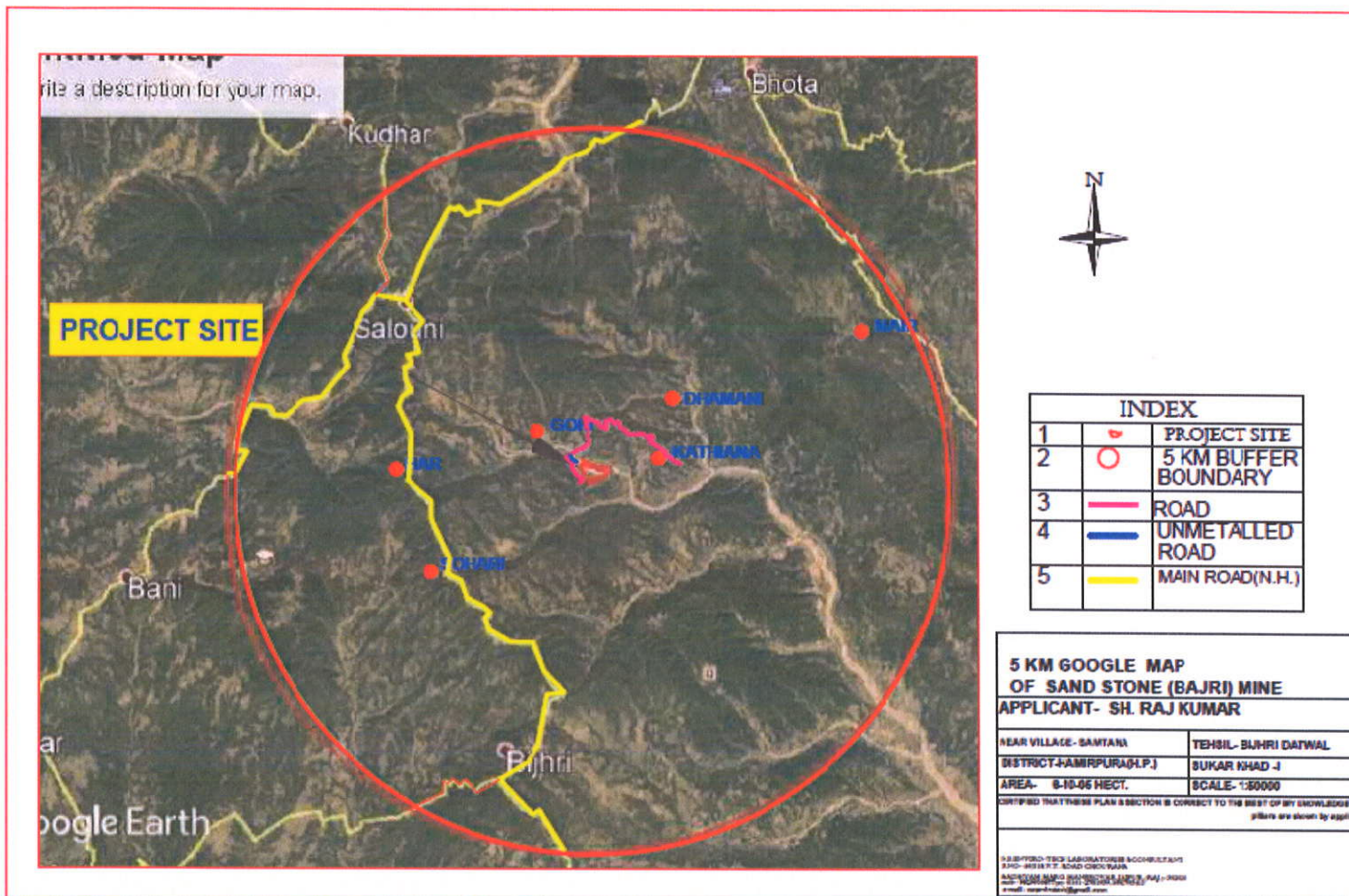


Figure 1.1: Google Imagery of the Mining Lease

1.3.3 CONNECTIVITY DETAILS

Table 1.2

Connectivity Details		Crow Fly Distance
Nearest Railway Station	Una Railway Station	Approx. 27 km in SSW direction
Nearest Airport	Shimla Airport	Approx. 74 km in SE direction
Nearest Highway	NH-88	Approx. 4.4 km

1.3.4 PROJECT'S IMPORTANCE TO THE COUNTRY AND THE REGION

The demand of Stone, bajri and sand in the area is increasing day by day both for private construction activities and infrastructure development by the Government Agencies. The State Governments has launched several projects of road construction, road widening, bridge construction and buildings for offices, school and other social activities. Thus, the extracted mineral from the mining lease area contribute to the development of infrastructure and prosperity of the area/region.

1.4 REGULATORY COMPLIANCES & APPLICABLE LAWS/REGULATIONS

- a) There is no legal case against the project and project proponent.
- b) There is no 'wild life sanctuary, biosphere reserve, nation park etc. within ten kilometers of the mining lease except some protected forests.

1.4.1 THE CONSULTANT

The studies were undertaken by The Consultant namely, N.S. Enviro-Tech Laboratories & Consultant ('NSETLC'). NSETLC is a National Accreditation Board for Education and Training (NABET) Accredited Consultant Organization (ACO) and is qualified to prepare EIA reports for Project / Activity 1(a) (Mining of Minerals), a mandatory requirement for agencies submitting such studies to regulators for the purpose of seeking EC.

1.5 GENERIC STRUCTURE OF EIA REPORT

The structure of this report follows the generic structure of Environment Impact Assessment document provided in Appendix III of EIA Notification, 2006. The report, complete with necessary tables, drawings and annexes is as follows:

List of Abbreviation

Chapter-1	:	Introduction and Background
Chapter-2	:	Project Description
Chapter-3	:	Description of Environment
Chapter-4	:	Anticipated Environmental Impacts and Mitigation Measures
Chapter-5	:	Analysis of Alternatives
Chapter-6	:	Environmental Monitoring Program
Chapter-7	:	Additional Studies
Chapter-8	:	Project Benefits
Chapter-9	:	Environmental Management Plan
Chapter-10	:	Summary and Conclusion
Chapter-11	:	Disclosure of Consultant Engaged

DRAFT EIA/EMP REPORT OF SAND STONE AND BAJRI MINE. TOTAL AREA IS 6-10-05 HECTARE, LOCATED NEAR VILLAGE SAMTANA, TEHSIL- BIJHRI DATWAL, DIST- HAMIRPUR (H.P)

1.6 SCOPE OF THE STUDY

The Standard Terms of Reference (TOR) which have been which have been issued on 2020 during by SEIAA, H.P. For seeking environmental clearance for mining of Sand, Stone and Bajri in the applied mining lease area, measuring 06-10-05 hectare falling under category "B1". The lease area lies near Mauza and Mohal Datwal and Gauri, Tehsil Bijhri Datwal, and District Hamirpur, Himachal Pradesh The points given in the TOR has been considered and its compliance is as under:-

Point Wise Compliance for TOR

Table 1.3

S.No	TOR	Compliance	Reference in the EIA Report
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	This is the new case hence no prior production was done.	Copy of Letter of Intent attached as Annexure II.
2	A copy of document in support of fact that the proponent is the rightful lessee of the mine should be given.	Sh. Raj Kumar is the right full lessee of the proposed mine, reference document attached with this report.	Copy of Letter of Intent attached as Annexure II.


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3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	The production figures, lease area, waste generation, mining technology in mine plan and EIA report are compatible with each other. For this project Public Hearing is Not Applicable.	Mentioned in Chapter 2, Working cum environment management plan is attached as Annexure III.
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ Toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	High resolution Imagery/ Toposheet with corner coordinates of the mine lease area has been incorporated in the chapter I of the report.	Given in chapter-I
5	Information should be provided in survey toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Survey toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area attached with report	Buffer map attached
6	Details about the land proposed for mining activities should be	Mining will be confined to	Copy of Letter of Intent


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	<p>given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.</p>	<p>the allotted lease area lies bed of Sukker khad Part - I. The mining lease area is 06-10-05 hectare Situated in Mauza and Mohal-Gauri and Datwal, Tehsil Bijhri Datwal, and District Hamirpur (H.P).</p>	<p>attached as Annexure II.</p>
7	<p>It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders</p>	<p>Environment policy mentioned in the report.</p> <p>Yes, the policy is prescribed for all standard operating process/procedure.</p>	-


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	or stakeholders at large, may also be detailed in the EIA Report.		
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	Mining will be carried manually. No blasting will be carried.	Proper personal protective Equipments will be provided to the workers.
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	The 5 km area around the periphery of the lease Area has been taken as study area for the purpose of EIA. The data contained in the EIA Report is given for 5 years for which mine plan has been prepared. The Production generation details are given in the report.	5km buffer map attached.

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10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Surface plan & Working of the lease area is attached with the EIA/EMP Report showing the pre-operational, operational and post-operational phases.	Surface plan & Working of the lease area is attached with the EIA/EMP Report as annexure VIII along with five working plan and also showing the pre-operational, operational and post-operational phases.
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	Silt/clay shall be generated as a waste which will be further use for leveling and plantation purpose. Source: Approved Mine Plan	Surface plan & Working of the lease area is attached with the EIA/EMP Report as annexure VIII.
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests,	Project is lies on the bed of Sukker khad Part - I which is not under possession of forest Department.	NOC slip attached as Annexure X.


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	the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.		
13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Project is lies on the bed of Sukker khad Part - I which is not under possession of forest Department.	Joint Inspection Report attached. NOC of forest slip attached as Annexure X.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Project is lies on the bed of Sukker khad Part - I which is not under possession of forest Department.	Joint Inspection Report. NOC of Forest slip attached as Annexure X.
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be	There are few reserved forests present within the study area.	Authenticated list of flora and Fauna is


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	given.	Study for Flora and Fauna has been done, List of vegetation in the RF/PF is incorporated in the report.	attached.
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	There is no wildlife or any protected area present within 10 km radius of the lease area.	Incorporated chapter IV
17	Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife Corridors, Tiger/Elephant Reserves (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated supported by a location map duly authenticated by Chief Wildlife Warden necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the state Wildlife Department /	There is no 'wild life sanctuary, biosphere reserve, nation park etc. within ten kilometers of the mining lease except some protected forests	5km buffer map attached.


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	Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.		
18	A detailed biological study for the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out covering both terrestrial and aquatic flora and fauna. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on field survey clearly indicating the Schedule of the fauna present, in case of any schedule-I fauna found in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished, Necessary/ allocation of funds for implementing the same should be made as part of project cost.	Detailed Biological study along with the list of flora & fauna is given in the report. There is no schedule I fauna found in the study area.	Authenticated list of flora and Fauna is attached.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so	Proposed project is not located in the Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining	Coordinates of the proposed project mentioned above.


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	required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	operations)	
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Proposed project is not located in the coastal zone	Not Applicable for this project
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be	R&R Plan/compensation details for the Project Affected People (PAP) are not applicable for this project as this project is located on the bed of Sukker khad Part - I.	--


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	<p>undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.</p>		
22	<p>One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be</p>	<p>Base line study was done from October'20-December'20 and the details are given in Chapter III</p> <p>Site-specific meteorological data has been collected and shown in the report.</p> <p>Date wise collected baseline AAQ data is enclosed with the report.</p> <p>It has been ensured that at least one monitoring station is within 500 m of the mine lease in the pre-dominant downwind direction.</p>	<p>Chapter III</p> <p>Chapter III</p>


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	such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given		
23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicle for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any and the habitation. The wind rose showing pre-dominant wind direction may also be indicated on the map.	Monitoring details incorporated in the report	Attached.
24	The water requirement for the	Total water requirement for	Attached


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	project, its availability and source to be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.	the project is 2.55 KLD, including 1.0 KLD for dust suppression and 1.0 KLD for plantation and 0.55 KLD for domestic purpose. Water Requirement for the mining process will be met from existing Borehole Present at own land bearing Khasra No. 829 at Mauza & Mohal- Gauri & Datwal.	
25	No mechanized mining/blasting shall be carried out.	The mining shall be taken manually with the use of hand tools, shovels, Pans etc. The material will be extracted and loaded directly into tractor trolleys by the workers themselves. The operation will be done in day time only, so there is no power requirement for the mining activity.	Working cum environment management Plan attached as Annexure VIII.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	No check dams are proposed as the adjoining land belongs to different private individuals. Moreover, the mining operations shall have no impact on the banks in any way. Source: Approved Mine Plan	Working plan for 5 year attached as Annexure VIII..
27	Impact of the project on the	The area being part of the	Chapter IV.


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	<p>water quality should be assessed and necessary safeguard measures, if any required should be provided.</p>	<p>River which receives annual rainfall, the mining area will get replenished during every rainy (monsoons) season. As abundant precaution, keeping in view the variation in rainfall particularly highest rainfall, which generally causes floods, the factor of eight cm annual replenishment is taken into consideration in general.</p> <p>Keeping in view of the replenishment factor, no rotational mining has been proposed. The complete mineable area shall be explored every year.</p> <p>Though the major mining activities will be under taken during the dry seasons and it proposed as per approved mining plan that mining will be carried out up to 1m bgl whichever comes first, hence no such impact will occur</p> <p><i>Source Approved mining Plan.</i></p>	
28	<p>Based on actual monitored data, it may clearly be shown whether working will intersect groundwater.</p>	<p>The area being part of the River which receives annual rainfall, the mining area will get replenished during every</p>	<p>Approved mining plan attached with the report</p>


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	<p>Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.</p>	<p>rainy (monsoons) season. As abundant precaution, keeping in view the variation in rainfall particularly highest rainfall, which generally causes floods, the factor of eight cm annual replenishment is taken into consideration in general.</p> <p>The proposed project is manual extraction and collection of sand, Stone and bajri from bed of Sukker khad Part - I up to 1 meter bgl whichever comes first.</p>			
29	<p>Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.</p>	<p>The entire stretch of mining lease area is Government land which is a part of bed of Sukker khad Part - I.</p>			
30	<p>Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.</p>	<table border="1"> <tr> <td>Site Elevation</td> <td> <p>Highest- 841m above MSL</p> <p>Lowest- 824m above MSL</p> </td> </tr> </table>	Site Elevation	<p>Highest- 841m above MSL</p> <p>Lowest- 824m above MSL</p>	<p>Source: Approved Mining Plan</p>
Site Elevation	<p>Highest- 841m above MSL</p> <p>Lowest- 824m above MSL</p>				

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31	<p>A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.</p>	<p>It is proposed to plant about 2010 trees for 5 years during monsoon season along the haul roads.</p>	<p>Details mentioned in Chapter II</p>
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32	<p>Impact on local transport infrastructure due to the Project should be indicated.</p> <p>Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.</p>	<p>There will be an increase in 29 to 30 trucks carrying the minerals per hour. The impact due to this has been detailed in the report.</p>	<p>There will be an increase in 29 to 30 trucks carrying the minerals per hour. The impact due to this has been detailed in the report.</p> <p>Maintenance of the roads will be carried out properly and alternative route pattern will be adopted in order to avoid any type of congestions.</p>
33	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.</p>	<p>Temporary rest shelters along with site services will be provided to the workers at mine site.</p> <p>Mine Office with. First aid station and Store for mining equipment.</p>	-
34	<p>Conceptual post mining land use and Reclamation and Restoration of mined out areas</p>	<p>The area being part of the River which receives annual rainfall, the mining area will</p>	Chapter IV.


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	(with plans and with adequate number of sections) should be given in the EIA report	get replenished during every rainy (monsoons) season. As abundant precaution, keeping in view the variation in rainfall particularly highest rainfall, which generally causes floods, the factor of eight cm annual replenishment is taken into consideration in general.	
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Each labour will undergo pre-placement medical examination. Thereafter they will be medically checked up half yearly for which tie up will be done with nearest PHC's. Impact on health is expected to be least for such mining projects.	Chapter VII
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	The mining shall be taken manually with the use of hand tools Such impact will not occur due to project.	


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37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Socio-economic influence will be positive as there will be potential availability of employment, improvement of physical and social infrastructures etc. In addition CSR has also proposed.	Chapter VI Chapter VII
38	Detailed environmental management plan to mitigate the environmental impacts, specific safeguard measures to control PM10 as well as pollution due to transportation should be given.	Detailed environmental management plan to mitigate the environmental impacts are discussed in the report. Safeguard measures to control PM ₁₀ has also been given.	Chapter IV
39	Public hearing points raised and commitment of the project proponent on the same along with the time action plan to implement the same should be provided if applicable.	Public Hearing yet to be conducted.	--
40	Details of litigation pending against the project, if any, with direction / order passed by any Court of Law against the project should be given.	There is no litigation pending against the project.	
41	The cost of project (capital cost and recurring cost) as well as the cost towards	Cost towards implementation of EMP is given in the report.	Chapter - VIII


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	implementation of EMP should clearly be spelt out.		
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report	Mining of Sand, Stone and Bajri will be carried out manually with the use of hand tools and shall be directly transported to the market as per demand.	As per approved mining plan
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	There is large demand of Stone, Sand and bajri and sand for construction activities in the region. It is essential raw material for construction of buildings, roads, bridges; check dams, etc in the area.	
44-Besides the above , the below mentioned general points should also be followed :-			
a	Executive Summary of the EIA/EMP Report	Executive Summary of the EIA/EMP Report is attached with the report.	complied
b	All documents to be properly referenced with index, page numbers and continuous page numbering.	Complied	

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c	Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated	Relevant details have been mentioned in EIA-EMP Report.	
d	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc using the MoEF & CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.	Compiled	Monitoring has been carried out by the NABL approved lab only.
e	Where the documents provided are in a language other than English, an English translation should be provided.	Compiled	--
f	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Enclosed	-

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g	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF from time to time should also be followed.	Instructions for the proponents and instructions for the consultants issued by MoEF from time to time has taken in consideration while preparing the EIA report and will be followed.	--
h	<p>Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons For such changes and permission should be sought, as the TOR may also have to be altered.</p> <p>Post Public Hearing changes in structure and content of the draft EIA/EMP (other than Modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.</p>	Enclosed	Form1 and PFR attached with the report.
i	As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified	Noted	

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	<p>report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.</p>		
j	<p>The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the Adjoining area.</p>	Noted	--
<p>Addition conditions are included given in standard Terms of References as published by MoEF&CC, Govt of India for Mining of Minerals, for the purpose of preparing Environment Impact Assessment Report, EMP for obtaining prior Environment Clearance with public consultation.</p>			
1	<p>The project proponent shall include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose</p>		


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	diagram of the site to plan the installation of PCDs.		
2	The project proponent will be permitted to carry out mining activities manually only.		
3	The project proponent will assess and erasure that, after ceasing mining operations, to undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and for restoration of the land to a condition which is fit for growth of fodder, flora, fauna etc.	Agreed & Noted	
4	The project proponent shall include to assess the plant variety of wild fruit plants as may be suitable to the area viz. wild peach, pear, guava, shehtoot i.e. under the plantation plan proposed in the EMP.	Agreed & Noted	
5	The project proponent shall submit valid Letter of Intent at the time of submission of EIA/EMP Reports.		

CHEPTEER-II PROJECT DESCRIPTION

2.0 GENERAL

As per Office Memorandum No. J-11013/41 /2006-1A- 1 1 (f) (Part) dated 29/08/2017 issued by MoEF & CC, Gol, the Standard Terms of Reference (TOR) which have been which have been issued on 23th June 2020 for the purpose of preparing Environment Impact Assessment Report, Environment Management Plan for obtaining prior Environment Clearance with public consultation, for mining of Sand, Stone and Bajri in the applied mining lease area measuring 06-10-05 hectares from bed of Sukker khad Part - I falling under category "B1". The lease area lies near Mauza & Mohal- Gauri & Datwal, Tehsil Bijhri Datwal, and District Hamirpur (H.P).

2.1 TYPE OF PROJECT

The proposed project is the river bed mining of Sand Stone and *Bajri* from bed of Sukker khad Part - I located near Mauza & Mohal- Gauri & Datwal, Tehsil Bijhri Datwal, and District Hamirpur Himachal Pradesh. The applied area comprises of Khasra No. 829 (Government Land) measuring 06-10-05 hectares, Mauza & Mohal- Gauri & Datwal, Tehsil Bijhri Datwal, and District Hamirpur (H.P). The lease has been sanctioned in favour of Sh. Raj Kumar, vide letter no. Udyog-Bhu (Khani- 4) Laghu-723/2019-12287 dated 08-03-19, Letter of Intent has been issued to Shri Raj kumar S/o Shri Joginder Singh, village & P.O. samtana Tehsil Bijhri Datwal and District Hamirpur (H.P.) for mining of sand, Stone and *bajri* for a period of ten years.

2.2 NEED FOR THE PROJECT

Building huge infrastructure as envisaged by Government of India particularly in road and housing sector requires basic building raw materials. The Sand Stone and *Bajri* is one of primary building material required for the


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purpose. The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is made available only from such mining. The Sand and *Bajri* extracted are in high demand at the local market for real estate and infrastructure industry. This project will also provide employment to local people helping them earn livelihood.

2.3 LOCATION DETAILS

Mining will be confined to the allotted lease area lies in the bed of Sukker khad Part - I. The mining lease area is 06-10-05 hectare Situated in Mauza & Mohal- Gauri & Datwal, Tehsil Bijhri Datwal, and District Hamirpur (H.P). The lease area is connected to the nearest metalled road towards sulhari and paplohal through unmetalled road at a distance of about 50m.

The co- ordinates of the mine lease area are: *(Map showing pillar coordinates of applied lease area attached as Map no-IV).*

Latitude : $31^{\circ} 33' 28.10'' N$ - $30^{\circ} 33' 28.00'' N$

Longitude : $76^{\circ} 32' 37.70'' E$ - $76^{\circ} 32' 55.00'' E$

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DETAILS OF APPLICANT

Table No. 2.1

Name of the applicant	Shri Raj Kumar
Name & Address of applicant	Shri Raj kumar S/o Shri Joginder Singh, village & P.O. samtana Tehsil Bijhri Datwal and District Hamirpur (H.P.)
Name of Mine	Sand, Stone and Bajri Mining Project By Raj Kumar S/o Shri Joginder Singh
Mineral	Sand, Stone and <i>Bajri</i>
Area (ha)	06-10-05 Ha
Location	Mauza and Mohal Gauri and Datwal, Tehsil Bijhri Datwal, and District Hamirpur (H.P)
Status of Project	New

2.4 DETAILS OF THE LEASE AREA

As per revenue record, the area is a Government land classified as Gair Mumkin Khad.

Table No. 2.2

Khasra Number	Owner of Land	Kism	Mauza/Mohal	Area (Ha)	Name of the Panchayat
829	Government Land	Gair Mumkin Khad	Gauri/ Datwal	06-10-05 Ha	Samtana
TOTAL				06-10-05 Ha	

Source-Approved Mining Plan

2.5 GEOLOGY

The Himalayan mountain system roughly surrounds the northern India. The mountain ranges extend for over 2400 km length from west to east. Geology of the Himalayas is extremely complex as it represents a site of continental collision. The collision of the Indian Plate and the Eurasian Plate led to joining of the two continents along a suture zone represented by a lineament. Two rivers - Indus in the west and Tsangpo in the east flow along this lineament which is also known as Indus suture zone. We will study the geology of the terrain between the Indus suture zone in the north and the Indo-Gangetic alluvial plains in the south.

Tectonically the Himalayas can be divided into four roughly parallel zones.

From north to south the zones are:

- Tethyan Himalayas
- Central Crystalline Zone
- Lesser Himalayas
- Outer Himalayas

The Central Crystalline Zone is made of Precambrian basement rocks mixed with granitic intrusions of Tertiary age. This zone has the highest mountain ranges of the Himalayas. This zone separates the northern Tethyan Himalayas from the southern Lesser Himalayas. These two zones contain sedimentary rocks of Palaeozoic-Mesozoic ages deposited over Precambrian basement. Whereas the Tethyan Himalayas consists of a fairly continuous succession rich in fossils, the Lesser Himalayas host rocks with scanty fossil records and with gaps in between. The Outer Himalayas forms a separate geological unit consisting of Quaternary sedimentary rocks originating from the rising Himalayas.

Each of these zones displays a highly complex geology disturbed by the Himalayan Mountain building processes. The geology of the Lesser Himalayas is particularly difficult to decipher because it contains several thrust sheets or nappes and is generally devoid of fossils.

GEOLOGICALLY Himachal Pradesh can be broadly divided into two major geo-tectonic zones viz. the Lesser Himalayan tectogen in the south and the Tethys Himalayan Tectogen in the north. These two tectonic zones are juxtaposed with each other along a major tectonic break collectively designated as Main Central Thrust in the sense defined by Srikantia (1988). Mandi District lying within the Lesser Himalaya and the Shiwalik Foothill comprises rocks ranging in age from Proterozoic to Quaternary. The oldest rocks are of undifferentiated Proterozoic age, comprising carbonaceous phyllite, schist, gneiss, quartzite and marble. The Ghoghar Dhar (Undifferentiated Proterozoic age) occurs as an intrusive body within the Chail Group of rock. This granite body is well foliated and composed of gneisses, granite with minor aplite and basic veinlets. The Sundernagar Group of Rocks of Meso- Proterozoic age is represented by quartzite with basic flows. The Shali Group of Rocks (Meso- Proterozoic) Comprising limestone, dolomite, (at places stromatolites) slate, & quartzite. The Subathu consists mainly, of olive green shales and grey shales. At the top, a band of white quartzite is exposed; this band of white quartzite has been taken as the marker, defining the top of the Subathu sequence. The thick sequence of brackish and fresh water sediments immediately succeeding the fossiliferous marine Subathu are classified as Dharamshala Formation. The Dharamshala Formation are widely exposed in the Mandi parautochthon, further west in the autochthon, these rocks are exposed, in the core of the Sarkaghat


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anticline. The Shiwalik Group of Middle Miocene of Early Pleistocene age comprises coarse clastic fluvial deposits of sandstone, clay and conglomerates. The Quaternary sediments (Older Alluvium and Newer Alluvium) along prominent channels consisting of sand, silt, clay, pebbles and cobbles occurring along present channels of Middle to Late Pliocene and Holocene age.

LOCAL GEOLOGY

The local geological sequence in the area is given in the figure 8 and Stratigraphy of the area is given in the table -4.

Stratigraphy of the Area.

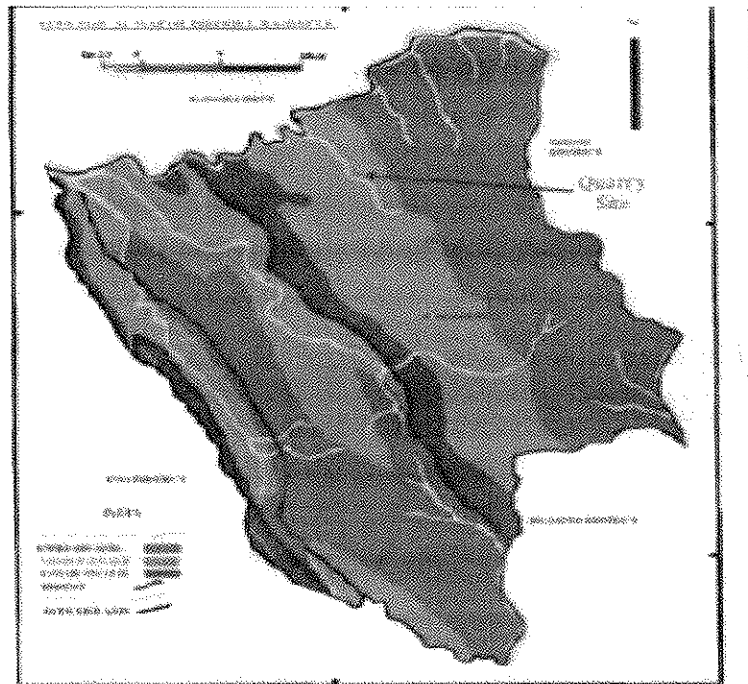
Sr. No.	Formation	Rocks
1	Newer Alluvium Channel Alluvium	Grey micaceous, fine to coarse grained sand, silt, clay, boulders, cobbles and pebbles of sandstone and quartzite
2	Upper Siwalik	Predominantly massive conglomerate with red and orange clay as matrix and minor sandstone and earthy buff and brown claystone
3	Middle Siwalik	Massive Sandstone with minor conglomerate and local variegated claystone
4	Lower Siwalik	Alternation of fine to medium- grained sporadically pebbly sandstone, calcareous cement and prominent chocolate and medium maroon claystone in the middle part

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5	Upper Dharamshala	Medium to fine grained, hard, bluish grey and massive Sandstone, green clay and siltstone
6	Lower Dharamshala	Hard, grey, well bedded and high mica content Sandstone

GEOLOGICAL CONDITIONS OF CATCHMENT

The Present site lies in the riverbed of sucker khad, a tributary of Seer Khad. Sukker khad Part - I is a tributary of seer khad and is non-perennial in nature. It originates near village Dagwar at an altitude of 1016 mtrs and leaves District Hamirpur near village Riana where the R.L. drops to 538 mts. near origin it flows in eastern direction and then it swings towards south eastern direction up to District Bilaspur boundary. The stream is seasonal in nature and water flows in it only during rainy season. The highest point of auctioned area is 841 m above MSL and lowest point is 824 m above MSL and average width is 100 to 110 Mtrs.



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EXISTING LAND USE PATTERN, AND SHORTEST DISTANCES FROM FORESTS, WATER BODIES, ECO-SENSITIVE AREAS, ETC.

The mining lease area is situated in the river course of Sukker khad Part - I. The stream course is occupied with river borne deposits which comprises of Boulders Cobbles, Pebbles, Sands and Silt/clay deposits forming channel deposits of annual deposition. The rock along the banks is terrace alluvium and fan alluvium and in higher reaches of catchments Upper Siwalik formation. The land, in which the mining lease lies, is at present as per revenue record, the area is a Government land classified as Gair Mumkin Khad.

There is no forest land or agriculture land in the mine lease area. There is no eco-sensitive area within 15 km radius of mine lease area.

EXISTING INFRASTRUCTURE

The site has no existing infrastructure, except for connecting road for transportation.

GEOMORPHOLOGY & SOILS

(Central Ground Water Board, Hamirpur, Ministry of Water Resources, District Book 2013)

The terrain of the district is mostly hilly and undulating. The surface elevation ranges from 400 m to 600 m amsl along the Beas river valley and in lower reaches of Kunah Khad in the northern part of the district. The elevation is more than 900 m above msl in the eastern part of the district. The altitudinal variation in general, ranges between 600 m to 900 m above mSL. Sola Singhi hill ranges forms the western boundary of the district, with a maximum elevation of 1145 m above mSL. Deep gulleys and gorges are formed in the north-eastern part of the district. The river/khad valleys are


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broad in the southern part of the district, mainly along the Sukar and Sir Khad in Bhorang-Jahu- Dhankar areas. In the drainage basin of Beas River, the general ground slope is towards north, while in the Sutlej River this slope is towards south.

Hamirpur district forms a part of drainage system of the Beas River in the northern and western parts, whereas in the eastern and southern parts Sutlej River system drains the areas. The drainage pattern is dendritic to sub dendritic. Drainage density is coarse to medium.

The Beas River: The entire drainage of the Beas River above Pandoh (Mandi) has been diverted to Govind Sagar (The Sutlej River). The river receives only regulated flows downstream of Pandoh and the flows contributed by the Uhl River, Neogal Khad and Binwa Khad along with the other minor seasonal rivers/Khads directly join the river Beas. Other important tributaries of Beas are Baker, Salagi, Nauli, Maili and Jangled Khads. In Hamirpur district's, Kunah and Man khads are the major streams. These along with other major khads join the Beas River.

Kunah Khad: Kunah is the most important tributary of the Beas River in the district. . Major tributaries of this khad are Sukar, Jhaniari, Gasota, Hathali and Sukrala Khads. These khads are perennial and have floods during rainy season.

Man Khad: Man Khad is another perennial tributary of Beas River which originates near Deotsidh and flows towards NNW, to join Beas River to the west of Nadaun. Important tributaries of this khad are Haretta, Bambloo and Matwara Khads.

Sukker khad Part - I: Sukker and Sir Khads are the main khads joining the Sutlej River and Govind Sagar.


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These occupy the southernmost part of the district and flow towards south to directly fall into the Govind Sagar. These are ephemeral in the upper parts and become perennial in the lower parts.

Sir Khad: Sir Khad is another important khad, which is draining the eastern most part and flows towards east. This khad is ephemeral in upper catchment area and becomes perennial in lower parts

2.6 MINING

The mining is confined to extraction of Sand Stone and *Bajri* from the proposed mine site. The extracted sand stone and bajri will be collected in its existing form. Mining of Sand Stone and *Bajri* will be carried out only up to a depth of 1 m (3 feet) depth.

1. The mining shall be taken manually with the use of hand tools.
2. No blasting is required.
3. The area being part of the River which receives annual rainfall, the mining area will get replenished during every rainy (monsoons) season. As abundant precaution, keeping in view the variation in rainfall particularly highest rainfall, which generally causes floods, the factor of eight cm annual replenishment is taken into consideration in general.
4. Keeping in view of the replenishment factor, no rotational mining has been proposed. The complete mineable area shall be explored every year.
5. Though the major mining activities will be under taken during the dry seasons.
6. Thus effective mining will be only for 300 days in a year.
7. Mining activity will be done in day time only.


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The area of the proposed mine is 06-10-05 ha, and the proposed capacity of Sand, Stone and *Bajri* will be 90,450 TPA. The Applicant intends to mine Sand, Stone and *Bajri* from the allotted lease area.

2.6.1 PRODUCTION PARAMETERS

The Mineral production target for the Next five years is given below:

Table Showing Year wise Production Programme

Table No. 2.6

Year	Production of Material				
	Boulders	Bajri	Sand	Silt/Clay	Total
1 st Year	36180	27135	18090	9045	90450
2 nd Year	36180	27135	18090	9045	90450
3 rd Year	36180	27135	18090	9045	90450
4 th Year	36180	27135	18090	9045	90450
5 th Year	36180	27135	18090	9045	90450
Total	180900	135675	90450	45225	452250

Source: - Approved mine Plan.

2.7.1 Climatic Data from Secondary Sources

Climate in various parts of the district, depend primarily much on the elevation, which varies from less than 200 meters to more than 1000 meters


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above mean sea level. The climate can broadly be divided into three broad seasons' viz. winters from October to March, summer season from April to June and monsoon season from July to September. The district receives moderate rainfall and bulk of it is received during the months of July and August. The average annual rainfall in the district is 1,340.72 mm, out of which 82% occurs during June to Sept.

(Source: Ground Water Information Booklet, Central Ground Water Board, Ministry of Water Resources, District Hamirpur, Himachal Pradesh 2013).

TOWNSHIP

Since this mining is intermittent and labour employed would be mostly from adjoining areas, no colony is proposed.

2.7.2 POWER, WATER SUPPLY AND OTHER INFRASTRUCTURE REQUIREMENTS

2.7.2.1 POWER

All the activities will be carried during the day time only. Hence, no power is required.

2.7.2.2 WATER SUPPLY

Table No. 2.5

Activity	Water Requirement (KLD)
Dust suppression +Plantation	2.0
Domestic purpose	0.55
Total	2.55

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Water Requirement for the mining process will be met from existing Borehole Present at own land bearing Khasra No. 829 at Mauza & Mohal- Gauri & Datwal.

2.7.2.3 INFRASTRUCTURE:

- The site services like temporary rest shelters for workers working at the mine site.
- Facilities for sanitation-community toilets with septic tanks.

2.8 RECLAMATION:

2.9 MINE WASTE DISPOSAL:-

2.9.1 WASTE –DISPOSAL ARRANGEMENT

About 9045 metric tonnes / annum waste will be generated contains Silt and clay mixture, which will be further use for leveling and Plantation Purpose.

The following quantity of waste shall be generated during five years of mining:-

Table No. 2.6

Year	Quantity tones/annum
1st	9045
2nd	9045
3rd	9045
4th	9045
5th	9045
TOTAL	45,225

(Source- Working cum Environment management Plan)

2.9.2 RECLAMATION PLAN

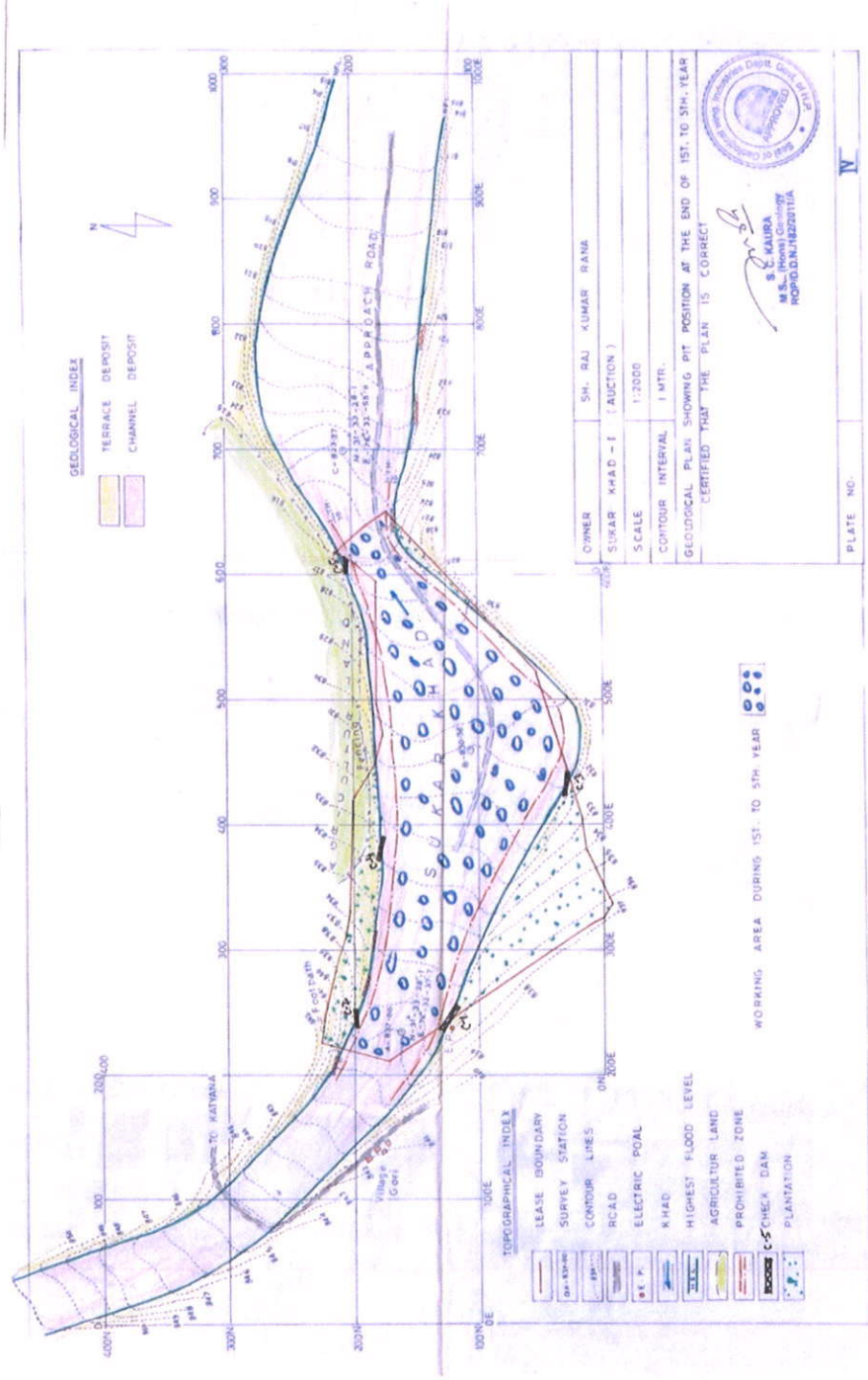
The afforestation programme is the most important programme to improve the environment and ecological balance of the area. It is observed that there is no land available in the mine lease area where the plantation in the phased manner can be carried out. However plantation will be done along the haul road side.

The year wise area proposed for plantation is as under:

Table 2.7

S.NO	Year	Area in Ha.	NO OF PLANTS
1	1 st YEAR	0.4026	402
2	2 nd YEAR	0.4026	402
3	3 rd YEAR	0.4026	402
4	4 th YEAR	0.4026	402
5	5 th YEAR	0.4026	402
	Total	2.0130 Ha	2010

Figure 2-1: Surface Geological Plan and Sections of the ML Area



(Signature)
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Flow Chart showing the operation:

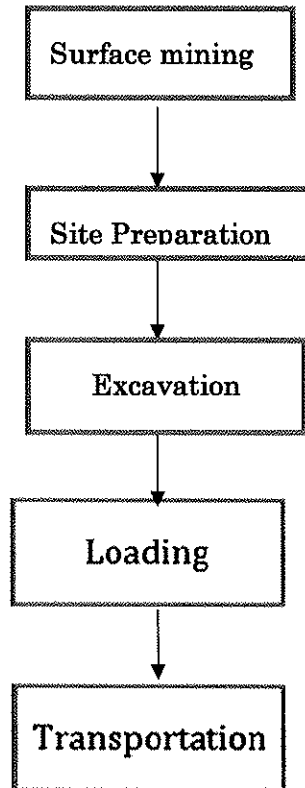


Figure 0-2: SAND, STONE & BAJRI Mining Process

2.10 PROJECT COST

Expected project cost is 50.50 Lac.

2.11 PROJECT IMPLEMENTATION SCHEDULE

The mine is not working presently. We will operate the mine after getting Environment Clearance, Consent to Establish & Consent to operate.

CHAPTER III-DESCRIPTION OF ENVIRONMENT

3.0 INTRODUCTION

This section contains the description of baseline studies of the 10 km radius of the area surrounding Mohal and Mauza Gauri and Datwal and District Hamirpur (H.P). The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed.

It is necessary to study the present scenario of the area by collecting the information on following parameters:

- Land Environment
- Soil Environment
- Water Environment
- Air Environment
- Meteorology
- Noise Environment
- Biological Environment
- Socio-economic Environment

The relevant information and data (Both Primary & Secondary) were collected in core as well as buffer zone (10 km. distance from the lease boundary) during Post Monsoon of 2018 in accordance with the guidelines for preparation of EIA studies.

Secondary data were collected from Indian Meteorological Department (IMD), State Mines & Geology, Hydrology, Ecology, Socio-Economic from SOI, Water Resource, Forest, Census, Statistical departments etc.


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Table 3-1: Environmental Setting of the Study Area

Sr. No.	Particulars	Details								
A.	Nature of the Project	Sand, Stone and Bajri Mining Project By Shri Raj Kumar								
B.	Size of the Project									
1.	Applied Mine Area	06-10-05 ha								
2.	Proposed Production capacity	90450 TPA (ROM)of Sand ,Stone & Bajri								
C	Location Details									
1.	Village	Mauza & Mohal- Gauri & Datwal								
2.	Tehsil	Bijhri Datwal								
3.	District	Hamirpur								
4.	State	H.P.								
5.	Latitude & Longitude	The Latitude & Longitude of Mining Lease Area is mentioned below-								
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">The Latitude & Longitude of Mining Lease Area</th> </tr> <tr> <th>Latitude (N)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>31° 33' 28.10" N</td> <td>76° 32'37.70" E</td> </tr> <tr> <td>31° 33' 28.00" N</td> <td>76° 32'55.00" E</td> </tr> </tbody> </table>			The Latitude & Longitude of Mining Lease Area		Latitude (N)	Longitude (E)	31° 33' 28.10" N	76° 32'37.70" E	31° 33' 28.00" N	76° 32'55.00" E
The Latitude & Longitude of Mining Lease Area										
Latitude (N)	Longitude (E)									
31° 33' 28.10" N	76° 32'37.70" E									
31° 33' 28.00" N	76° 32'55.00" E									
6.	Toposheet No.	H43E10								
D	Environmental Settings of the Area									
1.	Ecological Sensitive Areas	Project lies on Sukker khad Part - I.								
2.	River / water body	Sukker khad Part - I Project lies on this river only. Sukkar and Sir Khads are the main khads joining the Sutlej River and Govind Sagar Lake.								
3.	Nearest Town / City	Hamirpur About 2.42km in SE direction Bijhri Datwal.								
4.	Nearest Railway Station	Una Railway Station about 27 Km. from								


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SAND, BAJRI &
EMP REPORT

Sr. No.	Particulars	Details
		applied lease area.
5.	Nearest Airport	Shimla Airport Approx. 74 km in SE direction
6.	State Boundary	No state boundary in 15 Km
7.	Seismic Zone	Seismic zone – V
D	Cost Details	
1.	Total Project Cost	Rs. 50.50 Lakh
E	Requirements of The Project	
1.	Proposed Water Requirement	2.55 KLD
2.	Fuel requirement	0.5 KLD
3.	Man Power Requirement	10 to 15 (Skilled and unskilled persons)

3.1 LAND ENVIRONMENT

The total land of the study area is divided into different categories.

- Built-up Area
- Cropped Land
- Fallow Land
- Vegetation
- Barren Land
- Water Body

3.1.1 DATA INPUT

IRS LISS3 Multispectral digital FCC (False Color Composite) data from NRSC Bhuwan Portal has been used for preparation of Land use/ Land cover thematic map of study area. Project site mine plan map & Google maps and Toposheet has been used as a reference map for preparation of base layer map like road, rail network, project site boundary, landmarks point etc.

Satellite Image : IRS LISS3

Band Combination : 2, 3, 4

DIP Software : ERDAS Imagine 9.2 & Arc GIS 9

3.1.2 METHODOLOGY

Land use / Land cover map preparation, Base map creation; and Geometric correction of satellite image has been processed using ERDAS Imagine 9.2 Software. The methodology used for land use land cover study is as follows:

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3.1.3 GEO REFERENCING OF TOPO MAP

SOI Toposheet has been geo-referenced in geographic lat/long coordinate system using ERDAS Imagine Software.

3.1.4 BASE MAP LAYER CREATION

Base map has been prepared using ancillary Google maps as a reference map on 1:50000 scale. In base layer linear and point feature like road, rail, canal, village location and plant site have been created in vector data format

The land use of the study area is given in **Error! Reference source not found.**

Table 3.2: Existing Land use pattern of the Study Area

The land use of the study area is tabulated below:

S. No.	Description	Area in Hectares	Percentage share in total area
1	Settlement	1820.46	5.61
2	Forest	12548.36	38.68
3	Open Scrub/ other Land	3692.55	11.38
4	Agriculture	8080.23	24.91
5	Water bodies	3273.58	11.59
6	Waste/ Other Land	2540.78	7.83
Total			32442.73

The 5 km radius land use map is attached.


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3.2 TOPOGRAPHY & DRAINAGE OF THE STUDY AREA

The applied area forms a part of the Sukker khad Part - I bed. The stream bed is covered with sand of brought down during the floods in the stream. The area comprises predominantly the sand only. It forms the part of satluj drainage system. Topographic map.

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i. PARTICULATE MATTER (PM):-

The CPCB method and IS 5182 (Part-XXIII) adopt a very similar approach to particulate sampling. There are some differences in the expressions used, but they are generally of no practical significance. It is recommended that CPCB method is adapted.

II. EQUIPMENT CALIBRATION:

For accurate testing of emission sources, the components of the sampling train is calibrated by outsource and supplier (Master Calibrator) standards and solutions are used, calibrated under certified reference material. The Ambient air quality monitoring locations are marked in **Map**.

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3.3 METHODS FOR MONITORING

Table 3.3: Methods adopted for PM₁₀, PM 2.5, SO₂ and NO₂

Parameters	Technique	Technical Protocol	Minimum Déetectable Limite
PM ₁₀	Gravimetric method	IS 5182 (Part-XXIII)	5 (µg/m ³)
Sulphur Dioxide	West and Gaeke	IS-5182 (Part-II)	3 (µg/m ³)
Nitrogen Dioxide	Jacob & Hochheiser	IS-5182 (Part-VI)	7 (µg/m ³)
PM _{2.5}	Gravimetric method	CPCB Guidelines - Volume-I, May 2011	5 (µg/m ³)

3.3.1 BASELINE DATA

I AIR ENVIRONMENT

Ambient air quality monitoring stations were selected primarily on the basis of surface influence, demographic influence and meteorological influence. 24 hourly monitoring was carried out for SO₂, NO₂, PM_{2.5} & PM₁₀ twice a week at each station. This study was done for a period of 3 months October, 2020 to December, 2020.

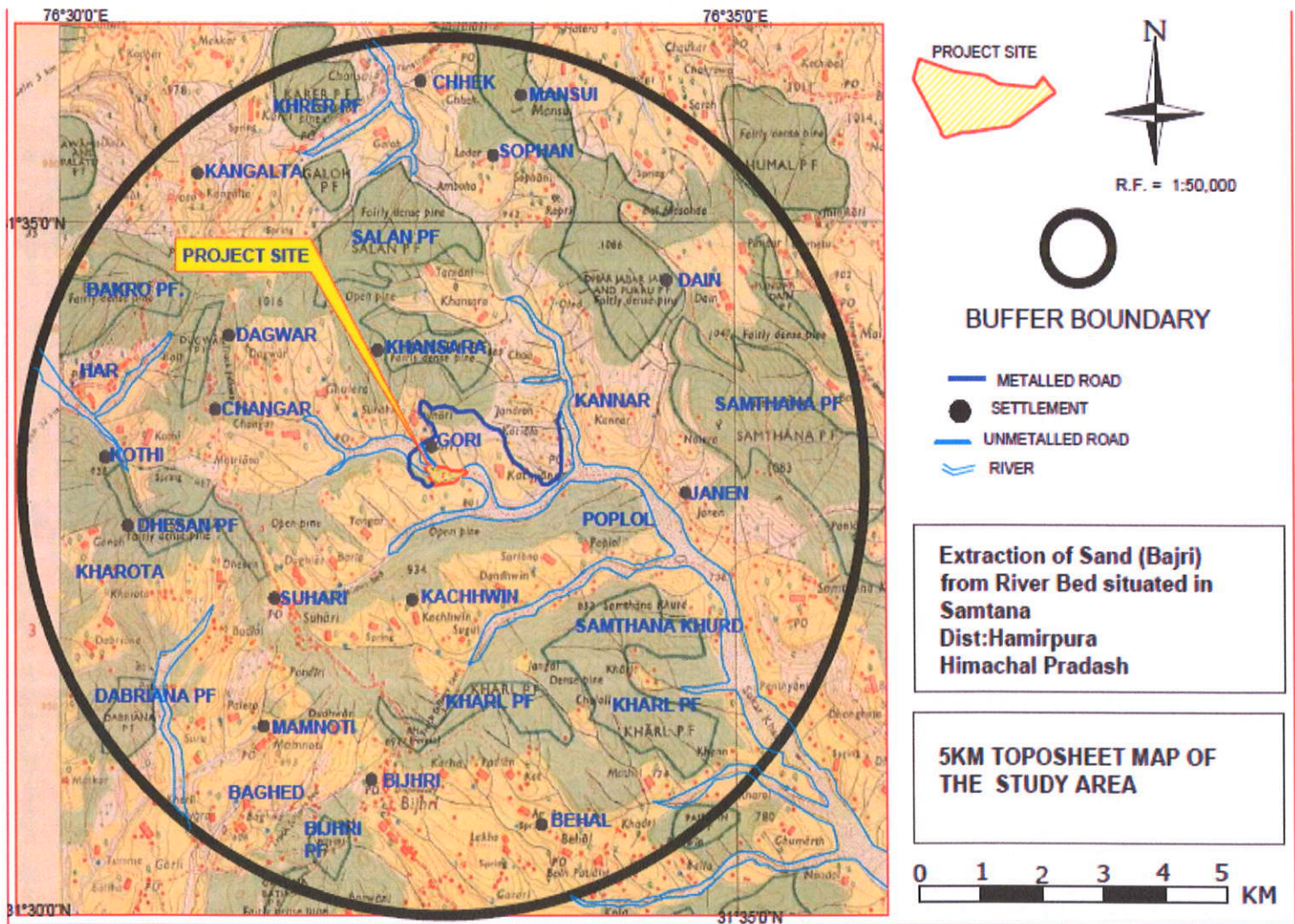
b. METHOD OF MONITORING

The Central Pollution Control Board (CPCB) has published comprehensive document on emission testing regulations (“Emission Regulations Part-3, 1985”). Those procedures relevant to the particulate monitoring are summarized below:


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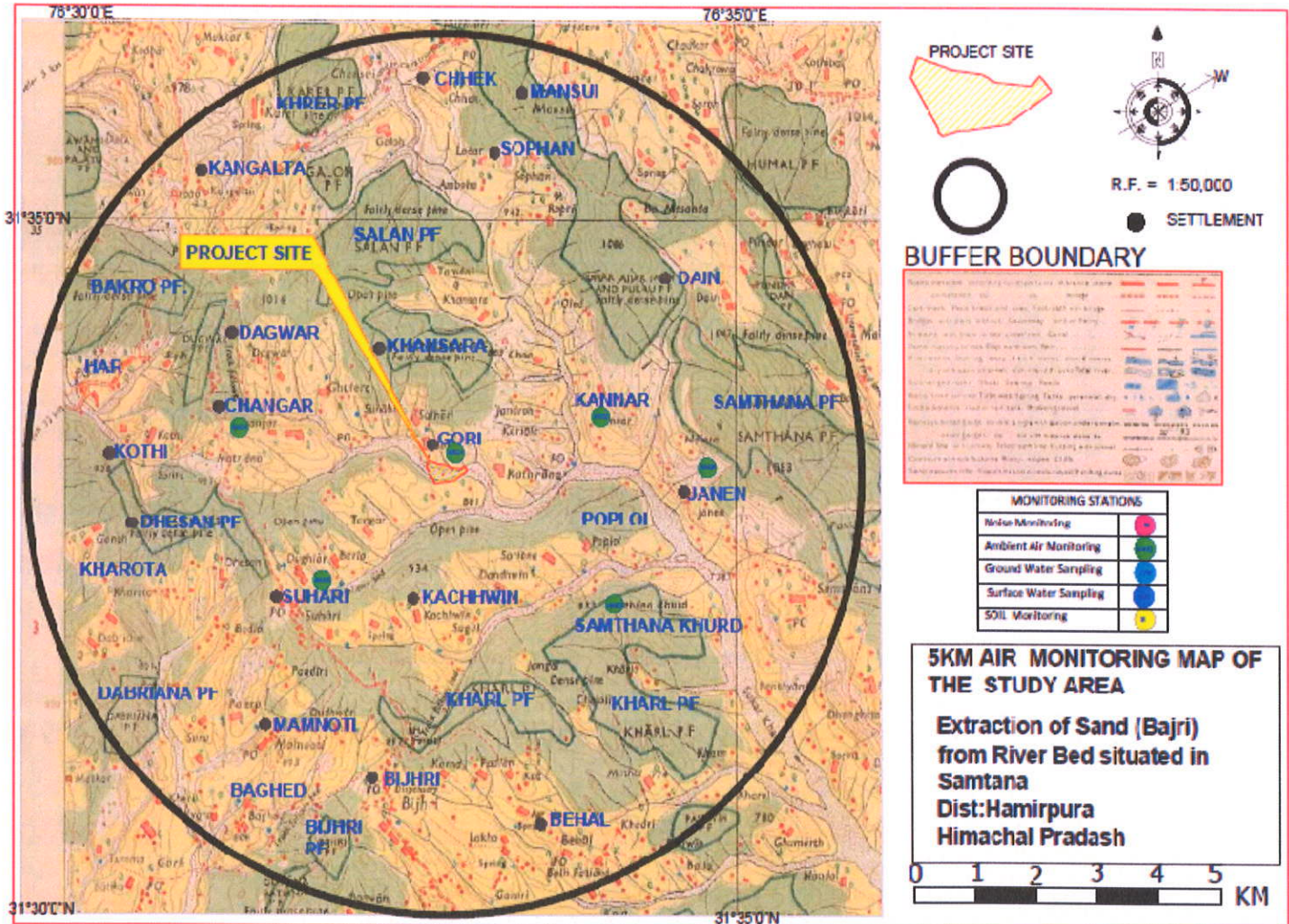
DRAFT EIA/EMP REPORT OF SAND, STONE AND BAJRI MINE. TOTAL AREA IS 6-10-05 HECTARE, LOCATED NEAR VILLAGE SAMTANA, TEHSIL- BIJHRI DATWAL, DIST- HAMIRPUR (H.P)

Figure No. 3.1 Topographic Map



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Figure No. 3.2 Air Monitoring Station Map



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The ambient air quality data were collected to find the existing GLC. The data is given in Table No. 3.3 (ii).

Table 3.3 (i) ambient air quality monitoring stations

S. No.	Location	Station Name	Approx Distance (KM)	Direction
1.	AQ1	Near Project Side	00	--
2.	AQ2	Gori Dathwal	0.3 km	N
3.	AQ3	Changar	1.0	SE
4	AQ4	Suhari	0.6	N
5	AQ5	Kannar	4.6	SE
6	AQ6	Janen	4.7	SE
7	AQ7	Samtana Khurd	5.11	SE

Table 3.3 (ii): Ambient Air Quality Status

S. No.	Pollutant	Location	No. of observation	Minimum	Maximum	Average	98 th Percentile	CPCB Standards
1.	SO ₂ (µg/m ³)	AQ1	24 hours twice a week	13.56	15.85	14.67	15.80	80.0
		AQ2		10.91	16.14	13.24	16.01	
		AQ3		11.48	13.76	12.58	13.72	
		AQ4		10.48	14.92	12.62	14.83	
		AQ5		10.47	15.18	12.75	15.01	
		AQ6		12.12	16.50	14.19	16.39	
		AQ7		11.38	13.68	12.68	13.65	
2.	NO ₂ (µg/m ³)	AQ1	24	22.81	28.33	25.06	28.07	80.0
		AQ2		18.79	24.76	21.71	24.74	


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		AQ3		20.59	23.71	22.08	23.63	
		AQ4		19.10	22.72	20.89	22.64	
		AQ5		16.66	21.21	18.99	21.10	
		AQ6		21.94	26.43	23.80	26.29	
		AQ7		19.41	23.02	21.24	22.97	
3.	PM ₁₀ (µg/m ³)	AQ1	24	77.90	88.59	84.24	88.46	100.0
		AQ2		76.24	79.81	78.02	79.74	
		AQ3		79.07	85.66	81.9	85.49	
		AQ4		72.61	78.50	75.31	78.34	
		AQ5		71.43	76.94	74.17	76.77	
		AQ6		80.90	85.32	83.34	85.26	
		AQ7		65.49	72.12	68.77	71.91	
4.	PM _{2.5} (µg/m ³)	AQ1	24	49.04	62.59	76.91	62.45	60.0
		AQ2		38.30	41.74	40.03	41.67	
		AQ3		38.54	43.34	40.89	43.26	
		AQ4		36.42	40.98	38.31	40.77	
		AQ5		34.97	39.15	37.03	39.09	
		AQ6		39.56	44.77	42.92	44.60	
		AQ7		34.68	43.15	38.57	43.02	

BDL: Below Detectable Level

3.4 OBSERVATIONS:

Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM₁₀ amongst all the 7 AQ monitoring stations were found to


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be $71.43\mu\text{g}/\text{m}^3$ at AQ5 and $76.94\mu\text{g}/\text{m}^3$ at AQ1, respectively. This dust concentration will get considerably reduced the moment measures are taken for dust control at the crusher itself, like the wet crushing, or extraction of dust laden air and cleaning of dust thereof.

As far as the gaseous pollutants SO_2 and NO_2 are concerned, the prescribed CPCB limit of $80\mu\text{g}/\text{m}^3$ for residential and rural areas has never surpassed at any station. The minimum concentrations of SO_2 are $10.91\mu\text{g}/\text{m}^3$ at AQ2 & maximum concentrations of SO_2 are $14.92\mu\text{g}/\text{m}^3$ at AQ4, respectively. The minimum & maximum concentrations of NO_2 were found to be $21.94\mu\text{g}/\text{m}^3$ at AQ6 & $23.02\mu\text{g}/\text{m}^3$ at AQ7 respectively. The air environment around this area is also affected by agriculture activities in the area.

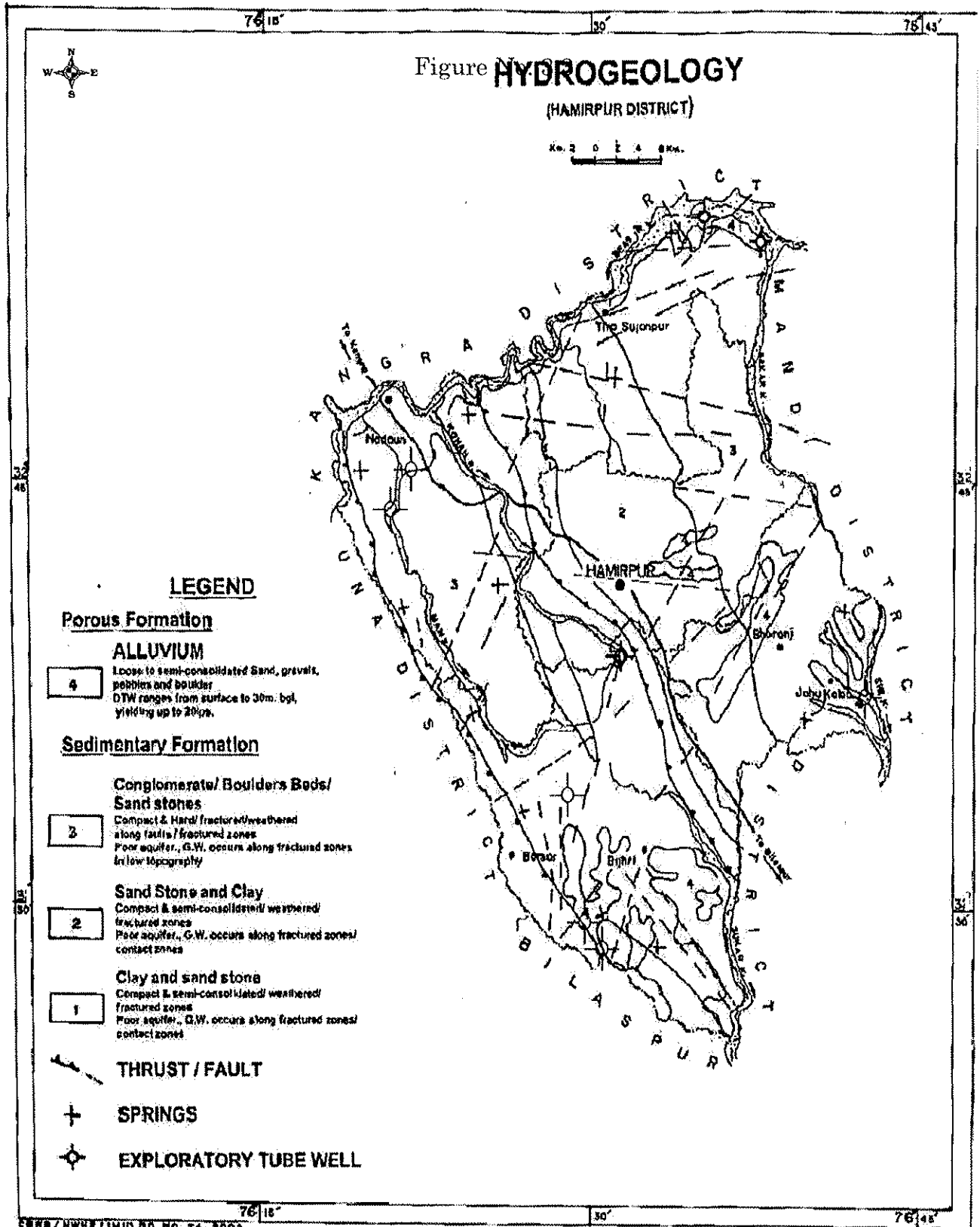
3.5 HYDROLOGY AND PHYSIOGRAPHY OF THE STUDY AREA

3.5.1 HYDROLOGY

Hydro geological map of the district is presented in below mentioned Fig. Ground water occurs under water table conditions both in unconsolidated and consolidated formations. Its occurrence is controlled by topography, physiography and structural features of the geological formations. The movement of ground water in hard rock areas is governed by size, openness, interconnection and continuity of structurally weak planes while in unconsolidated rocks, ground water movement takes place through pore spaces between grains. Water bearing properties of different aquifers are described below.


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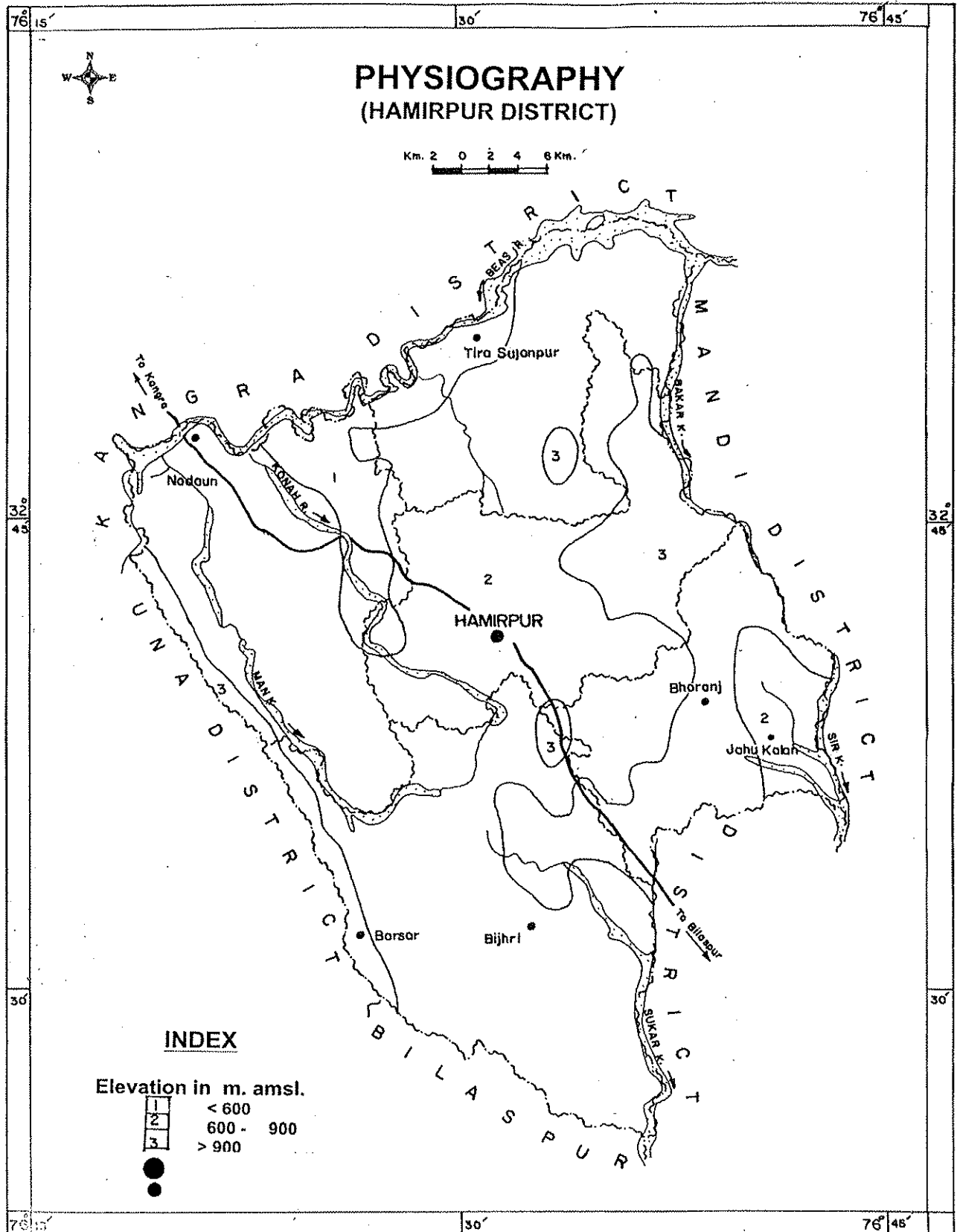
CGWB/ NWHM (SMU) 50, No. 74- 2502.

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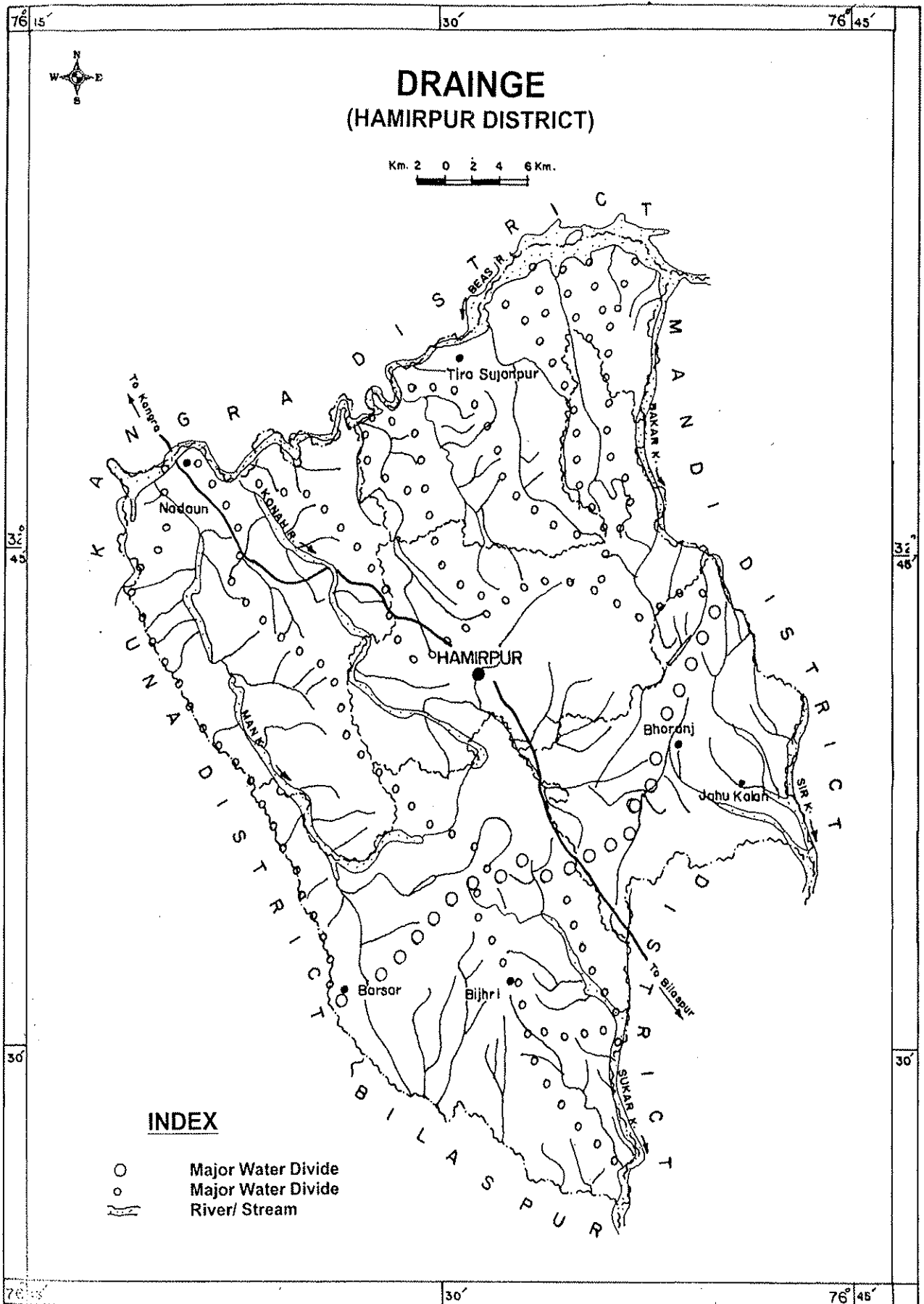
3.5.2 PHYSIOGRAPHY

Figure No. 3.4 Physiography and Drainage Map



CGV/ENVHR/JMU/DO.NO. 2002-72

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CGO, BHRI, JMU, DO. NO. 2002-71

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3.5.2 RELIEF

The lease area is valley plain surface having Sukker khad Part - I Bed.

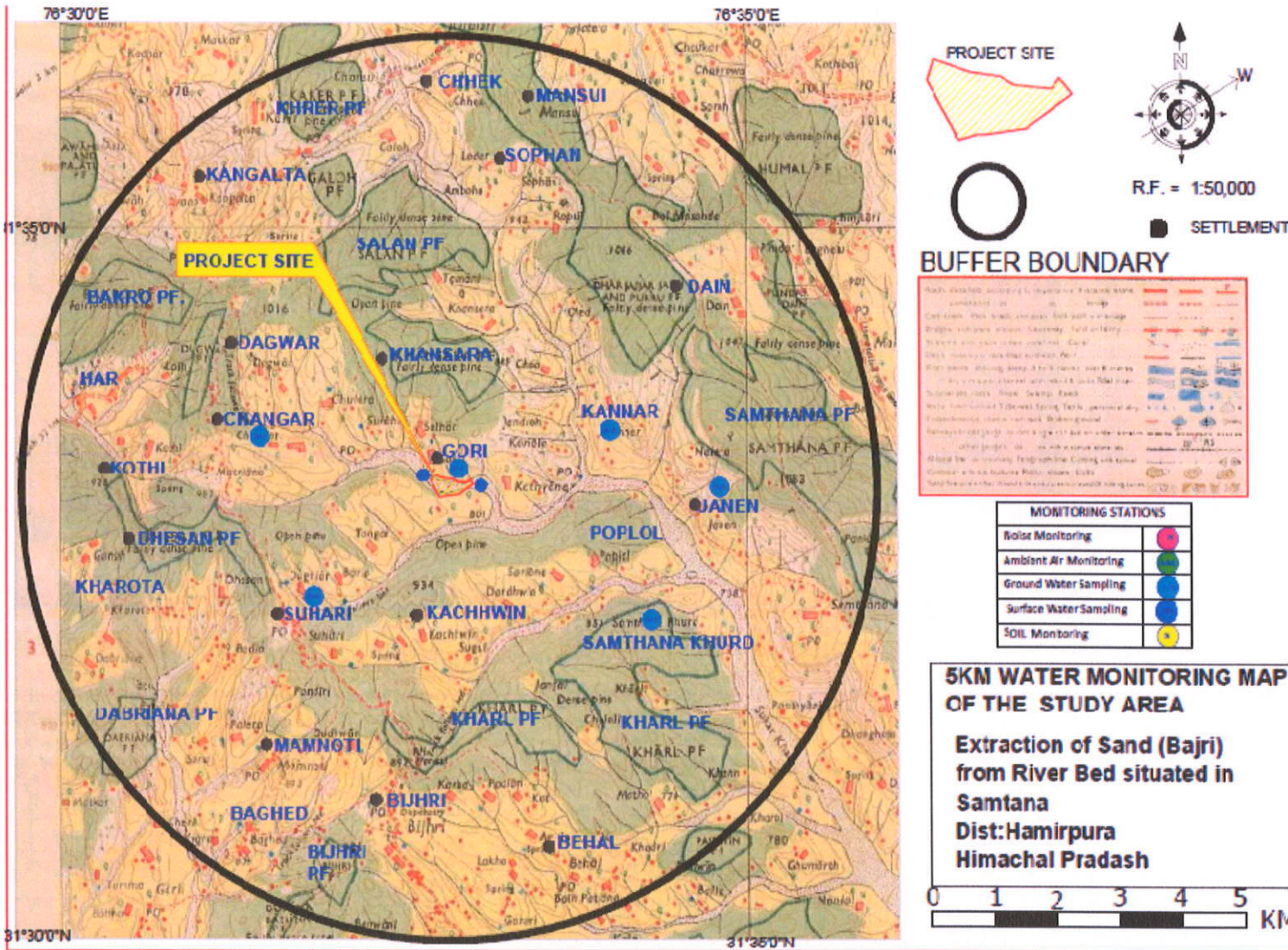
3.6 WATER ENVIRONMENT

Water samples were collected from the study area. The physico-chemical analysis of the water samples is given in the Table 3.3 (IV).

The Ground water sampling locations are marked in **Map**.

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Figure No. 3.3 Water Monitoring Station Map



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Table 3.3 (iii)

Ground water sampling locations

Station No.	Location	Approx. Distance	Direction
GW1	Near Project Side	00	--
GW2	Gori Dathwal	0.3 km	N
GW3	Changar	1.0	SE
GW4	Suhari	0.6	N
GW5	Kannar	4.6	SE
GW6	Janen	4.7	SE
GW7	Samtana Khurd	5.11	SE

Table 3.3 (iv) PHYSICO-CHEMICAL PROPERTIES OF GROUND WATER STUDY PERIOD – OCTOBER' 2020 - DECEMBER'2020

S.No.	Parameter	Limit (as per IS:10500)		Unit	GW1	GW2	GW3	GW4
		Desirable Limit	Permissible Limit					
1	pH	6.5-8.5	-	-	7.36	7.48	7.64	7.22
2	Colour	5	15	Hazen	<5.0	<5.0	<5.0	<5.0
3	Odour	Agreeable	Agreeable	-	Agreeable	Agreeable	Agreeable	Agreeable


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4	Taste	Agreeable	Agreeable	-	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	1	5	NTU	<0.5	<0.5	<0.5	<0.5
6	Total Hardness (as CaCO ₃)	200	600	mg/l	136	144	164	116
7	Calcium(as Ca)	75	200	mg/l	25.60	33.60	43.20	27.20
8	Magnesium(as Mg)	30	100	mg/l	17.50	14.58	13.61	11.66
9	Chloride(as Cl)	250	1000	mg/l	54.79	41.09	54.79	29.35
10	Iron(as Fe)	0.3	No Relaxation	mg/l	0.052	0.060	0.066	<0.05
11	Fluoride(as F)	1	1.5	mg/l	0.64	0.48	0.39	0.55
12	Free Residual chlorine	0.2	1	mg/l	<0.1	<0.1	<0.1	<0.1
13	Total Dissolved Solid	500	2000	mg/l	416	389	518	334
14	Phenolic Compound	0.001max	0.002 Max	mg/l	<0.001	<0.001	<0.001	<0.001
15	Anionic Detergents (as MBAS)	0.2	1.0	mg/l	<0.1	<0.1	<0.1	<0.1
16	Sulphate (as SO ₄)	200	400	mg/l	27.44	31.52	55.95	17.17
17	Nitrate (as NO ₃)	45	No Relaxation	mg/l	0.96	<0.5	1.15	<0.1
18	Alkalinity	200	600	mg/l	128	84	124	92


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19	Chloramines (as Cl ₂)	4	No Relaxation	mg/l	< 1.0	< 1.0	< 1.0	< 1.0
20	Cadmium (as Cd)	0.003	No Relaxation	mg/l	<0.001	<0.001	<0.001	<0.001
21	Lead (as Pb)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01
22	Total Chromium (as Cr)	0.05	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01
23	Copper (as Cu)	0.05	1.5	mg/l	<0.01	<0.01	<0.01	<0.01
24	Total Ammonia	0.5	No Relaxation	mg/l	<0.5	<0.5	<0.5	<0.5
25	Nickel (as Ni)	0.02	0.2	mg/l	<0.01	<0.01	<0.01	<0.01
26	Zinc	5	15	mg/l	0.58	<0.1	0.63	0
27	Manganese (as Mn)	0.1	0.3	mg/l	<0.1	<0.1	<0.1	<0.1
28	Boron (as B)	0.5	1	mg/l	<0.1	<0.1	<0.1	<0.1
29	Selenium (Se)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01
30	Arsenic (as As)	0.01	0.05	mg/l	<0.01	<0.01	<0.01	<0.01

Note: ND: Not detectable

Part-B

S.No.	Parameter	Limit (as per IS:10500)		Unit	GW5	GW6	GW7
		Desirable Limit	Permissible Limit				
1	pH	6.5-8.5	-	-	7.39	7.45	7.64


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2	Colour	5	15	Hazen	<5.0	<5.0	<5.0
3	Odour	Agreeable	Agreeable	-	Agreeable	Agreeable	Agreeable
4	Taste	Agreeable	Agreeable	-	Agreeable	Agreeable	Agreeable
5	Turbidity	1	5	NTU	<0.5	0.8	<0.5
6	Total Hardness (as CaCO ₃)	200	600	mg/l	144	104	164
7	Calcium(as Ca)	75	200	mg/l	32.00	22.40	43.20
8	Magnesium(as Mg)	30	100	mg/l	15.55	11.66	13.61
9	Chloride(as Cl)	250	1000	mg/l	39.14	21.53	54.79
10	Iron(as Fe)	0.3	No Relaxation	mg/l	<0.05	<0.05	0.066
11	Fluoride(as F)	1	1.5	mg/l	0.64	0.25	0.39
12	Free Residual chlorine	0.2	1	mg/l	<0.1	<0.1	<0.1
13	Total Dissolved Solid	500	2000	mg/l	572	358	518
14	Phenolic Compound	0.001max	0.002 Max	mg/l	<0.001	<0.001	<0.001
15	Anionic Detergents (as MBAS)	0.2	1.0	mg/l	<0.1	<0.1	<0.1
16	Sulphate (as SO ₄)	200	400	mg/l	38.42	35.06	55.95


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17	Nitrate (as NO ₃)	45	No Relaxation	mg/l	0.80	<0.1	1.15
18	Alkalinity	200	600	mg/l	120	80	124
19	Chloramines (as Cl ₂)	4	No Relaxation	mg/l	< 1.0	< 1.0	< 1.0
20	Cadmium (as Cd)	0.003	No Relaxation	mg/l	<0.001	<0.001	<0.001
21	Lead (as Pb)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01
22	Total Chromium (as Cr)	0.05	No Relaxation	mg/l	<0.01	<0.01	<0.01
23	Copper (as Cu)	0.05	1.5	mg/l	<0.01	<0.01	<0.01
24	Total Ammonia	0.5	No Relaxation	mg/l	<0.5	<0.5	<0.5
25	Nickel (as Ni)	0.02	0.2	mg/l	<0.01	<0.01	<0.01
26	Zinc	5	15	mg/l	0.58	0	0.63
27	Manganese (as Mn)	0.1	0.3	mg/l	<0.1	<0.1	<0.1
28	Boron (as B)	0.5	1	mg/l	<0.1	<0.1	<0.1
29	Selenium (Se)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01
30	Arsenic (as As)	0.01	0.05	mg/l	<0.01	<0.01	<0.01


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3.6.1 OBSERVATION:

Analysis results of ground water reveal the following: -

- PH varies from 7.36 at GW6 to 7.64 GW1 at GW7.
- Total hardness varies from 136 mg/l at GW1 to 164 mg/l at GW7.

Total dissolved solids vary from 416 mg/l at GW1 to 518 mg/l at GW7.

The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by Indian Standards IS: 10500.

Fluorides and nitrates are within the permissible limits. Most of the parameter in ground water sources is well within the permissible limits as per IS: 10500-1991, Drinking Water Standards.

3.6.2 SURFACE WATER

Two water samples were collected from the river Upstream & Downstream area. The Surface water sampling locations map attached as **Annexure XIV**. The physico-chemical analysis of the water samples is given in the Table 3.3 (vi).

Table 3.3 (vi)
Surface water sampling locations

Station No.	Location
SW1	Upstream
SW2	Downstream

3.7 SOIL ENVIRONMENT

Soil may be defined as a thin layer of earth's crust, a medium for the growth of plants. The soil characteristics include both physical and chemical properties. The soil survey and soil sample were carried out / collected to assess the soil


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characteristics of the study area. Soil samples were collected from 7 locations (1 core zone & 6 Buffer zone) and analyzed as per CPCB norms. The soil sampling locations map.

