DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

of

MINING OF MINOR MINERALS

For

Project name	Extraction of Stone & Bajri by Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher
Location	Khasra no. 596 & 599, falling in Mohal & Mauza Sanjhot, Tehsil & District Una, H.P.
Land Status/ Type	Private Land- Hill Slope
Mining Area	02-47-13 Ha
Category (as per EIA Notification, 2006)	Category B1 (*Due to cluster situation, as four other mining lease exists within 500m radius of the project site*).
Production	Approx. 32,000 MT for one year or 1,60,000 MT over a period of five years
Baseline study period	15th March to 15th June, 2025; Monitoring done by Chandigarh Pollution Testing Laboratory, Mohali (NABL accreditation TC-6728 Valid till: 08/11/2028)
TOR Letter No.	HPSEIAA/2024/1302 dated 26.05.2025

APPLICANT

Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher

Village & P.O. Dhamandri Tehsil & District Una, H.P.

PREPARED BY

JMS ENVIRO CARE & INNOVATIVE CENTRE

(QCI/ NABET Certificate No: NABET/EIA/24-27/IA 0142)

Address: SCO 6, Motia Plaza, Block B, Baddi, District Solan (H.P.)- 173212

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QCI Quality Council of India Membership

JMS Enviro Care & Innovative Centre

NABET

DECLARATION BY CONSULTANT

JMS Enviro Care & Innovative Centre

JMS Enviro Care and Innovative Centre
NABET Accredited EIA Consultant
AN ISO 14001:2015 & ISO 9001:2015 CERTIFIED
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E-mail : jmsenvirocare@gmail.com ; eia.jmsenvirocare@gmail.com

Date: 25.07.2025

TO WHOMSOEVER IT MAY CONCERN

This is to confirm that the EIA/EMP report for the proposed mining project namely Extraction of Stone & Bajri by Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher, over an area measuring 02-47-13 Ha (Pvt. Land- Hill Slope) bearing Khasra Nos. 596 & 599, falling in Mohal & Mauza Sanjhot, Tehsil & District Una, Himachal Pradesh, has been prepared by M/s JMS Enviro Care & Innovative Centre located at SCO 6, Motia Plaza, Block B, Baddi, District Solan (H.P.)- 173212. The Standard TOR issued by SEIAA, H.P. vide ToR Identification No. TO25B0108HP5688396N dated 26th May 2025, has been fully complied for preparing the EIA/EMP report.

We also confirm that the report prepared is based on project-related factual data as submitted by the client to us & the baseline studies conducted by M/s Chandigarh Pollution Testing Laboratory, a NABL accredited and MoEF&CC recognized Laboratory.

Jagir Singh

Mr. Jagir Singh

(Managing Partner, JMS Enviro Care & Innovative Centre)

NABET Certificate: NABET/EIA/24-27/IA 0142, Dated: 1st October, 2024 valid upto 20th June, 2027.

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PROJECT AT A GLANCE

	Particulars	Details
1.	**Name of the project**	**Extraction of stone & bajri by Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher**
2.	**Type of project**	**Mining of Minor Minerals (Stone and Bajri)**
3.	**Location**	Khasra nos. 596 & 599 (Private Land- Hill Slope) over an area measuring 02-47-13 Hect. situated in Mohal/Mauza Sanjhot, Tehsil & District-Una, State-Himachal Pradesh.
4.	**Lease Area Co-ordinates**	**Pillar No. / Latitude / Longitude** **P1** 32°16'14.18"N 75°42'31.64"E **P2** 31°34'25.61"N 76°15'30.30"E **P3** 31°34'23.67"N 76°15'30.71"E **P4** 31°34'23.75"N 76°15'40.10"E **P5** 31°34'26.05"N 76°15'40.72"E
5.	**Elevation (Altitude at origin)**	Highest 494 meters above MSL. Lowest 438 meters above MSL.
6.	**Land Status/ Type**	Private Land, Hill Slope
7.	**Mining Area**	02-47-13 Ha
8.	**Products**	Stone and Bajri
9.	**Production Capacity**	Approx. 32000 MT/Year or 1,60,000 MT over a period of five years.
10.	**Bench Level**	6 X 6 meters (9 nos. of Benches)
11.	**Project Cost**	Rs. 25 lakhs
12.	**Source of Electricity**	Not required
13.	**Alternative source**	Nil
14.	**Power Requirement at mining area**	Not required
15.	**Water consumption**	5.0 KLD
16.	**Source of water supply**	Borewell at crusher site

17.	**Air pollution control at mining site**	Water sprinklers & tree plantations
18.	**Hazardous chemical**	Nil.
19.	**Hazardous waste**	Nil.
20.	**Manpower requirement**	28-30 persons
21.	**Validity of Lease**	The period of the mining lease shall be as per grant order issued by competent authority after grant of EC.
22.	**Method of mining**	Manual
23.	**Working Days**	280
24.	**Waste (silty sand & top soil)**	Approx. 17255 MT/year (86277 MT over a period of five years).

TOR Letter

सत्यमेव जयते

File No: HPSEIAA/2024/1302
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), HIMACHAL PRADESH)
***

Dated **26/05/2025**

To,

Bhupinder Thakur
Village and PO Chattara, Una, Himachal Pradesh , UNA, HIMACHAL PRADESH, 174306
bhupshiva23@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Extraction of Sand, Stone and Bajri from Khasra Nos. 596 & 599 over an area measuring 02-47-13 Ha (Pvt. Land- Hill Slope) falling in Mauza/ Mohal Sanjhot, Tehsil & District Una, Himachal Pradesh by Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher submitted to Ministry vide proposal number SIA/HP/MIN/525638/2025 dated 25/02/2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108HP5688396N
(ii) File No.	HPSEIAA/2024/1302
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Extraction of Sand, Stone and Bajri from Khasra Nos. 596 & 599 over an area measuring 02-47-13 Ha (Pvt. Land- Hill Slope) falling in Mauza/ Mohal Sanjhot, Tehsil & District Una, Himachal Pradesh by Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher
(viii) Name of Company/Organization	Bhupinder Thakur
(ix) Location of Project (District, State)	UNA, HIMACHAL PRADESH
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

SIA/HP/MIN/525638/2025 Page 1 of 8

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by State Environment Impact Assessment Authority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 22/05/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above. Project Descriptions:

5. a)	Proposal No.	SIA/HP/MIN/525638/2025 **(Fresh TOR's)** HP SEIAA/2024/1302
b)	Processing fee	UTR reference no. 2955841426 on dated 14/02/2025 amount Rs. 20,000/-.
c)	Project type	Extraction of Sand, Stone & Bajri.
d)	Project Location	Khasra number 596, 599 falling in Mauza/ Mohal Sanjhot, Tehsil & District Una, Himachal Pradesh.
e)	Jamabandi	Jamabandi for the year 2020-2021
f)	Land Status	Private Land, hill slope.
g)	Capacity	32,000 MT/year.
h)	Mining Area	02-47-13 Hectare, Private land, hill slope.
i)	Leases with in 500 meter from the periphery of the area applied.	Four mining leases exist within 500 meters: 1. M/s Shiva Stone Crusher (02-94-14 hect.) 2. M/s Sarswati Stone Crusher (01-48-21 hect.) 3. M/s Sarswati Stone Crusher (02-82-77 hect.) 4. Sh. Tarun Sharma (02-91-57 hect.)
j)	Letter of Intent	LoI issued on dated 10/10/2024 valid for one year i.e. 09/10/2025
k)	EMP Cost	Capital Cost Rs. 12.6 Lakhs, Recurring Cost Rs. 3.73 Lakhs for five years.
l)	CER cost	Rs. 12.00 Lakhs.

6. The brief about configuration of plant/equipment, products and by products and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A, B and C)/EIA & EMP Reports/presented during SEIAA are annexed to this EC as Annexure (1).

7. The SEIAA, in its meeting held on 22/05/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).

8. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Bhupinder Thakur under the provisions of EIA Notification, 2006 and as amended thereof.

9. The Ministry reserves the right to stipulate additional conditions, if found necessary.

10. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

11. This issues with the approval of the Competent Authority.

Copy To

1. The Secretary (Environment), Ministry of Environment, Forests & Climate Change (MoEF&CC), GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003 .
2. The Chairman, Central Pollution Control Board, Him Parivesh Bhawan, CBD-cum-office Complex, East Arjun Nagar, New Delhi-110032.

3. The Chairman, Himachal Pradesh State Pollution Control Board, Shimla-171009.
4. The Director (Environment, Science & Technology) to the GoHP, Shimla-171001.
5. The Adviser (IA), MoEF&CC, GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003.
6. The Integrated Regional Office, MoEF&CC, CGO Complex, Shivalik Khand, Longwood, Shimla, HP-171001.
7. The Monitoring Cell, MoEF&CC,GoI, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110003
8. Record File.

Annexure 1

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	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
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	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
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould 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)
1.5	Information should be provided in Survey of India 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
1.6	Details about the land proposed for mining activities should be givenwith 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
1.7	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 or stakeholders at large,may also be detailed in the EIA Report
1.8	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

S. No	Terms of Reference
1.9	The study rea 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
1.10	Land use of the study rea 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
1.11	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
1.12	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, 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
1.13	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
1.14	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
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	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
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site 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, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions 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 the project cost

S. No	Terms of Reference
1.19	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 required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	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)
1.21	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 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
1.22	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 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
1.23	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 vehicles 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 roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	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
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect

S. No	Terms of Reference
	groundwater. 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
1.29	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
1.30	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
1.31	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
1.32	Impact on local transport infrastructure due to the Project should be indicated. 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
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	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
1.36	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
1.37	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
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if

S. No	Terms of Reference
	any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	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
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) 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. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) 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. 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. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified 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. i) 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
1.45	1. The project proponent shall undertake and include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose diagram of the site to plan the installation of PCDs. 2. The project proponent shall submit the wider view photographs and video of the mining site using drone camera from all angles depicting the entire picture of the mining site.

Additional Terms of Reference

N/A

Annexure 2

Details of Products & By-products

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Sand, Stone & Bajri	Sand, Stone & Bajri	32000	Tons per Annum (TPA)	Road	

Signature Not Verified

Digitally Signed by : Sh D C Rana
Member Secretary, SEIAA

Date: 26/05/2025

SIA/HP/MIN/525638/2025

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S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
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.	Not applicable, as the unit became operational after obtaining EC in 2016.	--
2.	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Complied, copy of lease agreement in the name of project proponent is attached as annexures.	**Refer to Annexure-IX, Page no. 212 to 219**
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.	Mine lease area, production capacity, waste generation & its management and mining technology, all are compatible in mine plan, EIA and Public Hearing.	**Refer Chapter 2 (Table 2.1) Page No.31.**
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).	All the necessary maps such as 10 km buffer map, 500 buffer map, pillar co-ordinates, LULC map of study area are included in EIA report.	**Refer Chapter 3 (Figure 3.1, 3.2, 3.3 and 3.9) Page No.57, 58, 59 &78 respectively.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
5.	Information should be provided in Survey of India 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.	The toposheet map of 10 km buffer area indicating the geology, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics is given in EIA report.	**Refer to Chapter 3 fig no 3.1 Page no 57.**
6.	Details about the land proposed for mining activities should be 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.	The proposed mining will be undertaken in land area measuring 02-47-13 Ha and the same conforms to land use policy of Govt. of Himachal Pradesh.	--
7.	It should be clearly stated whether the proponent Company has a well laid down Environmental 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 or stakeholders at large may also be detailed in the EIA report.	The proposed project is a proprietorship firm and has its own project level environmental policy. The environmental policy which is available in EIA report has a prescribed operating procedure to look after any violation or deviation from the applicable environmental laws and compliance of EC conditions.	--

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
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.	The proposal pertains to open-cast mining for which all safety provisions detailed in EIA report are available.	**Refer Chapter 2, Section 2.13 Page No.39.**
9.	The study area will comprise of 10 km zone around the mine lease from the lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/lease period.	Complied.	**Refer Chapter 2 Table 2.10 Page No.38.**
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 settlement 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.	LULC map of 10 km buffer map of study area giving all the listed features has been enclosed in the EIA Report.	**Refer Chapter 3 Figure 3.9 Page No.78.**
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.	No overburden is involved as the mining will be done in scientific and systematic way. The top soil will be spread over the benches developed after mining.	**Refer Chapter 2 Section 2.9 Page No.38.**
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, the site	No involvement of forest land as authenticated by the local Forest Department and Joint Inspection Committee as per the documents attached as Annexures.	**Refer to Annexure- V (Page no. 184 -195**

<table>
<tr><th>S.NO.</th><th>TORS POINT</th><th>TOR COMPLIANCE</th><th>Reference in EIA</th></tr>
<tr><td></td><td>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.</td><td></td><td></td></tr>
<tr><td>13.</td><td>Status of Forestry clearance for the broken-up area and virgin forest land 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.</td><td>Not Applicable, in view of 12 above.</td><td>--</td></tr>
<tr><td>14.</td><td>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.</td><td>Not Applicable, in view of 12 above.</td><td>--</td></tr>
<tr><td>15.</td><td>The vegetation in the RF/PF areas in the study area, with necessary details, should be given.</td><td>All type of vegetation conducive to the environment of Una district is prevalent in RF/PF forests.
List of the Protected forests is given below in tabulated form:
<table>
<tr><th>Sr. No.</th><th>Name of the Protected Forest</th><th>Distance from the Mining Site</th></tr>
<tr><td>1.</td><td>Momaniar Protected Forest</td><td rowspan="3">Within 10 Km radius</td></tr>
<tr><td>2.</td><td>Dhanet Protected Forest</td></tr>
<tr><td>3.</td><td>Kharialta Protected Forest</td></tr>
</table></td><td>Refer to section 3.12 of Chapter 3 Table no 3.23 page 118</td></tr>
</table>

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
		4. Sar Protected Forest **5.** Chaukiminar Protected Forest **6.** Dhion Sar Protected Forest	
16.	A study shall be got done to ascertain the impact of the mining Project on wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be given worked out with cost implications and submitted.	No forest land, no tree cutting and no wildlife is available in the lease area. However, adequate preventive measures have been detailed in the EIA report for the protection of wildlife in the buffer zone due to project activities.	**Refer to Chapter 10 and Annexure VI (Page no. 196-205)**
17.	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors. Ramsar site Tiger/Elephant Reserves (existing as well as proposed), if any, within 10km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	No National Parks, Sanctuaries, Biosphere reserve, Wildlife Corridors, Tiger & Elephant Reserves falls within 10 km of the mine lease. The copy of DFO certificate is attached as Annexures. List of the Protected Forest are given in the Draft EIA report and same tabulated below:	**Refer to Annexure VI (Page no. 196-205)**

Sr. No.	**Name of the Protected Forest**	**Distance from the Mining Site**
1.	Momaniar Protected Forest	Within 10 Km radius
2.	Dhanet Protected Forest	
3.	Kharialta Protected Forest	
4.	Sar Protected Forest	
5.	Chaukiminar Protected Forest	
6.	Dhion Sar Protected Forest	

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
18.	A detailed biological study of the study area (core zone and buffer zone (10kms radius of the periphery of the mine lease)) shall be carried out. Details of Flora and Fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicated the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions 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 the project cost.	Detailed ecological & biodiversity study as part of baseline study of the area has been carried out and given in the EIA report. List of flora & fauna including endangered, endemic and RET species authenticated by concerned department has been given in the EIA report. Since, no Schedule-I species are present in the study area, there is therefore, no requirement of conservation plan.	**Provided at table 3.22 (a) and 3.22 (b) Page No. 110,115.**
19.	Proximity to areas declared as "Critically Polluted" or the Project areas likely to come under the 'Aravalli range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed, Authorities such as the SPCB or State Mining Department should be secured and furnished to the effect of the proposed activities could be considered.	The proposed mining project does not fall under critically polluted area.	--
20.	Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized by one of the authorized species demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t. CRZ, coastal	Not Applicable as the mine lease area does not fall in CRZ.	--

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
	features such as mangroves, if any should be furnished. (Note: Mining project falling under CRZ would also need to obtain approval of the conserved Coastal Zone Management Authority).		
21.	R & R Plan/ compensation details of the Project, affected people (PAP) should be furnished. While preparing the R & R plan, the relevant site/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 undertaken to assess their requirements, and action programmers prepared and submitted accordingly, integrating the sectoral programmers 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 issued related to shifting of village(s) including their R & R and socio-economic aspects should be discussed in the Report.	Not applicable, as no displacement and subsequent rehabilitation is involved.	--
22.	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 data-wise in the EIA and EMP report. Site-specific	Primary Baseline data on Ambient Air Quality, water quality, noise level, soil, Flora and Fauna was collected during 15th March to 15th June,2025 & the details are provided in Chapter 3	**Refer section 3.6 to 3.14 Page No.62-127.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
	meteorological data should also be collected. The location of the monitoring stations should be 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 500m 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 vehicles 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 roses showing pre-dominant wind direction may also be indicated on the map.	As this is a non-coal mining project, there are no specific points of emission. Air quality modeling has been conducted based on fugitive emissions and vehicular movements within the mining area. The 24- hourly average ground-level concentration (GLC) values for the project have been calculated for concentration of PM2.5, considering the topographical features surrounding the project and applicable stability classes. Results indicate that the maximum contribution in GLC's, with unit's operation will be 42.17 µg/m3 for PM2.5 at a distance of 199 m from N direction. Since the mining is manual and no blasting is involved, therefore impact of the fugitive emission from the unit will be negligible. SPM level due to movement of	**Refer to chapter 4 (Figure - 4.1) page No .133.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
		vehicles will also be checked. The present max PM10 is 79.1 µg/m3 and PM2.5 is 42.1 µg/m3. There will be marginal increase in existing level of ambient air quality (PM2.5, which will be well within the permissible, limits i.e. 60ug/m3.	
24.	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Only 5.0 KLD water is required. The water will be sourced through own borewell at crusher site. Affidavit for the same has been provided as Annexure.	**Attached as Annexure VIII(a).**
25.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	The permission for use of borewell or groundwater has been taken from the competent authority. The affidavit regarding this is enclosed as Annexure.	**Attached as Annexure VIII(a).**
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.	Since no water will be used in the mining operations, therefore, no waste water will be generated, small amount of domestic waste water shall be treated in septic tanks at crusher site before it is put to use for plantation.	**Refer to chapter 10 Page No. 55 - 141.**
27.	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Since no water will be used in the mining operations, therefore, no waste water will be generated, thereby no impact on groundwater and surface water quality.	**Refer chapter 10 Page No.154.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
28.	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. 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.	It is ensured that mining will be carried out above the ground water table to prevent the intersection with ground water table. Therefore, the mining operation will not intersect groundwater. All the rules and precautionary measures shall be followed accordingly as mentioned in statutory notifications and the Approved Mining Plan.	--
29.	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.	Mining will be done in Hill Slope, through which no stream is passing.	--
30.	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.	The site is elevated lowest at 494 meters from the mean sea level and highest at 438 meters from the mean sea level. The mining operations would be carried out upto a depth of 6 meters from the surface level.	**Refer to chapter-2 Page No.31.**
31.	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 from on commencement	The plantation will be done on the exhausted/excavated benches and the applied mining lease area after leaving the safety zone fenced properly. The total cost of plantation including its maintenance shall be approx. Rs.	**Refer section 2.11 (table 2.11 and 2.12) of Chapter- 2 Page No.38.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
	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.	12,00,000 for five years. The cost includes cost of plants, mineable and other labor activities. The species to be planted are Drek, Kachnar, Amla, Poplar & Sahtoot.	
32.	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road networks (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.	An estimated 7-8 trucks/tippers will be daily employed for transportation of minerals from mining site to the adjacent crusher site from where the processed minerals will be transported to the market via Kaccha Road Dhamandri Sanjhot diverting LHS from village Sanjhot which has adequate capacity to accommodate the additional transportation load of 7-8 trucks/tippers per day.	**Refer section 3.13.3 of chapter- 3 Page No.126.**
33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.	Local labor will be employed requiring no residential facilities at site. However, change room/rest room, clean drinking water shall be provided to the workers. Sanitation facilities are already available at the adjacent crusher site.	**--**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
34.	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	The mining site after excavation will be reclaimed for plantation and restored to its original land use.	**Refer section 2.7 of Chapter 2 Page No.38.**
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 schedules should be incorporated in the EMP. The project specific occupational health mitigation measure with required facilities proposed in the mining area may be detailed.	Occupational health impact is mainly expected from air pollution due to fugitive dust emissions and insignificant increase in noise levels which may induce respiratory ailments and hearing impairment. Adequate PPE's will be provided to the workers as safeguards against these impacts. Pre-placement and periodic medical examination of workers will be instituted to ascertain the occupational health impacts on workers.	**Refer chapter-10. Page no 154.**
36.	Public health implications of the Project and related activities for the population of the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocation.	Though, mining would be done manually, and far away from habitation, therefore there may not be major impact envisaged related to project activity. However, specific provisions have been provided for the against fugitive dust and noise for the people residing near the transport route.	**Refer chapter-10 Page no 154.**
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 aspects of the project have been clearly detailed in the baseline study w.r.t. socio-economic environment. Social and environmental activities will be executed as part of EMP for the social-welfare of local	**Refer chapter- 3 Page no 53.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
		community.	
38.	Detailed Environment Management Plan (EMP) to mitigate the environmental impacts which should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed project.	Detailed Environmental Management Plan in respect of all components of the environment has been provided in the EIA report.	**Refer chapter-10. Page no 154.**
39.	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound action plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	This draft EIA report has been prepared for the purpose of public hearing and the issues raised during the same will be duly addressed in the EIA/Emp report.	**Refer chapter-7 Page no 146**
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.	No litigation is pending.	**Refer chapter-8 Page no 151**
41.	The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	The cost of the project is Rs. 25 lakhs and the cost of EMP is Rs. 35.0 as Capital cost and Rs. 6.3 Lakhs (Recurring)/Annum.	**Refer table 10.1 of Chapter 10 Page No.159.**
42.	A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.	Complied in EIA report.	**Refer chapter-7 (Section 7.3) Page no 147.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
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.	This Project will provide several benefits to the near villagers by a proper planning and management. This project will employ most of the worker from nearby villages. There will not be any increase in population due to the project. However, few people from other area may migrate in this area for business opportunities. During the operation of this project no adverse impact on the surrounding environment is envisaged.	**Refer Chapter -4, Page no. 141 (Section 4.7)**
44.	Besides the above, the below mentioned general points are also to be followed: -		
(A)	All documents to be properly referenced with index and continuous page numbering.	Agreed & complied.	
B.	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Noted for compliance.	
C.	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.	Noted & complied.	
D.	Where the documents provided are in a language other than English, an English translation should be provided.	Noted & agreed.	

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
E.	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted	Noted for compliance.	
F.	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted for compliance.	
G.	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. 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.	Noted for compliance.	
H.	As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified 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. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and	Agreed and complied.	**Fig. 2.2 to 2.1, Page no. 41 to 50 of Chapter 2.**

S.NO.	TORS POINT	TOR COMPLIANCE	Reference in EIA
	mining area, (ii) geological maps and sections (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.		
45.(1)	The project proponent shall undertake and include the detailed analysis of GLC-2.5 with air modeling and shall prepare the wind-rose diagram of the site to plan the installation of PCDs.	Complied.	**Chapter 4 (Fig. 4.1) Page no 133.**
(2.)	The project proponent shall submit the wider view photographs and video of the mining site using drone camera from all angles depicting the entire picture of the mining site.	Agreed & will be complied at the time of appraisal.	

EXECUTIVE SUMMARY

1.0 PROJECT NAME AND LOCATION:

Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher Village & P.O. Dhamandri, Tehsil & District Una, Himachal Pradesh has been issued "Letter of Intent" for grant of mining lease vide letter No. Udyog-Bhu (Khani-4) Laghu-460/2024-6084 dated 10.10.2024 for extraction/ collection of stone & bajri from Hill slope over an area measuring 02-47-13 Hectares bearing Khasra nos. 596 & 599 (Private Land-Hill Slope) situated in Mohal/Mauza Sanjhot, Tehsil & District-Una, State-Himachal Pradesh. **The project itself falls in category B2, however due to cluster situation (Four other mining leases exists within 500-m radius of the project site), the project is categorized as Category B1 as per EIA Notification and its subsequent amendments.**

2.0 PROJECT PROPOSAL:

The applicant is seeking prior Environmental Clearance for the proposed project as per EIA notification-2006 and the subsequent amendments. The proposal involves the extraction/collection of minor minerals such as stone & bajri from the mine lease area of 02-47-13 Hectares, falling in Mauza & Mohal Sanjhot, Tehsil & District Una, State-Himachal Pradesh. The project proponent has engaged ***QCI NABET Accredited Environmental Consultant, M/s JMS Enviro Care & Innovative Centre*** for conducting EIA study and preparation of EIA/EMP report.

DETAILS OF THE PROJECT

<table>
<tr><th>Particulars</th><th>Details</th></tr>
<tr><td>Name of the project</td><td>Extraction of stone & bajri by Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher</td></tr>
<tr><td>Type of project</td><td>Mining of Minor Minerals (Stone and Bajri)</td></tr>
<tr><td>Location</td><td>Khasra nos. 596 & 599 (Private Land- Hill Slope) over an area measuring 02-47-13 Hect. situated in Mohal/Mauza Sanjhot, Tehsil & District-Una, State-Himachal Pradesh.</td></tr>
<tr><td>Lease Area Co-ordinates</td><td>
<table>
<tr><th>Pillar No.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>P1</td><td>31°34'25.61"N</td><td>76°15'30.30"E</td></tr>
<tr><td>P2</td><td>31°34'23.67"N</td><td>76°15'30.71"E</td></tr>
<tr><td>P3</td><td>31°34'23.75"N</td><td>76°15'40.10"E</td></tr>
<tr><td>P4</td><td>31°34'26.05"N</td><td>76°15'40.72"E</td></tr>
<tr><td>P5</td><td>31°34'23.23"N</td><td>76°15'43.24 "E</td></tr>
<tr><td>P6</td><td>31°34'25.55"N</td><td>76°15'44.48"E</td></tr>
</table>
</td></tr>
<tr><td>Elevation (Altitude at origin)</td><td>Highest 494 meters above MSL.</td></tr>
</table>

		Lowest 438 meters above MSL.
Land Type		Private Land, Hill Slope
Mining Area		02-47-13 Ha
Products		Stone and Bajri
Capacity		Approx. 32000 MT/Year or 1,60,000 MT over a period of five years.
Bench Level		6 X 6 meters (9 nos. of Benches)
Method of mining		Manual
Working Days		280
Mine Waste		
Waste (silt/clay/top soil)		Approx. 17255 MT/year (86277 MT over a period of five years).
Water consumption		5.0 KLD
Source of water supply		Borewell at crusher site
Manpower		28-30 persons
Cost Details		
Cost of project		Rs. 25 Lakhs/-.
Cost of EMP		Rs. 35.0 Lakhs (Capital) Rs. 6.3 Lakhs (Recurring)/Annum
Environmental sensitivities of the area (within 10 km)		
Ecological sensitive area (national parks, Wildlife sanctuaries, Biosphere reserves etc.)		None within 10 km radius. *(Nangal Wildlife Sanctuary is located at a distance of 13.40 Kms from the project site.)*
International/State boundary		State boundary of Punjab
a.	**Nearest highway**	NH-503 (Una-Amb Road) at (aerial distance) of 6.0 kms towards West direction.
b.	**Nearest railhead/Railway station**	Panoh railway station at a distance (aerial distance) of 6.3 kms. Towards south-west direction.
c.	**Nearest airport**	Chandigarh airport (112 Km)
d.	**Nearest Major City**	Una (13.0 Km)

3.0 PROJECT DESCRIPTION:

The mining plan of the mining site has been got prepared from RQP and the same has been got approved from State Geologist, Himachal Pradesh, Shimla on 02/01/2025. In this mining plan, it has been envisaged that the proposed project involves the mining of sand, stone & bajri by open cast manual method in the Hill Slope over an area measuring 02-47-13 Ha with the proposed production capacity of 32,000 MT/Annum. The year-wise quantity of material to be mined over a period of 5 years as mentioned in the approved Mining Plan, is given below in the table.

Table showing year-wise production programme of mining in mineable area (in M.T.)

Bench no.	Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench	Mine waste including silty sand & soil
1, 2 & 3	**1st Year**	488, 482, 476	63545	32000	31545	17286
3& 4	**2nd Year**	476, 470	87120	32000	55120	17231
4	**3rd Year**	470	55120	32000	23120	17183
4 & 5	**4th Year**	470,464	87470	32000	55470	17294
5	**5th Year**	464	73136	32000	23470	17283
Total			**3,66,391**	**1,60,000**	**1,88,725**	**86,277**

Source: Approved Mine Plan

4.0 WASTE GENERATION & DISPOSAL ARRANGEMENTS:

As envisaged in the mining plan, during operation phase there is likelihood of generation of sub-grade mineral/material like silty sand mixture, which is termed as mine waste. The mine waste shall be stacked in the premises of the stone crusher for further screening & washing.

Besides, there is a layer of top soil covering the hill surface, which shall be scrapped before start of mining operation and the same will be stacked in the mining premises. The year wise generation of mine waste including top soil during the lease period of five years, is given below in the table:

Year	Mine waste (Silty sand & Top Soil in MT)
1st Year	17286
2nd Year	17231
3rd Year	17183
4th Year	17294
5th Year	17283
Total	**86277**

The mine waste stored in the premises of the stone crusher, shall be screened and washed in the machinery. Thereafter, the mine waste shall be temporarily stacked over the location as shown in the Mining Plan for further back-filling on the exhausted benches/pits for restoration/reclamation purposes. As mentioned in the above table, there will be 86277 MT generation of mine waste as silty sand and top soil, this entire quantity shall be used for back-filling of the exhausted benches/pits for restoration/reclamation purposes. The additional requirement of waste material requiring to fill the excavated pits to the desired level of reclamation purpose, the project proponent shall make arrangement to procure the additional quantity of waste material. However, the top soil stacked in the premises of the mining site shall be used as top layer after reclamation of the excavated pits. In order to prevent the flow of debris/silt outside the mining lease area, the project proponent shall construct check dams at the suitable locations.

5.0 DESCRIPTION OF ENVIRONMENT:

The baseline data in respect of environmental components: Air, Soil, Noise, Water, Ecology & Biodiversity has been collected for summer season from **15th March to 15th June, 2025.** The EIA study has been carried out for mine lease area (core zone) & area within 10 km radius of lease area (buffer zone).

BASELINE STATUS

Attribute	Baseline Study
Ambient Air Quality	• The data reveals that PM_{10} concentrations were lowest at Nagar Chauki (60.2 µg/m³), a residential village characterized by minimal industrial activity and limited vehicular traffic. In contrast, the highest PM_{10} concentration was observed at the Project Site (81.2 µg/m³), which is located in close proximity to four active mining operations. The elevated PM_{10} levels at the Project Site are primarily attributed to the cumulative impact of these nearby mining activities. The clustering of mines in the area contributes to increased movement of heavy-duty vehicles such as trucks and tippers, leading to substantial dust generation and vehicular emissions. These factors collectively result in significantly higher ambient concentrations of particulate matter in the region. The value of P98 was 79.1 µg/m3.

- The highest $PM_{2.5}$ concentration (43.3 µg/m³) was recorded at the Project Site, primarily due to emissions from four adjacent mining operations involving drilling, material handling, and heavy vehicle movement. These activities contribute significantly to both fugitive dust and vehicular emissions, deteriorating local air quality. In contrast, the lowest concentration (31.3 µg/m³) was observed at Talap, Kaint, Khurwain, and Ambhera Dhiraj residential villages with minimal industrial and vehicular activity. Consequently, $PM_{2.5}$ levels in these areas remained comparatively low.

- The maximum SO_2 concentration was consistently recorded at 6.6 µg/m³ across all locations. The minimum concentration of 6.0 µg/m³ was observed at four locations: the Project Site, Kaint, Khurwain, and Dhamandri. The slight variations in SO_2 levels can be attributed to localized differences in emission sources, such as domestic fuel use and vehicular activity, both of which are generally minimal across the monitored sites. The relatively lower concentration at the Project Site may be due to the absence of significant stationary combustion sources or fuel-burning activities in the area.

- NO_x concentrations in the study area ranged from a minimum of 10.2 µg/m³ at Dhamandri—where the sample was collected within the village, away from the immediate vicinity of the crusher site—to a maximum of 16.6 µg/m³ at Nagar Chauki village. The elevated NO_x levels at Nagar Chauki may be attributed to localized sources, particularly higher vehicular traffic in the area.

- Carbon Monoxide (CO) levels were below detectable limits due to warmer, windier weather, reduced heating usage, and increased sunlight, all of which help disperse and break down CO more effectively during spring and early summer.

- Ozone concentrations ranged from 20.0 µg/m³ (at Nagar Chauki, Kaint, Talap, and Khurwain) to 20.8 µg/m³ (at Kaint), with slight variations

	attributed to local environmental and weather conditions.
Noise Environment	• Noise levels across the eight monitoring locations remained within acceptable limits. During the daytime, levels ranged from 68.9 dB(A) at Project Site to 44.3 dB(A) at the Ambhera Dhiraj. The project site is located near the four active mining sites, as such the higher noise level measured at project site is contributed due to the activities of the mining. • At night, noise levels varied from a minimum of 31.2 dB(A) at Harsa Jandora to a maximum of 36.1 dB(A) at the Project Site, reflecting minimal nighttime disturbances. All values comply with CPCB norms for residential zones.
Water Quality	***Groundwater Quality*** • The monitoring was done at 8 locations. • The pH ranged from 7.18 at Ambhera Jandora to 7.66 at the Project Khurwain, indicating neutral to slightly alkaline water. The analyzed values are within the acceptable limit (6.5-8.5) mentioned in the IS:10500-2012. • Total hardness varied between 245 mg/l at Project site and Khurwain to a maximum of 310 mg/l at Ambhera Dhiraj. The analyzed values are beyond the acceptable limit (200 mg/l) but within the permissible limit (600 mg/l) as mentioned in the IS:10500-2012. • Calcium concentration ranged from 32.0 mg/l at Ambhera Dhiraj to 46.0 mg/l at Nagar Chauki, (acceptable limit is 75 mg/l as per IS:10500-2012) while magnesium levels were between 13.2 mg/L at Dhamandri and 19.2 mg/L at Nagar Chauki (below the acceptable limit i.e. 30 mg/l and below the permissible limit i.e. 100 as per IS:10500-2012). • Total Dissolved Solids (TDS) ranged from 268 mg/L at Dhamandri to 322 mg/L at Ambhera Dhiraj. The analyzed values are within the acceptable limit (500 mg/l) mentioned in the IS:10500-2012. • Total alkalinity was recorded as 285 mg/L at the Khurwain and 215 mg/L at Talap. These values are beyond the acceptable limits (200 mg/L) but within the permissible limits (600 mg/L) as specified in IS:10500-2012.

	• Chloride concentrations varied from 12.4 mg/L at the Nagar Chauki to 22.4 mg/L at Talap and Khurwain. The analyzed values are within the acceptable limit (250 mg/l) mentioned in the IS:10500-2012. • Heavy metals were below detection limits (BDL) in all groundwater samples, with the exception of iron (Fe), which was detected in the range of 0.11 mg/L to 0.13 mg/L. These levels indicate that the groundwater in the study area is potable in nature. ***The detection limits were as follows:*** ***Zn – 0.5 mg/L,*** ***Hg – 0.001 mg/L, s*** ***Cd – 0.001 mg/L,*** ***Mn – 0.09 mg/L and Cr – 0.04 mg/L.*** • Microbiological analysis showed Total Coliform levels below 2 at all locations, with E. coli absent, confirming good microbiological quality of groundwater. ***Surface water*** Surface water from the Soan River was analyzed near the project site. The pH was recorded at 7.52, indicating neutral water conditions. • **Total Hardness** was measured at 132 mg/L. • **Total Dissolved Solids (TDS)** were found to be 184 mg/L, well below the IS:2296 permissible limit of 1,500 mg/L. • **Fecal Coliform** levels were observed at 77.0 MPN/100 mL, while **Total Coliform** counts were 108 MPN/100 mL, indicating a moderate level of microbial presence. • **Chemical Oxygen Demand (COD)** was recorded at 10.0 mg/L. • **Biochemical Oxygen Demand (BOD)** was measured at 3.3 mg/L. Based on these parameters and as per the water quality criteria laid down by the Central Pollution Control Board (CPCB), the Soan River water near the project site qualifies as **Designated Best Use Class B**, making it suitable for outdoor bathing.
	• Soil was analyzed for 8 locations. • The pH ranged from 7.12 at Kaint and Dhamandri to 7.48 at the Talap, indicating that soils are neutral to slightly alkaline.

Soil Quality	• Electrical Conductivity (EC) ranged from 289 µmhos/cm at the Dhamandri to 378 µmhos/cm at Talap, suggesting low salinity levels, suitable for agriculture. Organic matter content varied between 0.50% at Talap and Kaint and 0.55% at Harsa Jandora, indicating moderate fertility.
	• **In terms of macronutrients:**
	  • Nitrogen (N) content ranged from 3.25% at Kaint to 1.26% at village Harsa Jandora.
	  • Phosphorus (P) was lowest at 6.8 kg/ha at Project Site and Nagar Chauki and highest at 12.4 kg/ha at Khurwain.
	  • Potassium (K) levels varied from 22.6 kg/ha at Nagar Chauki to 54.2 kg/ha at the Harsa Jandora.
	• From the above, it is evident that the soil is healthy in condition.

5. 1 BIOLOGICAL ENVIRONMENT:

The biological environment of the study area in Una, Himachal Pradesh, was assessed through site observations and secondary data. No endangered plant or animal species were recorded, indicating no significant ecological impact.

The area supports a variety of fodder grasses such as *Cynodon dactylon* (Doob grass), *Eleusine indica* (Goosegrass), and *Trifolium alexandrinum* (Berseem), which are vital for livestock and support the local agrarian economy.

In uncultivated and open lands, common invasive or hardy species include *Calotropis procera* (Aak), *Ricinus communis* (Arand/Castor), *Datura metel* (Dhatura), and *Opuntia stricta* Nagphani/Thorny Cactus), which often dominate poorly managed areas.

Village areas feature more diverse and multipurpose vegetation such as *Mangifera indica* (aam/mango), *Syzygium cumini* (Jamun), *Azadirachta indica* (Neem), *Albizia lebbeck* (siris), *Delonix regia* (Gulmohar), *Tamarindus indica* (Imli), *Ficus religiosa* (Peepal), *Bauhinia variegata* (Kachnar), *Celtis australis* (Khirak), *Bombax ceiba* (Semal), and *Grewia optiva* (Bhimal). These species are common and widely distributed across the region.

Faunal species in the study area (Core zone)

S. No.	Common Name	English Name	Botanical Name	Status as per	Habit

				IUCN	
1.	Tut, Sahtoot, Safed Sahtoot	White mulberry	*Morus alba*	LC	Tree
2.	Vetiver and khus	Vetiver	*Vetiver zizanioides*	--	Grass
3.	Kehmal, Jhingan	Indian ash tree	*Lannea coromandelica (Lannes grandis)*	LC	Tree
4.	Curry Patta	Curry leaves or Sweet neem	*Murraya koenigii*	LC	Shrubs
5.	Rajain, Pardesi, Papri, Chilbil	Indian elm, kanju	*Holoptelea integrifolia*	LC	Tree
6.	Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	*Dalbergia sissoo*	LC	Tree
7.	Simble, Seemal	Silk cotton tree	*Bombax ceiba*	LC	Tree
8.	Nimba tree or Nim tree	Neem	*Azadirachta indica*	LC	Tree
9.	Jaman	Black-plum	*Syzygium cumini*	LC	Tree
10.	Kachnar, Karal	Malabar ebony, mountain ebony	*Bauhinia malabarica*	LC	Tree

LC: Least Concern

Faunal Species in the Study Area (Core Zone)			
S. No.	***Zoological Name***	**Common English name**	**Schedules as per WPA, 1972 as amended till date**
1.	*Sus sacrofa*	Wild Boar	Schedule- II
2.	*Muntiacus Mutjak (vaginlis)*	Barking Deer	Schedule-III
3.	*Macaca mulatta*	Monkey	Appendix-I (Schedule not listed)
4.	*Gallus gallus*	Red Jungle Fowl	Not listed

5.	*Framcolinus francolinus*	Black Partridge	Not listed
6.	*F. pondicrianus*	Grey Partridge	Not listed
7.	*Vulpie bengalensis*	Fox	Appendix-I (Schedule not listed)

Source- DFO, Una

5. 2 SOCIO-ECONOMIC ENVIRONMENT:

The socio-economic study encompasses the analysis of socio-economic conditions of habitation and communities living in the study area in addition to the potential issues & concerns of study area. In this regard, the view of stakeholders was invested through focused group discussions and questionnaire. The study involves the collection of baseline data including demographic details such as households, population literacy, employment pattern, health, transportation, communication & welfare facilities such as educational, recreational, hospitals and project awareness amongst the stakeholder. In addition, the economic resources, infrastructure facilities, communication, and aesthetic attributes are also considered in the study as per the requirements under the Ministry MoEF&CC.

6.0 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES:

Environment	Anticipated Impacts	Mitigation measures
Air environment	• In mining activity, the only source of emission is the particulate dust generation from the mining operation and the fugitive dust from loading and transportation activities. • In addition, gaseous emissions as fugitive are generated from the vehicle exhaust engaged in transportation of minerals. • All these emissions are human health hazard to workers & the surrounding population in terms of respiratory ailments and the vision impairments.	• Periodic air quality survey will be carried out to monitor the changes consequent upon mining activities as per the norms of State Pollution Control Board. • To control the emission of harmful gases, regular maintenance of equipment will be carried out. • Proper mitigation measures like water sprinkling on haul roads will be adopted to control fugitive dust emission. • Plantation will be carried out on the land arranged by project proponent. • To control the emissions, preventive maintenance of vehicles will be done and all transportation vehicles will carry a valid PUC certificate. • Over loading of trucks and consequent spillage on the roads will be avoided.
Water environment	• The mining operations may impact groundwater hydrogeology and surface water regime and the impacts depends on the nature of material, hydrogeology and groundwater requirements. • Groundwater contamination due to water table intersection.	• Mining operation will be undertaken as per approved mining plan; hence, there will not be noticeable effect on surrounding ground water resources due to mining. • There shall not any generation of wastewater including domestic effluent at the mining site as the worker/employees shall use the

		toilets constructed at the site of the stone crusher. The sewage generated shall be treated in the septic tank and the treated sewage shall be used for irrigation of greenbelt developed in the premises of the stone crusher. As such there shall not be any impact of treated waste effluent on the groundwater quality.
	• Surface water contamination due to waste water disposal.	• There will be no proposed discharge of wastewater into nearby water bodies from the project site; hence, the likelihood of direct surface water contamination is minimal. However, the Soan River lies approximately 6-7 km from the project location, therefore the overall risk to surface water quality remains low.
	• Excessive mining results in the thickness of natural layer which may reduce the recharge of groundwater.	• No overburden or loose sediments will be kept in the working benches particularly during monsoon season. • Check dams and gully checks will be raised to reduce the velocity of runoffs, thereby minimizing the flooding & carryover of deposits to the receiving water bodies. • Mine waste dump will be stabilized during the course of their retention. • There would not be any adverse effect on the ground water quality. The proposed mining shall be much above the water table. However, regular monitoring of quality in the existing hand

		pumps/tube wells in the vicinity would be carried out.
Noise Environment	• Noise in the proposed mining area will mainly arise from mining equipment operation, material handling, and vehicle movement. Due to the open nature of mining in Hill Slope, noise emissions will be intermittent and localized, occurring primarily during operational hours. • Prolonged noise exposure from mining activities can adversely affect human health, causing issues such as high blood pressure, increased heart rate, respiratory stress, neurological disturbances (anxiety, fatigue), sleep disruption, and hearing loss, especially among workers without PPE. While noise from Hill Slope mining is generally moderate and localized, continuous exposure may impact worker health and disturb nearby residential areas or sensitive receptors.	• Periodical monitoring of noise will be done so as to take corrective actions wherever needed. • Speed of the vehicles in the mining area will be restricted. • Proper maintenance of all vehicles & equipments will be carried out which will help in reducing generation of noise during operations. • Plantation will be taken up along the approach roads which will minimize propagation of noise. • Optimized scheduling of vehicle movement and material loading/unloading to avoid simultaneous high-noise activities. • Unnecessary blowing of horns will be prohibited. • Restricting mining and transportation activities to daytime hours to avoid disturbing nearby residents during night-time.
Land Environment	• Mining alters the natural land contours, leading to changes in topography and potential degradation of the land surface. Excavation activities can create pits and uneven terrain, affecting land stability if not properly managed.	• The mined area will be reclaimed through systematic backfilling using mine waste and topsoil to restore the landscape. After backfilling, the land will be stabilized by plantation or landscaping to improve ecological balance and prevent further degradation.

	• Mining operations generate solid waste in the form of overburden, rejects, and debris. Improper disposal of this waste can cause land pollution and hinder future land use.	• Mine waste will be backfilled into mined-out pits, followed by raising plantations over these areas to rehabilitate the land and prevent waste accumulation.
	• Removal of vegetation and soil during mining increases vulnerability to soil erosion, especially during monsoon rains, leading to loss of fertile topsoil and sedimentation in nearby water bodies.	• Soil erosion will be controlled by constructing gully checks, check dams, and other soil conservation structures to reduce runoff and retain topsoil.
	• Dust generated from mining, vehicle movement, and material handling can settle on nearby agricultural fields, potentially affecting crop growth and reducing productivity due to blocked stomata and altered soil properties.	• Dust control measures such as regular water sprinkling, greenbelt development along haul roads, and controlled vehicle movement will be implemented to minimize dust emissions, thereby protecting nearby agricultural activities.
Ecology & Biodiversity	• Mining involves removal of substrate, vegetation clearance, and stockpiling, can lead to ecological impacts such as habitat loss, disturbance to sediment-dwelling species, reduced light penetration, and lower primary productivity.	• Mining site is located far away from wildlife sanctuary & its eco-sensitive zones, as such there will be no impact on the ecological environment. Further the mining shall be carried out only with semi-mechanized means which do not have any significant impact on the surrounding ecology of the area. • Operations will be restricted during the monsoon and aquatic breeding seasons to prevent disturbance to wildlife and reduce sediment runoff.

	• From a biodiversity perspective, unregulated mining in these areas can destroy nesting and foraging sites for birds, reptiles, and small mammals, and disrupt invertebrate and plant communities adapted to sandy and gravelly substrates. Additionally, increased noise, dust, and vehicular activity contribute to habitat fragmentation and disturb local wildlife behaviour. • Although hill slope mining is generally less intrusive than	• Controlled excavation techniques will be adopted to limit the depth and area of mining, thereby minimizing habitat destruction. • Mined-out areas will be systematically backfilled using mine waste and topsoil, followed by plantation to restore ecological balance. • Sediment control structures such as silt traps and check dams will be installed to prevent sedimentation in nearby water bodies. • No stockpiling of material will be allowed directly on active streambeds to avoid disruption of flow and aquatic habitats. • Regular environmental monitoring will be carried out to ensure compliance with prescribed norms and to assess the effectiveness of restoration efforts. • Additionally, mining activities will be conducted in coordination with local communities and regulatory agencies to ensure sustainable and responsible operations. • Restrict mining to designated zones (leaving safety zone) to avoid critical habitats, minimizing disturbance to nesting and foraging areas of wildlife. • Adopt phased excavation, including backfilling mined areas and restoring native vegetation to maintain habitat continuity. • Water sprinkling to limit airborne particulate matter that can

	riverbed extraction, prolonged excavation without scientific planning and post-mining rehabilitation can result in significant biodiversity loss, reduced ecosystem services, and a gradual decline in the ecological stability of the Slope.	harm plants and animals. • Restrict vehicular traffic to defined routes and limit speed to reduce habitat fragmentation and wildlife disturbance. • Prevent runoff from mining areas entering water bodies by constructing sediment traps and maintaining riparian vegetation, preserving aquatic habitats.
Solid waste	• The mining project for sand, stone, and bajri is not expected to generate solid waste, as all excavated materials will be processed at the crusher. Additionally, the silt clay and top soil mixture @86277 MT produced during mining (over a period of 5 years) is considered a saleable by-product and will be sold along with the sand, minimizing waste disposal concerns.	• Domestic sewage after septic treatment at nearby crusher site will be disposed on to land for plantation. • The silty sand mixture generated during mining will be processed at crusher along with after minerals.
	• The topsoil will be generated as mine waste over five years, which, if left unmanaged, can disrupt local flora and fauna habitats through accumulation in waste piles. • Uncontrolled disposal may also alter landforms, cause instability and reducing land usability, while exposed topsoil is vulnerable to wind and water erosion, leading to sedimentation in nearby water bodies and deterioration of water quality.	• Topsoil will be stored separately in designated areas with proper drainage and protective cover to prevent erosion and nutrient loss. This stored topsoil will be promptly used for backfilling mined-out areas and for afforestation efforts to restore vegetation and stabilize the landscape. • To control erosion and sediment runoff, structures such as check dams/retaining structures will be constructed around stockpiles. • Regular monitoring and maintenance of these stockpiles, including sustaining vegetation cover, will help prevent

		degradation and disturbance to local habitats. • Additionally, controlled handling and avoidance of indiscriminate topsoil disposal will protect landforms, adjacent ecosystems, and nearby water quality.
Soil Environment	• The removal of surface soil during mining disturbs the natural land cover, making the area vulnerable to wind and water erosion. Without proper management, exposed soil can be washed away during rains or blown off by wind, leading to degradation of land quality and reduced agricultural productivity in surrounding areas. • Additionally, loss of topsoil disrupts soil structure and nutrient content, negatively impacting vegetation growth and local biodiversity. This erosion can also contribute to sedimentation in nearby water bodies, affecting aquatic ecosystems and water quality.	• To prevent soil erosion from runoff, proper garland drains will be constructed around waste dumps. • Proper drainage management is also critical to avoid waterlogging and uncontrolled surface runoff. • Areas identified for landscaping will be prepared before topsoil stripping, allowing the topsoil to be carefully removed and stored. This preserved topsoil will then be reused during the reclamation and rehabilitation of the mining site as part of the mine closure plan. • These measures, combined with erosion control structures and progressive land restoration, will help to maintain soil stability and promote ecological recovery.
Health and Safety	• The primary health hazards are dust and noise exposure. Dust generated during excavation, crushing, and transportation can lead to respiratory problems such as chronic bronchitis, silicosis, and other lung-related ailments among workers and nearby residents. • Prolonged exposure to high noise levels from machinery and	• All workers will be provided with appropriate Personal Protective Equipment's, including face masks and side-covered safety glasses to reduce dust inhalation and eye irritation. • Ear plugs will be provided to protect against noise-induced hearing loss. • Regular health check-ups, including chest X-rays, ECGs, and

	vehicle movement may cause hearing impairment and increased stress levels. • Additionally, dust can cause eye irritation and other visual discomforts. Without proper control measures, these hazards can significantly impact the health and well-being of workers and communities close to the mining area.	vision tests, will be conducted to monitor workers' health, with necessary medical treatment provided as needed. • These health assessments will be documented and reviewed annually to ensure ongoing occupational safety and well-being. Additionally, dust suppression measures like water spraying and equipment maintenance will be implemented to minimize dust generation, and noise control practices will be followed to reduce overall exposure.
Socio-economic environment	• The mining activity is expected to have a largely positive socio-economic impact by providing employment opportunities to the local population, thereby improving livelihoods and boosting the local economy. Since the workforce is primarily sourced from nearby communities, there is minimal risk of large-scale migration or social disruption. The influx of income may lead to better infrastructure, increased business for local vendors, and enhanced community services. However, potential challenges include increased pressure on local resources, such as water and transportation infrastructure, and possible conflicts over land use. If not managed properly, these could lead to social tensions or strain on existing public services.	To ensure positive socio-economic outcomes from mining of sand, stone, and bajri, the following mitigation measures are recommended: • Ensure hiring primarily from nearby communities to maximize local economic benefits and reduce social disruption. • Promote skill development programs to enhance local workforce capabilities and future job prospects. • Maintain open communication with local communities to address concerns and involve them in decision-making. • Promote occupational health and safety programs for workers and support community health initiatives. • Monitor social impacts regularly to ensure community well-being and address any emerging issues promptly.
Traffic	• Due to proximity of the project site to key road—NH-503 (Una-	Since the NH-503 (Una-Amb Road) lies at a distance of 5-6 kms

environment	Amb Road), there may be increased mining-related vehicle movement may significantly impact local traffic conditions. The rise in heavy vehicle traffic can cause congestion, increase road wear and tear, and contribute to elevated levels of air and noise pollution along these routes. Additionally, the higher traffic volume raises the potential for accidents, affecting the safety of commuters and nearby residents.	from the project site and will be used primarily for transporting materials to its final destination, as such following measure/practices shall be adopted to minimize the impact due to increase in the influx of vehicles used for transportation of mined material. • Implement strict vehicle scheduling to avoid peak traffic hours and minimize congestion on NH-503. • Use well-maintained vehicles to reduce emissions and noise levels. • Enforce speed limits and restrict movement of heavy vehicles near sensitive zones to enhance safety. • Provide adequate traffic signage and employ flaggers or traffic controllers during peak mining transport activities. • Regularly maintain and repair access roads to prevent deterioration and minimize dust generation. • Promote driver awareness and training on safe driving practices to reduce accident risks. • Develop alternate routes where feasible to divert heavy vehicles away from congested or residential areas. • Conduct periodic monitoring of air quality and noise levels along transport routes and take corrective actions if the monitored levels are found beyond the prescribed standards.

7.0 Accessibility of transport upto mining site:

The proposed mining site is located near the village Sanjhot. The site is approachable through Kaccha Road Dhamandri Sanjhot diverting LHS from village Sanjhot. The site is at a distance of approximately 13.0 kms from the nearest major city Una.

8.0 Plantation:

The plantation will be done on the exhausted/excavated benches and the applied mining lease area after leaving the safety zone fenced properly. In addition to that, additional plantation will be planted along the entire length of the lease area. The total cost of plantation including its maintenance for five years will be approx. 12.0 Lakhs. The cost includes cost of plants, manure and other labour activities. The proposed species for plantation include *Bauhinia variegata* (Kachnar), *Morus alba* (Sahtoot), Drek (Melia azedarach), *Phyllanthus emblica* (Amla), and *Populus deltoides* (Poplar) etc. The estimated survival rate proposed to be ***achieved shall be 80%.***

Year-wise plan for plantation is shown in the table below:

Year	Area to be covered (in Sq. meter)	Number of trees to be planted
First	4000	1000
Second	4000	1000
Third	4000	1000
Fourth	4000	1000
Fifth	4000	1000
Total	**20000**	**5000**

Point of public utility: There is no point of public utilities present in and around the mining lease area.

9.0 PROJECT BENEFIT:

The project will bring overall improvement in the surrounding area by way of employment opportunities and the state by revenue generation. There will be improvement in the economic condition of the people and the enhancement in the quality of life through employment.

10.0 ENVIRONMENTAL MANAGEMENT PLAN:

No major environmental impacts are anticipated in the Hill Slope mining except the generation of fugitive emissions from handling of minerals. The preventive measures will be in place to keep the pollutants in the prescribed levels. Plantation as proposed will further improve the air quality in the area. A budgetary provision of Rs. 35.0 Lakhs as capital cost and Rs. 6.3 Lakhs as recurring cost has been

made for environmental management. In addition, provision has been made for occupational health & safety of workers. Regular Environmental Monitoring has been instituted in the environmental monitoring program.

Conclusion: As the proposed project results in the economic, social & environmental upliftment of the area and the initiative through the CSR & CER, there will be positive impact in the region. The project may therefore be implemented at the earliest.

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

CHAPTER-1.0

INTRODUCTION

1.0 INTRODUCTION

The mining sector in India is a substantial economic activity that boosts the country's GDP. The mining industry only provides 2.2% to 2.5% of GDP, but it makes up 10% to 11% of the GDP of the entire industrial sector. A mere six percent goes toward the total cost of producing minerals, even with smaller-scale mining operations. The mining sector in India offers a large number of employment opportunities.

Minor minerals such as Stone & bajri are a valuable natural resource that provides the silica needed to create sodium silicate, a chemical substance that is used to make both regular and specialty glasses. Sand is added to clays to lessen shrinkage and cracking during the brick-making process. It is an element in plaster and concrete. Stone & bajri is a crucial raw resource used in the building industry for a number of purposes. Cement, gravel, water, steel, and river sand are the ingredients of reinforced concrete. It is used as plastering and joint filling mortar, along with cement and water. The company **M/s Shiva Stone Crusher** is committed to producing high-quality of Stone & bajri that the corresponding sectors may use.

An Environmental Impact Assessment (EIA) is a planning technique used to evaluate a project's environmental problems early in the planning and design phase in order to ensure that the project is environmentally feasible. When there are negative effects, they are identified and addressed in an environment management plan, which also designs mitigating strategies to control such impacts in a way that preserves the local ecology and environment. The objective of the present EMP is to prevent/minimize any such adverse impacts.

1.1 PURPOSE OF THE REPORT:

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for undertaking any project. EIA systematically examines both beneficial and adverse consequences of the proposed project on the surrounding environment ***and ensure that these impacts are taken into account during the project execution namely Sh. Bhupinder Thakur, Prop; M/s Shiva Stone Crusher.*** According to the Environmental Impact Assessment (EIA) Notification dated September 14, 2006, as amended from time to time, any new or expansion project requiring an EIA requires prior environmental clearance from the Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India, New Delhi. The purpose of the Environmental Impact Assessment is to evaluate the area's current environmental conditions and develop an Environment Management Plan (EMP) based on the proposed mining activities. The current EIA report identifies and addresses any adverse impacts arising from the

project.

1.2 CATEGORY OF THE PROJECT:

As per the amended MoEF&CC notification no. S.O 3977 (E) dated 14th August, 2018, the proposed project initially falls under 'Category B2' and thus, the Environmental Clearance (EC) lies with the state government. However, due to the presence of four mining leases within a 500m radius of the project site, the project is re-categorized as **'Category B1'** for the purpose of public consultation.

In accordance with this categorization, a comprehensive Draft Environmental Impact Assessment Report has been prepared for the proposed project

1.3 IDENTIFICATION OF THE PROJECT & PROJECT PROPONENT:

1.3.1 Identification of the Project:

The proposal pertains to the EC for the lease area of 02-47-13 Hectares for mining of stone & bajri & falls under Category B1 due to the cluster formation as per EIA Notification, 2006 & its subsequent amendments. The details of the project are tabulated in table 1.1:

Table 1.1 Project Details

1.	**Name of the applicant**	Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher
2.	**Name & Address**	Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher, Village & P.O. Dhamandri Tehsil & District Una, H.P.
3.	**Area (Ha)**	02-47-13 Hectares
4.	**Postal address**	Village & P.O. Dhamandri Tehsil & District Una, H.P.
5.	**Status of mine**	Application of Fresh EC

1.3.2 Project Proponent:

Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher is involved in this business considering motive of sustainable and ecofriendly work culture and no harm to surrounding environment from the project activities.

1.3.3 Legal Provision:

The proponent satisfies all legal requirements necessary for the project such as Letter of Intent, Approved mining plan, 500-meter radius certificate, Jamabandi and duly signed Joint Inspection Report attached as Annexures.

1.4 BRIEF DESCRIPTION:

1.4.1 Nature of the Project:

The mining lease area forms a part of the Hill- Slope comprising of boulders, cobbles, pebbles, bajri, sand/silt & clay deposits of terrace alluvium. The proposal is for EC for production of 32,000 TPA of minerals.

1.4.2 Size of the Project

The project lease area is 02-47-13 Hectares and the production capacity is 32,000 MT/annum. The size and magnitude of the operation depend upon the availability of laborers, weather conditions and other local conditions. The major mining activity will be undertaken during the dry seasons only. The average number of working days in the year would be 280 days.

1.4.3 Location of the Project:

The mining area is situated in the form of a Hill Slope near the village Sanjhot. The total lease area of mining measuring 02-47-13 Hectares. The site is approachable through Kaccha Road Dhamandri Sanjhot diverting LHS from village Sanjhot. The site is at a distance of approximately 13.0 kms from the nearest major city Una.

The details for the same given in table 1.2. Figure 1.1 and 1.3 shows the google image of the mining site.

Table- 1.2

Detail of Revenue records

Khasra No.	Area (In Hect.)	Owner Govt./ Private	Kism	Mauza & Mohal	Panchayat
596 & 599	02-47-13	Private Land	Khadater	Sanjhot	Nangal Salangri

1.4.4 Detail of road transport:

The proposed mining site is located on a hill slope near Village Sanjhot, Tehsil and District Una, Himachal Pradesh. It is accessible via a kaccha road from the Dhamandri–Sanjhot route.

The crusher is situated about 3 km from the lease area, and mineral will be transported via the existing *kaccha* road. With an average annual production of 32,000 metric tonnes, around 7–10 trucks/tippers (15-tonne capacity each) will be used for transportation to the crusher.

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Figure – 1.1

Location Map (From India Map to Local Map)

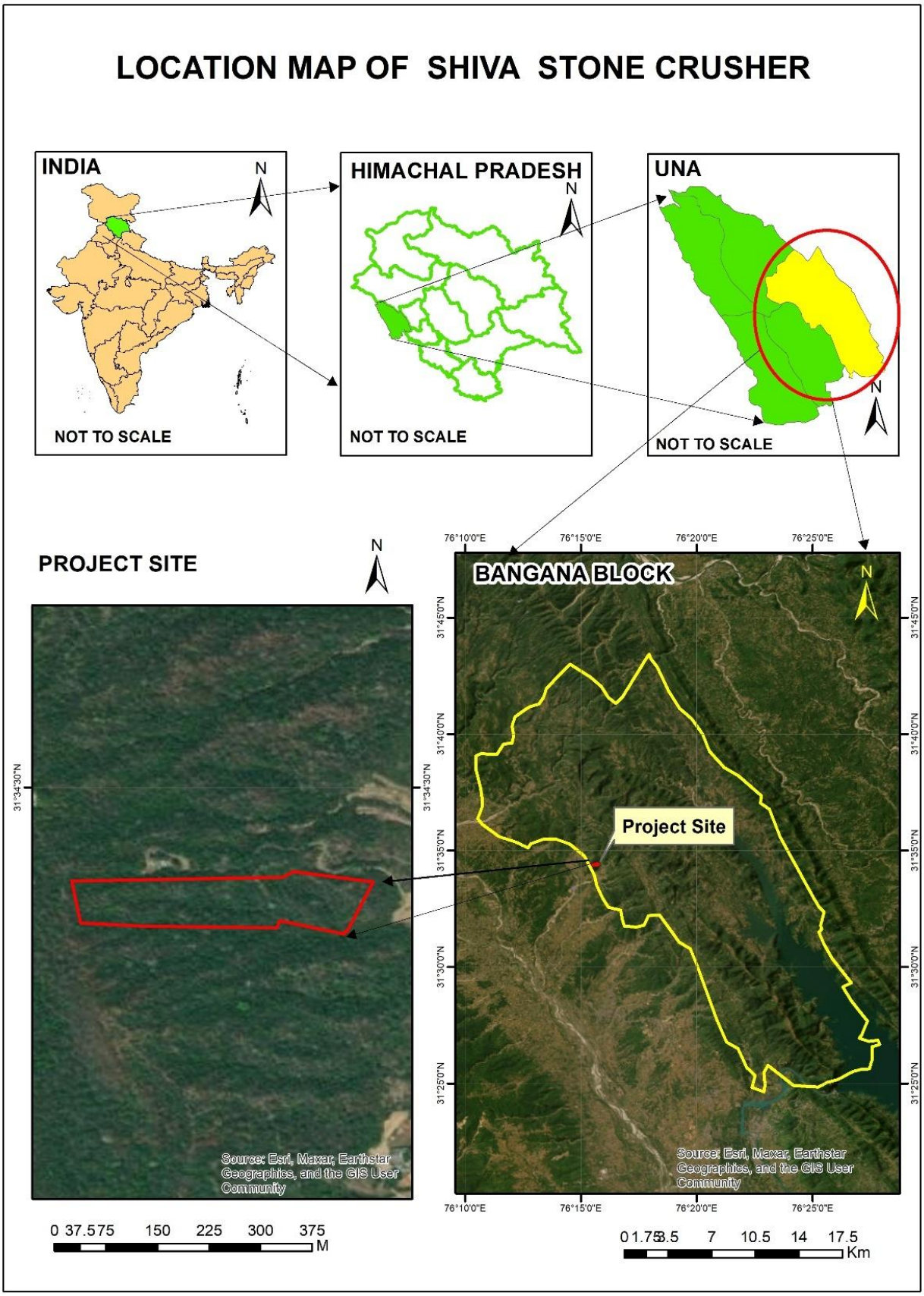
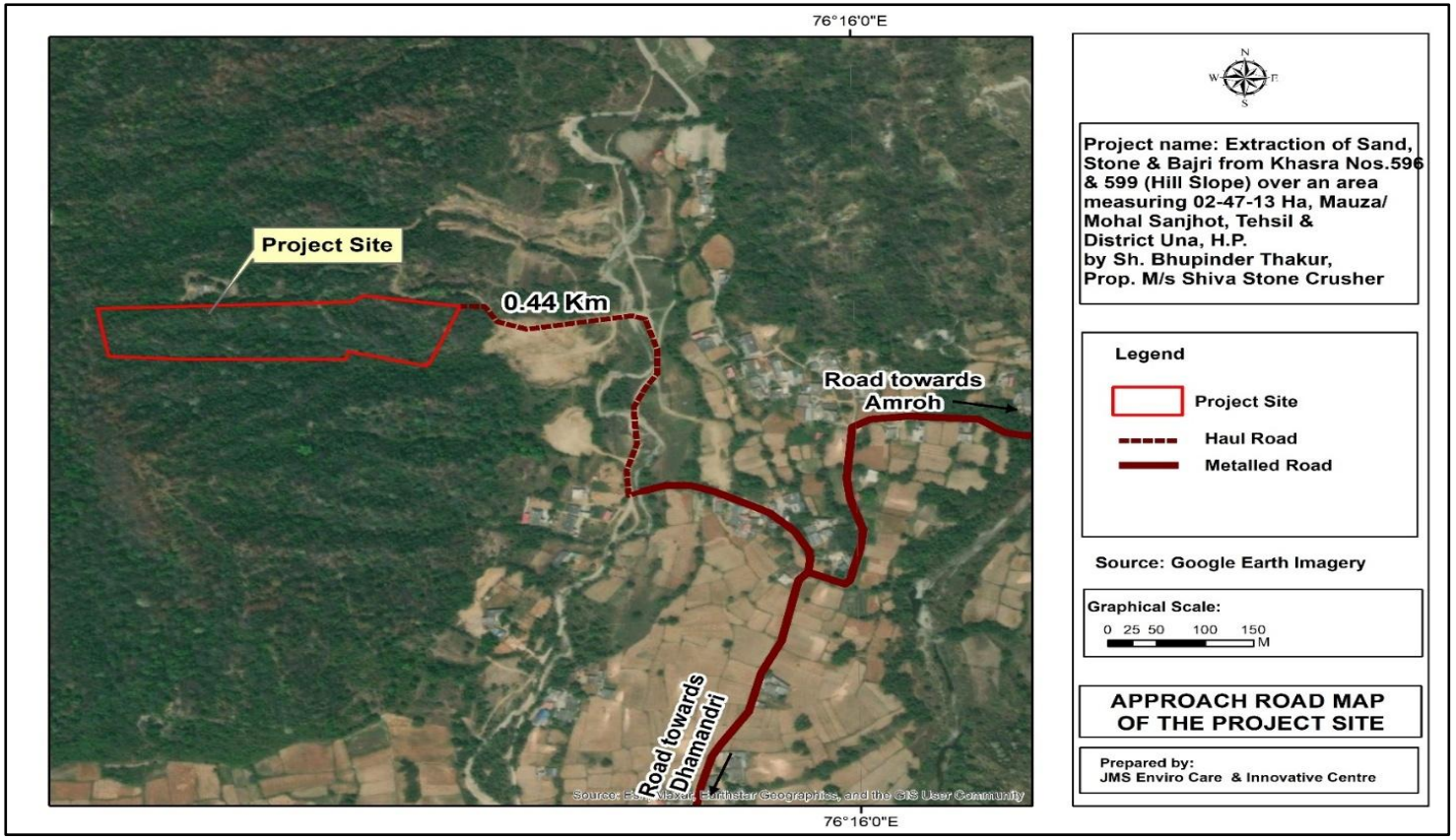


Figure- 1.2

Approach Road to the Mining Area

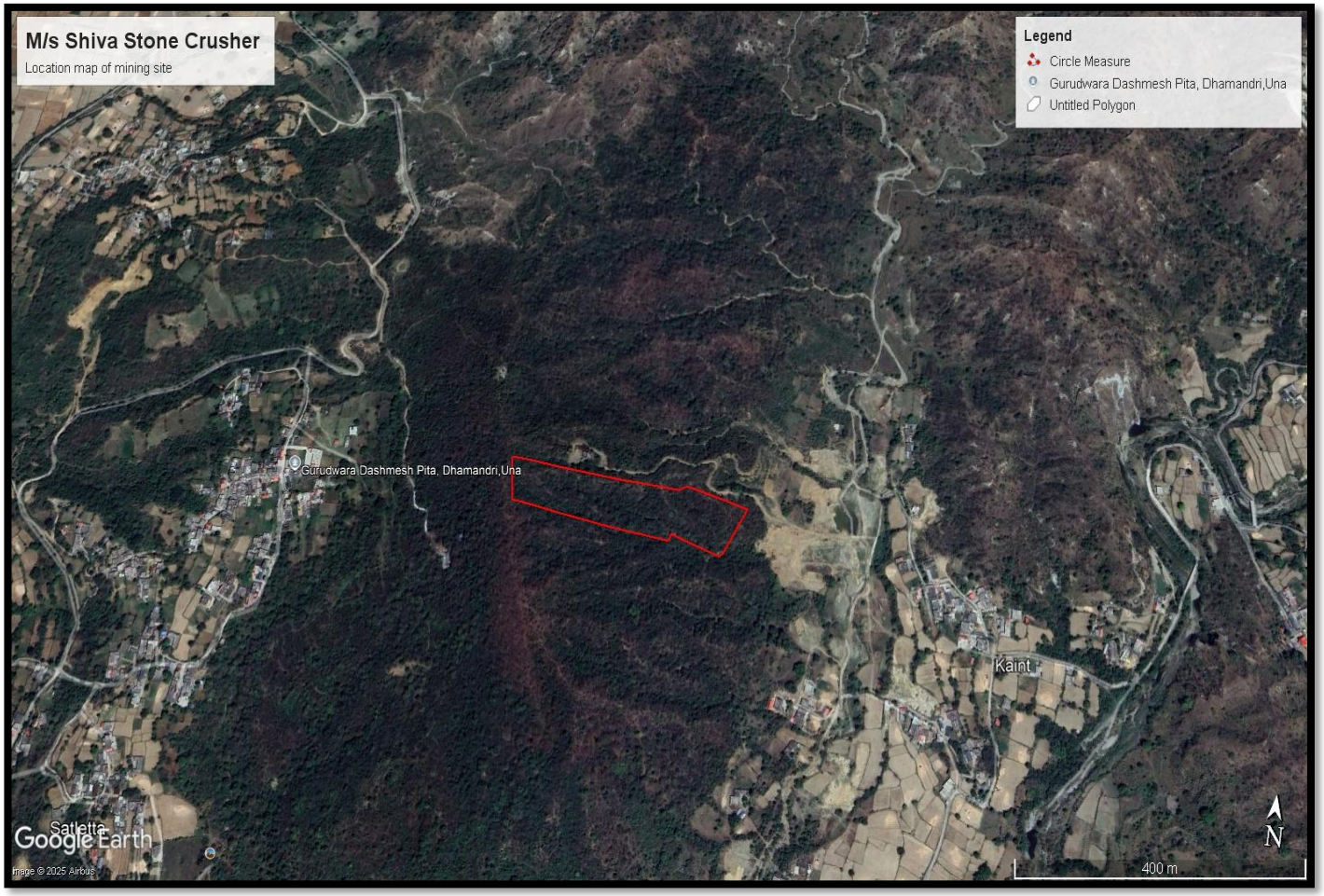


(Source: Google Earth Image)

The proposed mining site is situated in the Hill Slope near the village Sanjhot The site is approachable through Kaccha Road Dhamandri Sanjhot diverting LHS from village Sanjhot. The site is at a distance of approximately 13.0 kms from the nearest major city Una.

Figure 1.3

Google Earth map of the Mining Area (Showing the cluster sites)



(Source: Google Earth)

1.5 SCOPE OF THE STUDY:

This study contains various information on the Environmental factors viz-a-viz contribution of pollution by the proposed unit. These factors include air, water, noise, health, socio economic, land use and agricultural pattern, hydrological conditions, geomorphological and physiographicalstudy It discusses the predicted impact of the proposed plant activities on these factors. Broadly under the scope it is envisaged:

- To identify, quantify & evaluate positive or negative impacts of various operations on different environmental components.
- To evaluate proposed pollution control measures and to suggest additional control strategies, ifany, to mitigate the adverse effects.
- To identify risk factors & suggest their mitigation including occupational health of theworkers.
- To prepare Environmental Management Plan for utilization and adoption of safety measures.
- To delineate future Environmental quality monitoring programme.
- To identify the needs of the study area and suggest supportive measures under Corporate Social Responsibility.

1.5.1 METHODOLOGY:

Various steps involved in Environmental Impact Assessment study of the proposed project are divided into the following phases:

- Identification of significant environmental parameters and to study the existing status within the impact zone with respect to air, water, noise, soil and socio-economic and hydrological components of the environment
- Study of various activities of the proposed project for manufacture of final product and to identify the area's leading to impact/change in environmental quality.
- Identification/prediction of impacts for the identified activities and to study levels of impacts on various environmental components.
- Evaluation of final levels of various parameters after superimposing the predicted impacts overthe baseline quality.
- Formulation of Environmental management plan for implementation in the proposed project.

1.6 IMPORTANCE TO THE COUNTRY OR REGION:

The mine lease area is part of Hill-Slope. Due to rapid infrastructure development in India, the demand of construction material has increased. The operation of project will provide demand & increased employment to the surrounding people, thereby improving the socio-economic status of area.

- **Demand and Supply:** The demand of this basic material is fast growing due to boost in the

infrastructure of country. The minerals are used mainly in the construction activities like buildings, bridges etc. The requirement for the mineral is always high in the nearby cities and towns. There is therefore, a good demand of mineral in the domestic market.

- **Domestic/ Export market:** The demand of Stone is limited to local domestic market and it has no potential for export.
- **Export possibility:** There is no proposal for the export of mined minerals as the same will cater to the indigenous demand which is increasing each passing day.

CHAPTER-2.0

PROJECT DESCRIPTION

2.0 GENERAL:

Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher has proposed a new project of non-coal mining for obtaining E.C from the concerned authority having production capacity approx. 32000 MT (excluding waste). The project itself falls in category B2, **however due to cluster situation having four other mining leases within the 500-m radius of the project site, the project is categorized as Category B1 as per EIA Notification, 2006 amended till date.** In this project, mining of minor minerals is manual in the Hill Slope having an area of 02-47-13 hectares. The mining plan has been prepared by registered H.P.R.Q.P. and approved by Industry Department of Himachal Pradesh. Description of mine development and information associated with this project has been furnished in this chapter.

2.1 YEAR WISE PRODUCTION PROGRAMME:

The proposed mining lease area is situated on hilly terrain where suitable material is available for crushing. The mining operations would be carried out upto a depth of 6 meters from the surface level.

Details of the production of the stone, silty sand and top soil for various benches from first to fifth year are given below in table 2.1.

Table: - 2.1

Showing year-wise production programme

Bench no.	Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
1, 2 & 3	**1st Year**	488, 482, 476	63545	32000	31545	17286
3& 4	**2nd Year**	476, 470	87120	32000	55120	17231
4	**3rd Year**	470	55120	32000	23120	17183
4 & 5	**4th Year**	470,464	87470	32000	55470	17294
5	**5th Year**	464	73136	32000	23470	17283
	Total		**3,66,391**	**1,60,000**	**1,88,725**	**86,277**

Thus, during five-year total production of minerals will be approx. ***1,60,000*** metric tons.

2.2 MINE DEVELOPMENT AND PRODUCTION:

The mineable reserves have been estimated by the cross- sectional area method and 02 numbers of cross-

sections A-A' & B-B' were plotted at 40.00 meters intervals. The specific gravity of the conglomerate has been taken 2.25 for calculating the mineable reserves. Details of mineable reserves are tabulated in 2.2:

Table 2.2 Showing Estimated mineable reserves in tonnes

Table Showing Estimated mineable reserves in tonnes	
Reserves	**Quantity (in MT)**
Mineable (Useable + Wastage)	643613
Useable (Mineable – Wastage)	418346
Wastage (Mineable -Useable)	225267

2.2.1 Development and production at the end of 1st year:

An estimated 32000 metric tonnes of minerals (stone and bajri) are produced annually, with 63545 MT of total usable reserves.

The production of the stone, silty sand and top soil for the first year is given below in table 2.3.

Table: 2.3 Showing the production details for the 1st Year

Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
1st Year	488	5923	5932	0	3190
	482	21060	21060	0	11340
	476	36562	5017	31545	2756
	Total	**63545**	**32000**	**31545**	**17286**

2.2.2 Development and production at the end of 2nd year:

During the 2nd year, the remaining material from benches at 476 and new bench at 470 M.R.L shall be opened with total reserves of 87120 MT.

The production of minerals for the second year is given below in table 2.4.

Table: 2.4 Showing the production details for the 2nd Year

Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
2nd Year	476	31454	31454	0	16392
	470	55575	455	55120	299
	Total	**87120**	**32000**	**55120**	**17231**

2.2.3 Development and production at end of 3rd year:

During the 3rd year, material from bench at 470 M.R.L. shall be opened with total usable reserves of 55120 MT.

The production of minerals for the third year is given below in table 2.5.

Table: 2.5 Showing the production details for the 3rd Year

Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
3rd Year	470	55120	32000	23120	17183
	Total	**55120**	**32000**	**23120**	**17183**

2.2.4 Development and production at end of 4th year:

During this year, the remaining material from benches at 470 and new bench at 464 M.R.L shall be opened with total reserves of 87470 MT.

The production of minerals for the fourth year is given below in table 2.6.

Table: 2.6 Showing the production details for the 4th Year

Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
4th Year	470	23120	23120	0	12443
	464	64350	8880	55470	4851
	Total	**87470**	**32000**	**55470**	**17294**

2.2.5 Development and production at end of 5th year:

During this year, the useable material to the tune of 55470 MT from both these benches shall be completely exploited. The production of the stone, silty sand and top soil for the fifth year is given below in table 2.7.

Table: 2.7 Showing the production details for the 5th Year

Year	Bench Level (in m)	Opening reserves of useable material (Stone & Bajri)	Useable material consumed from the bench	Closing reserves of the bench (M.T.)	Mine waste including silty sand & soil
5th Year	464	55470	32000	23470	17283
	Total	**55470**	**32000**	**23470**	**17283**

2.3 END USE OF MINERAL:

The extracted material will be processed in the already established stone crusher unit for manufacturing grit and manufactured sand.

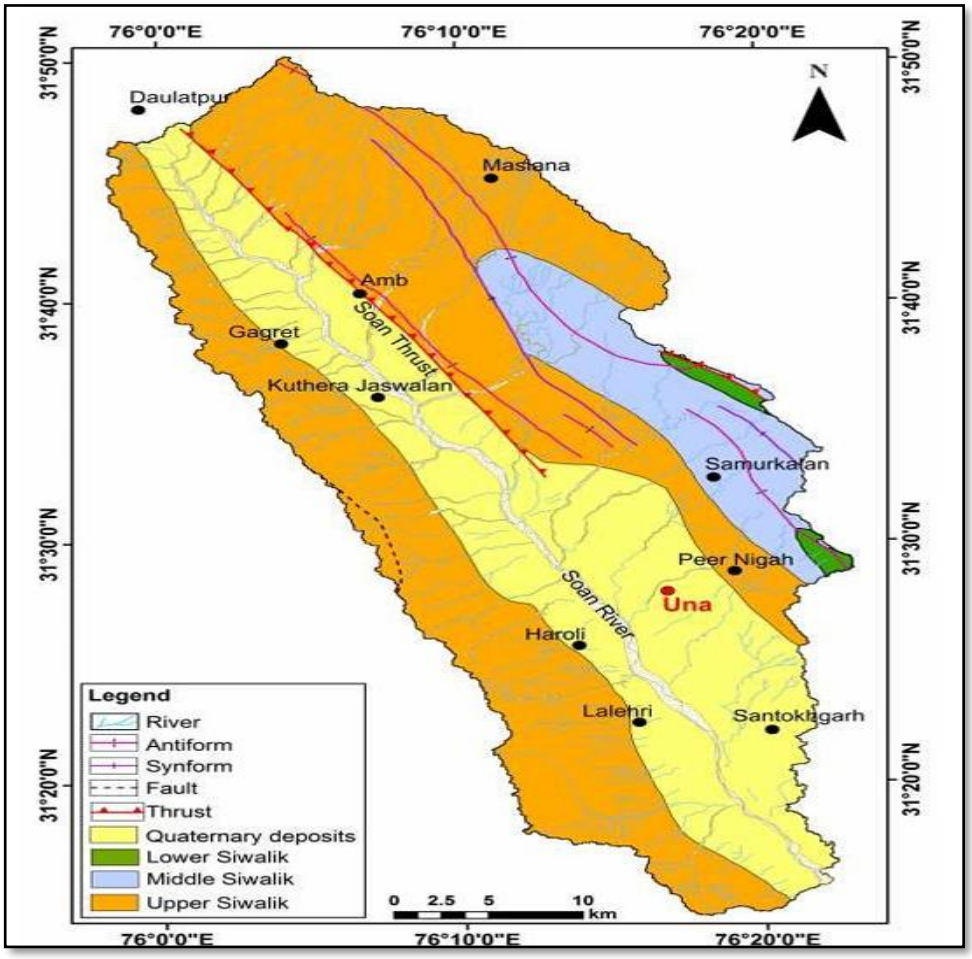
2.4 GEOLOGY:

- **The geology of the Applied Lease Area**

The Siwalik Group mainly represents the rocks of the district. In addition to this at few places the newer alluvium of Quaternary age is also present. In the advent of Neocene, a depression was formed in front of the rising mountains (Prto-Himalaya). This depression becomes a repository of a thick sequence of the molasses sediments of the Siwalik Group comprising conglomerates in general are poorly cemented but at places they are very hard. These consist mainly of pebbles and cobbles of quartzite, the stray pebbles of granite, limestone, sandstone, breccias and lumps of clay stone are also observed at places. Often the size of pebbles is large enough to be called as boulders. The conglomerates not only occur as regular band but also as lenticular bands alternate with micaceous sandstone and clay beds. The sediments were bough down 2 to 25 million years ago by the numerous fast flowing rivers issuing forth from rapidly rising mountain mass of the Himalaya in the north. The Siwalik Group is divisible into three sub-groups respectively the lower, Middle and upper on the basis of the litho-Stratigraphy.

Figure: 2.1

Geological map of District Una



Source- DSR, Una

Siwalik Group

The Siwalik Group in the Himachal Himalaya forms a parallel foot-hill belt in the Sub- Himalayan zone, extending along the southern margin of the Paleogene Sirmaur Group belt from the Ravi to the Yamuna and forms part of the larger Sub- Himalayan mega belt extending from Potwar basin in NW to the Arunachal foot-hill in SE. In the Himachal Himalaya it has maximum width between Hoshiarpur and Joginder Nagar. The Siwalik sediments through occurring as an independent structural belt, are also seen to overlie the Muree in the Jammu Sector of the Kashmir Himalayan and the Kasauli in the Himachal Himalayan Pilgrim (1910) recorded a gradual transition from Muree beds to Lower Siwalik in the Rawalpindi and Jhelum districts of Pakistan and from Kasauli to Lower siwalik (Nahan) in the Himachal Himalaya. This fact assumes importance because there is a tendency to ignore this normal relationship between the Siwalik and Sirmour Groups at Dharamshala, Sarkaghat and Nalagarh.

At Haritalyangar near Bilaspur, the Lower Siwalik is seen resting on the Dagshai with an unconformity, which is described as the most striking discordance in the whole sequences of freshwater deposits and evidently representing a period of considerable earth movements (Pascoe, 1964).

The Siwalik Group is divisible into three subgroups respectively the Lower, Middle and Upper on the basis of lithostratigraphy.

Lower Siwalik Sub-group

The Lower Siwalik subgroup consists essentially of sandstone-clay alternation. The lower boundary of the Lower Siwalik does not crop out at surface in the Jawalamukhi sector. In a deep well drilled in the over Thrust block of the Jawalamukhi Thrust, however the Lower Siwalik is found conformably is also marked by an increase in the percentage of heavy minerals giving a dark appearance to the rock and incoming of less rounded heavy minerals like staurolite and unstable types like zosite and epidote. The lithostratigraphy of the Siwalik Group is shown in table 2.8.

Table 2.8

Showing Lithostratigraphy of the Siwalik Group

Group			Lithology	Age	(Approx.) Thickness
Newer Alluvium			**Sand, Silt, Gravel and Pebbles**	**Quaternary**	**Variable**
Siwalik Group	Upper Siwalik	**B**	Predominantly massive boulders with red orange clay as matrix and minor sandstone andearth, buff and brown clay stone.	**Neogene**	**2300 meters**
		A	Sandstone, clay and conglomerate alternation		
	Middle Siwalik	**B**	Massive sandstone with minor conglomerateand local variegated clay stone.		**1400 to 2000 meter**
		A	Predominantly medium to coarse- gained sandstone and red clay alternation, soft pebbly with subordinate clay stone, locally thick prism of conglomerate.		
	Lower Siwalik	**B**	Alternation of fine to medium-grain sporadically		**1600 meter**

			pebbly sandstone, calcareous cement a prominent chocolate and maroon clays tone in the middle part.		
		A	Red and mauve clay stone with medium to fine-grained sandstone. Thin intercalation of		

Source- District Survey Report, District Una, H.P

2.5 LOCAL GEOLOGY OF THE PROJECT SITE:

The mining site lies on a hill slope composed of 'B' members of the Upper Siwalik Formation, mainly consisting of boulders, cobbles, pebbles, bajri, clay, sand, and silt from terrace alluvium. The area belongs to the Siwalik Group, known for its mixed coarse to fine-grained sediments.

2.6 ESTIMATE OF GEOLOGICAL RESERVES OF EACH MINERAL:

An average specific gravity i.e., 2.25 is taken into consideration for the calculation of mineral potential in the area mining for mining purpose. The geological reserves have been estimated by the cross- sectional area method 02 nos. of cross sections A-A' & B-B' were plotted at 40 meters intervals. As no exploration works by way of drilling have been carried out but, it is implied from the field observations that a similar kind of rock is available along the hill and is easily visible all along the surface as well. In view of the above, the 100% reserves are kept in the proved category. The details of the geological reserves of the rock are as mentioned in the table 2.9:

Table 2.9 Showing Geological reserves in metric tonnes

Section line	Cross-sectional area (in sqm)	Section interval (in mtrs.)	Reserves of the rock (in cum)		Reserves of the rock (in mt)	
			Proved	Possible	Proved	Possible
A-A'	**9000**	40	360000	216000	810000	486000
B-B'	**1200**	40	48000	28800	108000	64800
TOTAL					**918000**	**550800**

2.7 RECLAMATION PLAN:

Best possible terracing of hill slope: The mining is suggested in a way so that there is best possible terracing of the hill slopes.

Aesthetic: Proper mining will form terraces in the hillslopes so that they are able to bear systematic cultivation of agricultural /horticultural crops, thus enhancing the aesthetic look. The proper management of the landscape will add to the aesthetic look of the area.

2.8 WASTE DISPOSAL ARRANGEMENT:

During mining operation, low grade mineral like silty sand and top soil will be generated as mine waste. The waste material will be partly used for the maintenance of road and part of this mineral can be stacked at proper place for utilization of this material during road construction or some other use as a filling material. The top soil will be spread over the benches developed after mining for growing plantation. The year wise generation of silty sand/ Top soil is shown in the table 2.10:

Table 2.10 Showing year wise generation mine waste

Year	Mine waste (Silty sand & Top Soil in MT)
1st Year	17286
2nd Year	17231
3rd Year	17183
4th Year	17294
5th Year	17283
Total	86277

2.9 TOPSOIL UTILIZATION:

The topsoil will be spread over the benches developed after mining for growing plantation.

2.10 PREVENTIVE RETAINING STRUCTURES:

A 176-meter-long crate wire/retaining structure, with a height of 1.5 meters and a width of 1.0 meter, is proposed along the lease boundary. The wall will be constructed in stages, with an estimated cost of ₹15,00,000/- lakhs for construction and maintenance.

2.11 PLANTATION WORK:

Plantation helps in reducing the pollution as they absorb both the gaseous and particulate pollutants, improves the aesthetic value of the local environment and enhancing the natural environment. In Hill- Slope mining, the plantation shall be done on the exhausted/excavated benches and the applied mining lease area after leaving the safety zone fenced properly. In addition to that, additional plantation will be planted along the entire length of the lease area. The year-wise area proposed for plantation is shown in the year-wise working maps.

Year-wise area proposed for plantation with number and species of trees to be planted is given in the table

2.11 and 2.12.

Table: 2.11 Details of plantation

Year	Area to be covered (in Sq. meter)	Number of trees to be planted
First	4000	**1000**
Second	4000	**1000**
Third	4000	**1000**
Fourth	4000	**1000**
Fifth	4000	**1000**
Total	**20000**	**5000**

Table: 2.12 Species to be planted

Common name	Botanical name	Family	Habitat
Kachnar	*Bauhinia variegata*	Fabaceae	Tree
Sahtoot	*Morus alba*	Moraceae	Tree
Amla	*Emblica officinalis*	Phyllanthaceae	Tree
Poplar	*Populus deltoides*	Salicaceae	Tree
Drek	*Melia azedarach*	Meliaceae	Tree

The total cost of plantation including its maintenance for five years shall be approx. Rs. 12.0 Lakhs. The cost includes cost of plants, mineable and other labor activities. ***The estimated survival rate proposed to be achieved shall be 80%.***

2.12 MANPOWER REQUIREMENT:

The manpower required for the mining process will be around 28-30 persons. The details of manpower are given in table 2.13 below:

Table: 2.13 Manpower Details

Category	Numbers
Mining Engineer	01
Geologist	01
Foreman	01
Operators/ Drivers	10
Labours	15
Total	**28**

2.13 TYPE OF MINING & MINING METHOD:

The method of mining will be manual. The mining operations shall be carried out in the mining lease area after leaving 5.0 meters buffer/safety zone.

The following conditions have been taken into consideration:

- For undertaking systematic and scientific mining, the open cast mining is proposed by forming 6m X 6m benches (09 number of benches) and maintaining 45° angle of repose to ensure

stability of hill slope.

- The project proponent will start mining operation from top portion from 488m elevation and first bench is proposed at 440mRL level with a face height of 6 m.
- No blasting will be required /undertaken.
- For safety, crate wire/ Gabion structure will be constructed along the lower side of the applied mining lease area to stop any rolling down of debris/rocks.
- The mining operations in the lease area are confined to day light hours, from 9:00 A.M. to 6:00 P.M., taking 280 working days/annum.
- Mining will be conducted in a systematic and scientific manner, with minimal risk of landslides. A buffer zone of 5–7.5 meters is recommended to ensure the safety of adjacent areas.

2.14 WATER REQUIREMENT:

Total amount of water required for the project is 5.0 KLD. Water will be sourced from own Borewell at crusher site. Permission for the same has been taken and affidavit has been attached as Annexure-VIII(a).

Table: 2.14 Water Requirement Details

Purpose	Water requirement (in KLD)	Source
Domestic	1.4	Borewell at crusher site (will be supplied through tankers)
Dust suppression	2.0	
Greenbelt development	1.6	
Total	**5.0 KLD**	

Figure - 2.2

Surface and Geological Feature Map

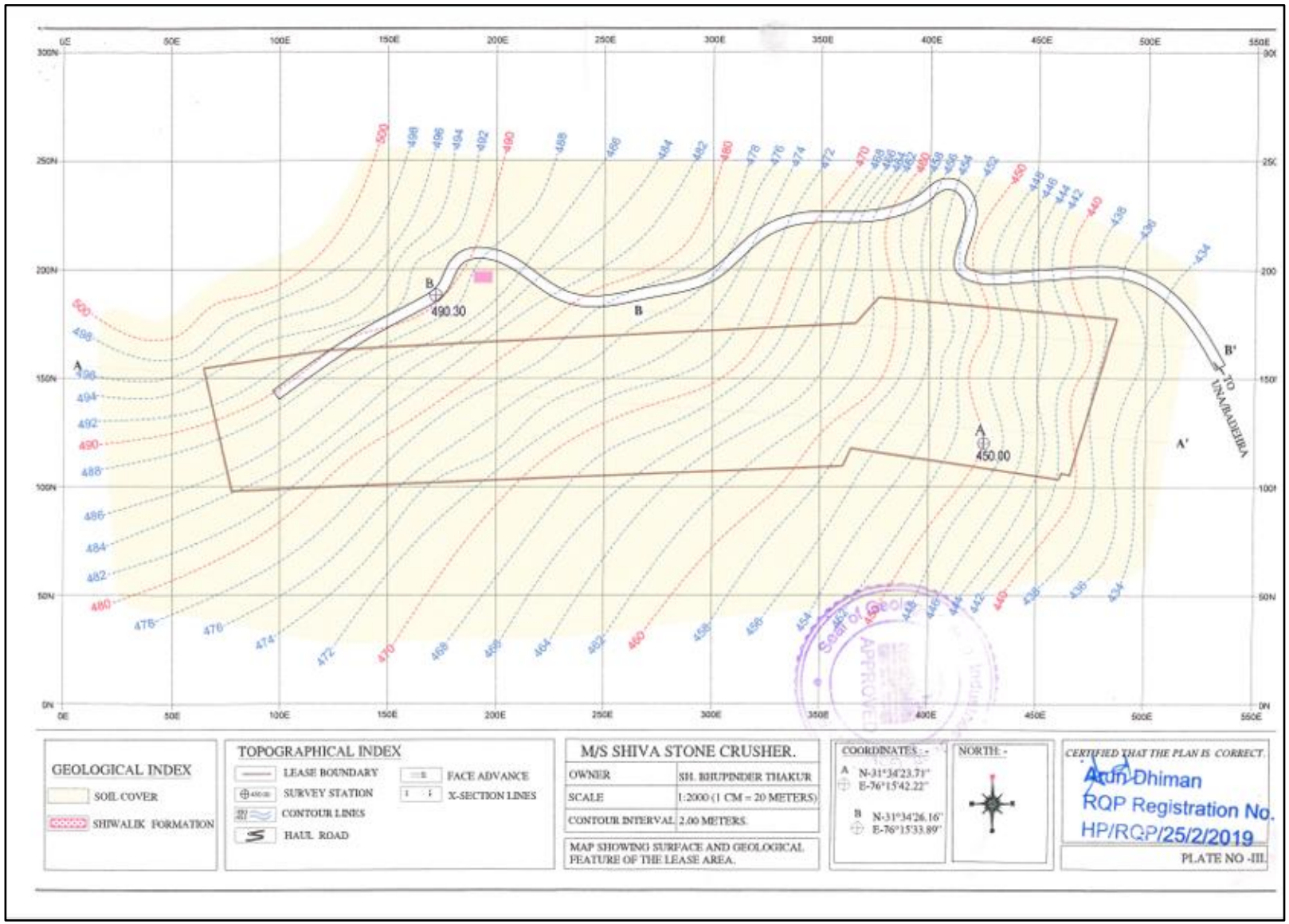


Figure -2.3

Pit Plan for the 1st Year

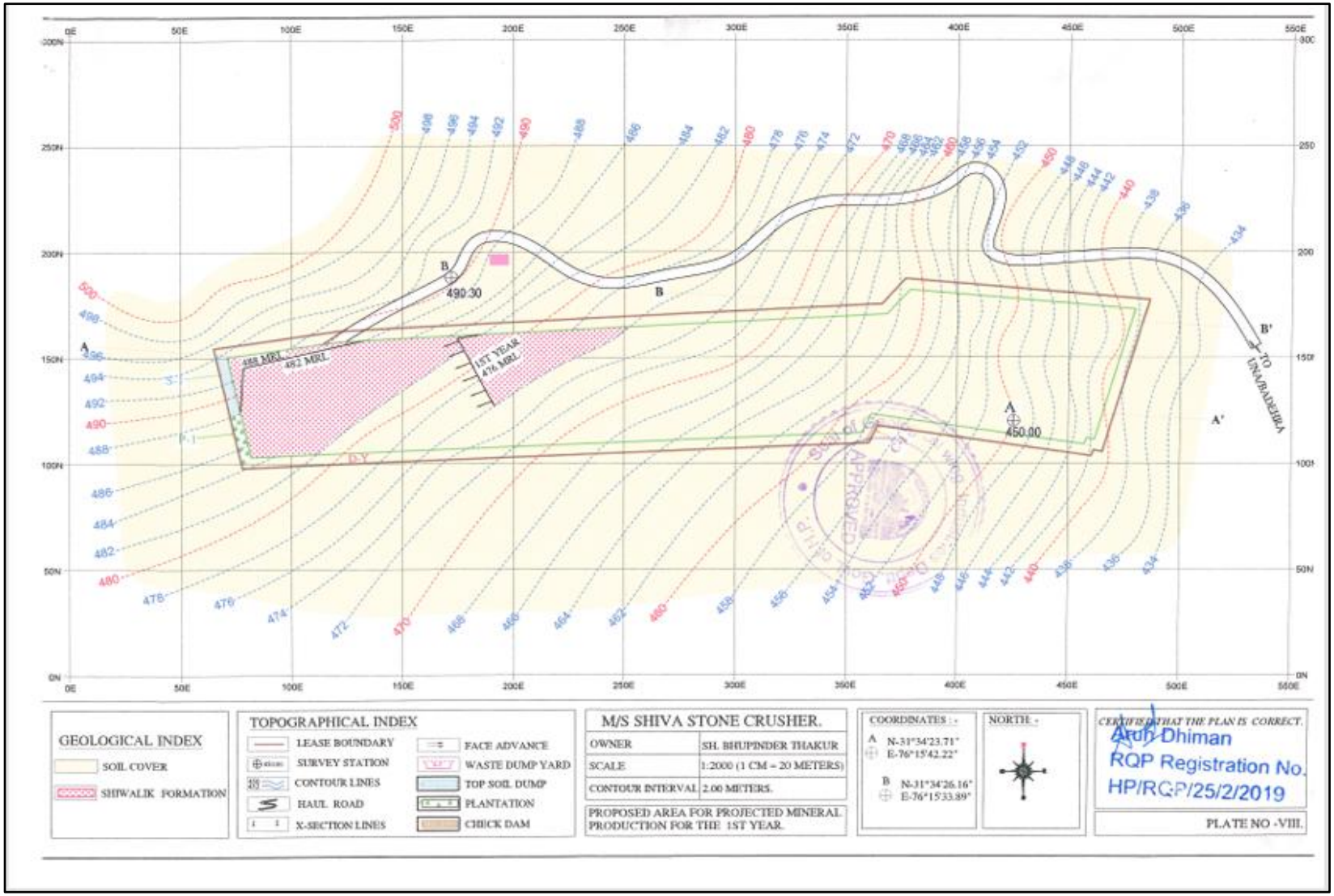


Figure- 2.4

Pit Plan for the 2nd year

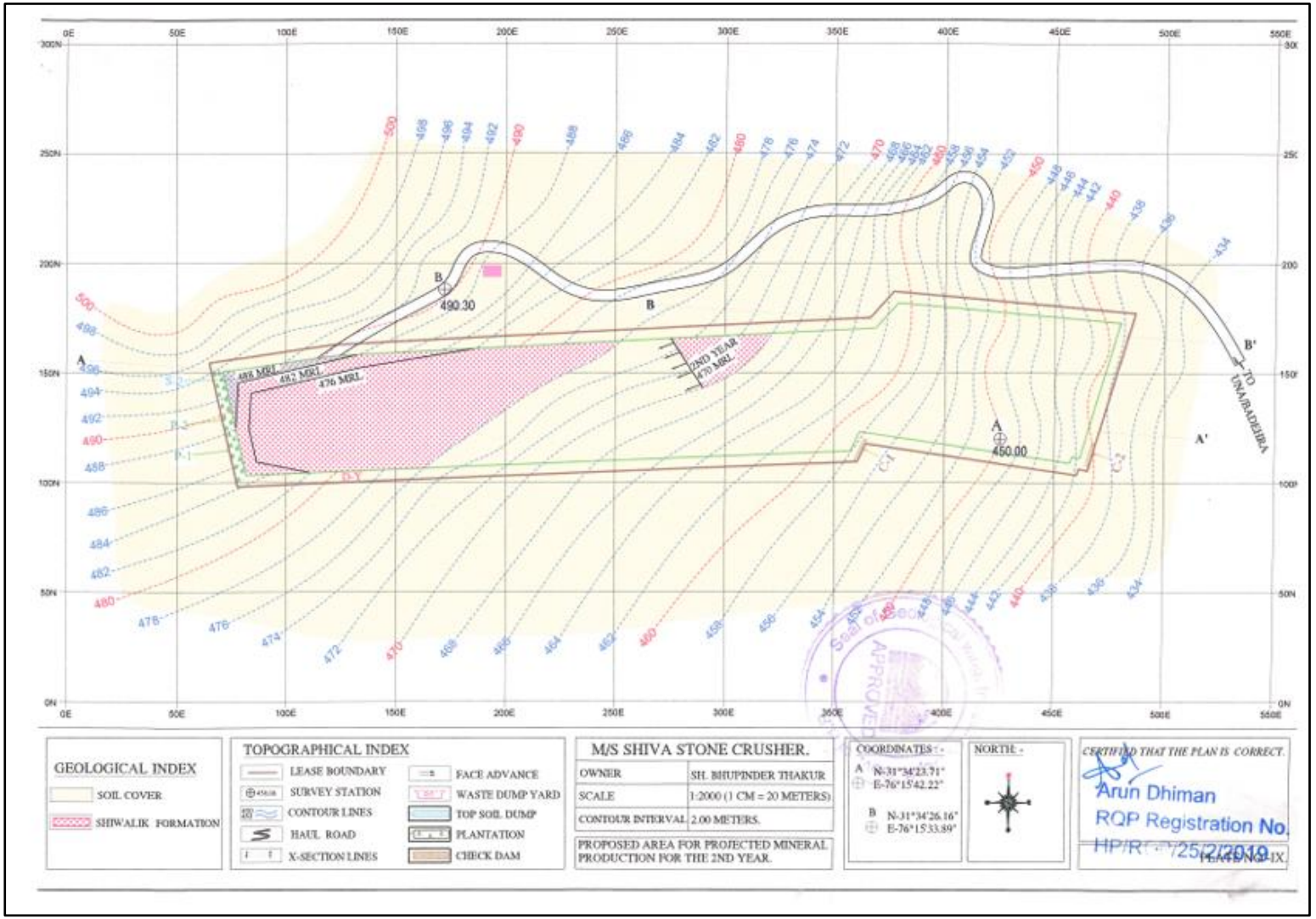


Figure - 2.5

Pit Plan for the 3rd Year

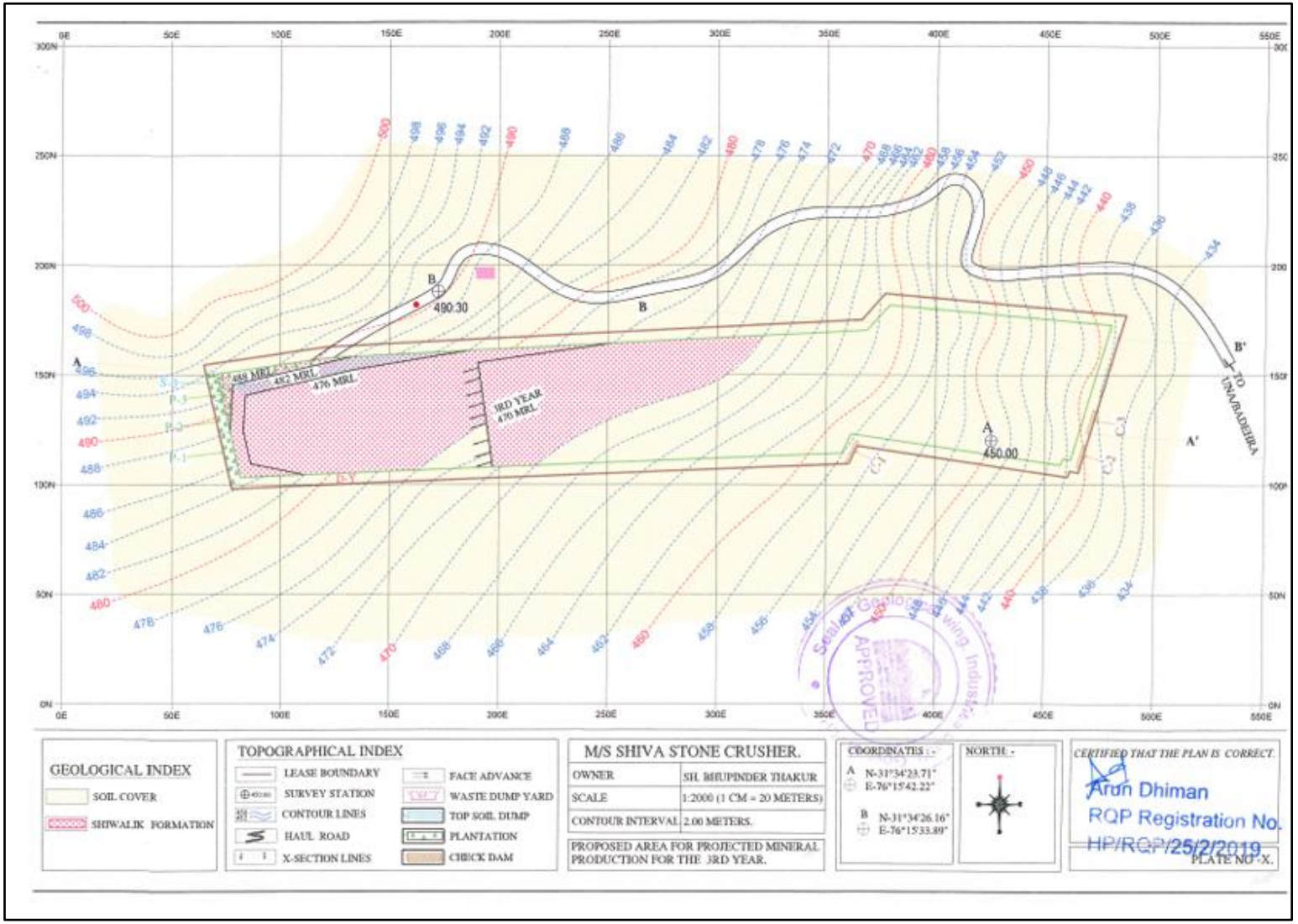


Figure 2.6

Pit Plan for the 4th Year

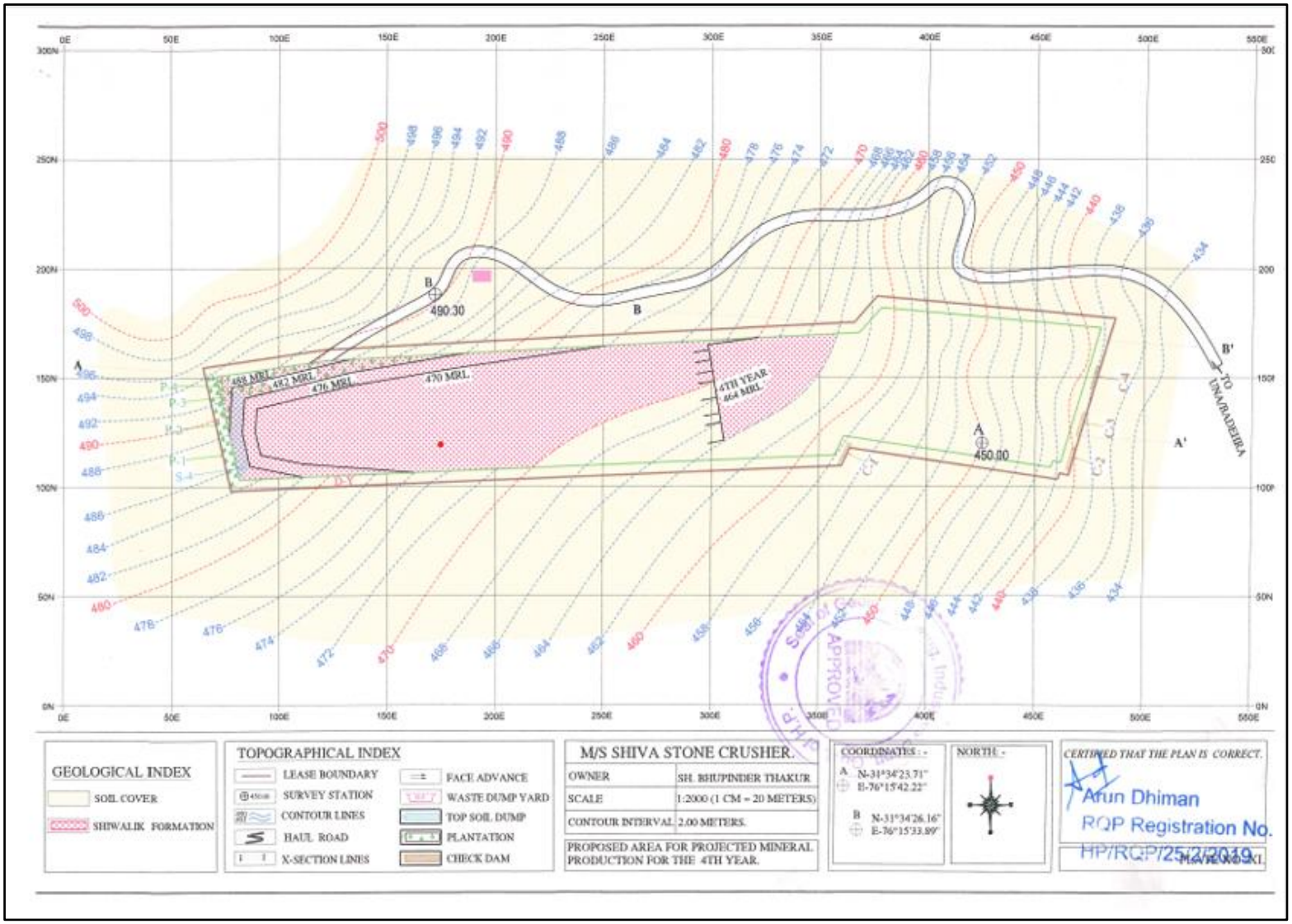


Figure- 2.7

Pit Plan for the 5th Year

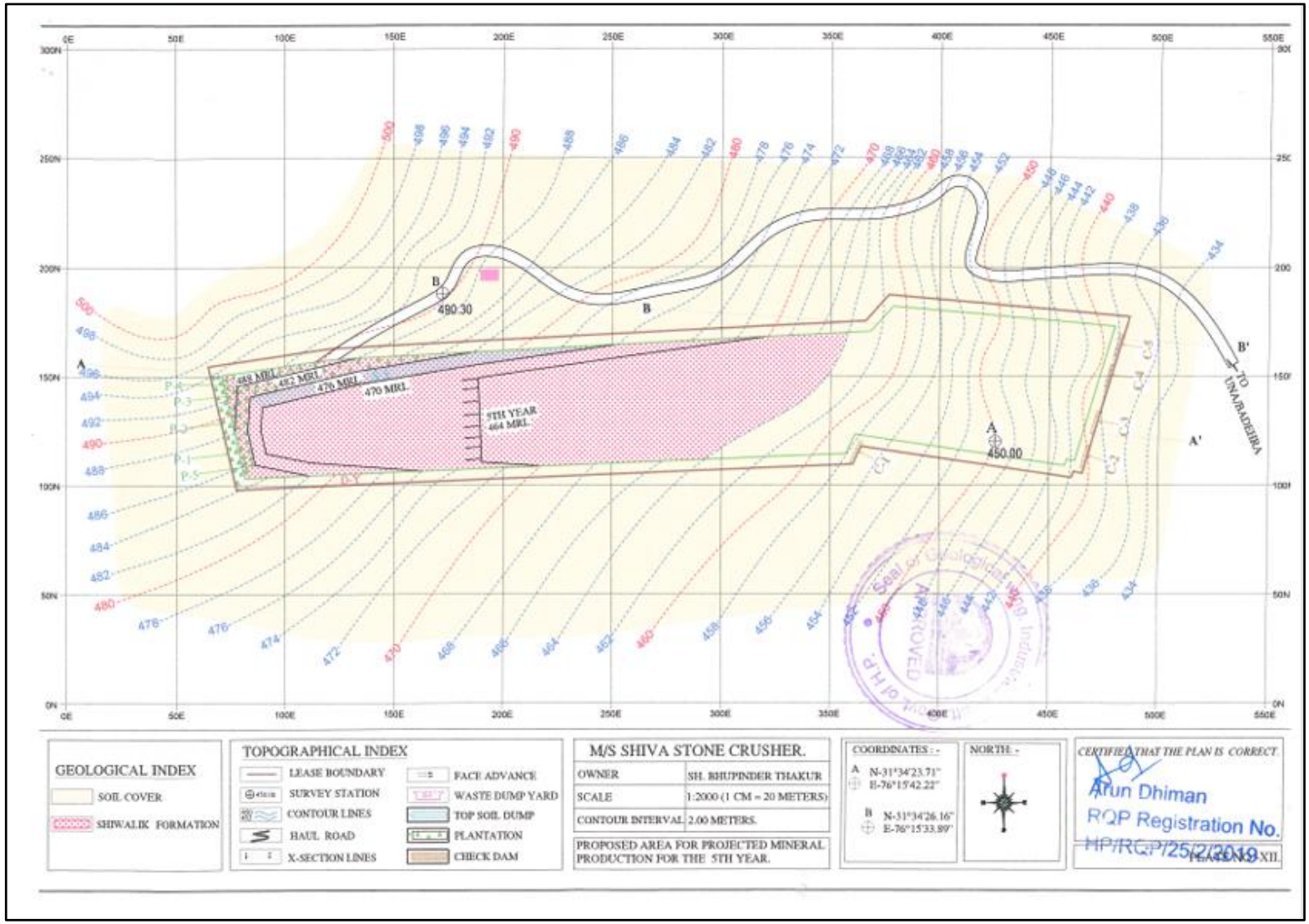


Figure 2.8

Post Reclamation Plan

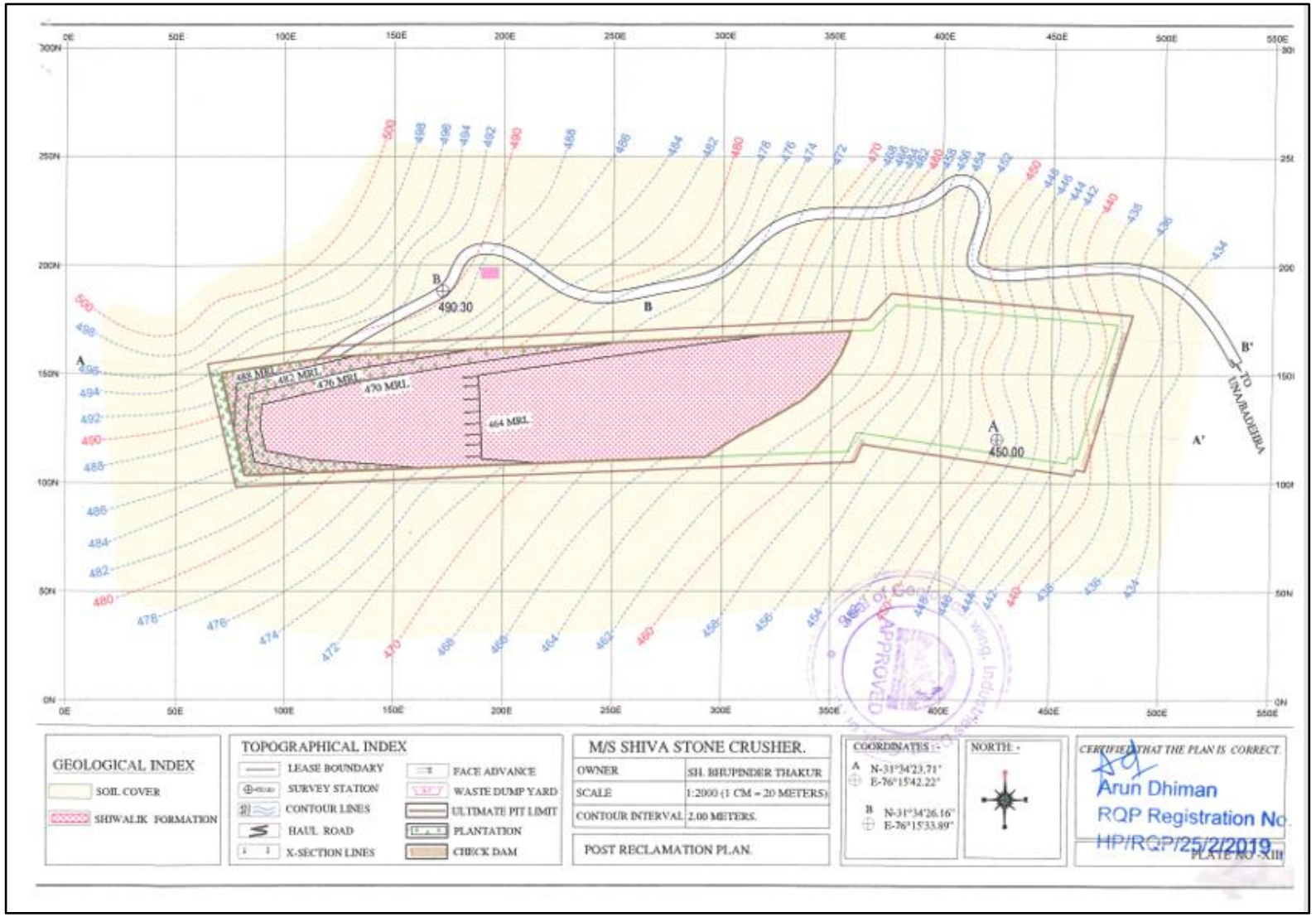


Figure-2.9

Ultimate Pit Plan

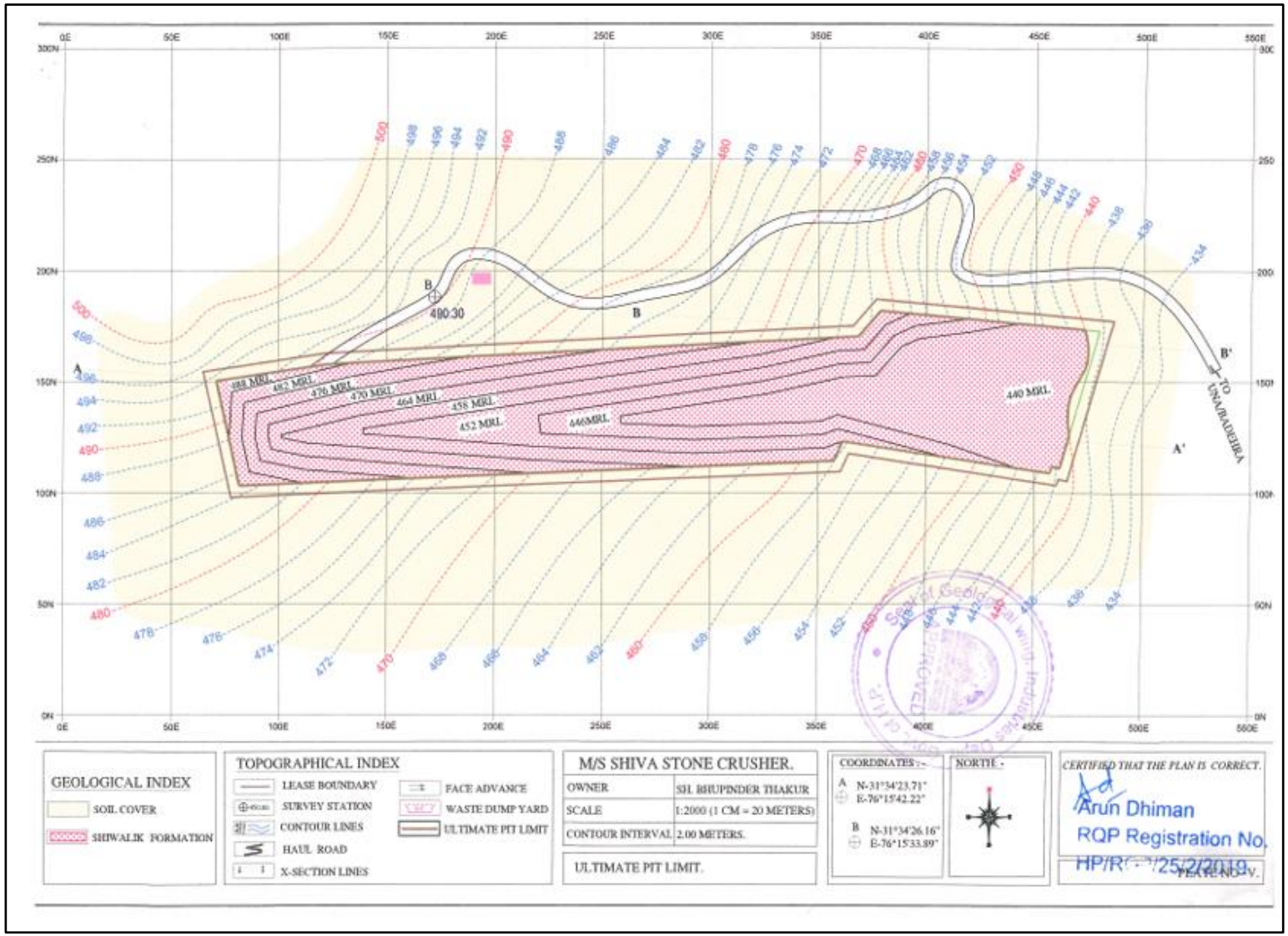


Figure- 2.10

Slice Plan

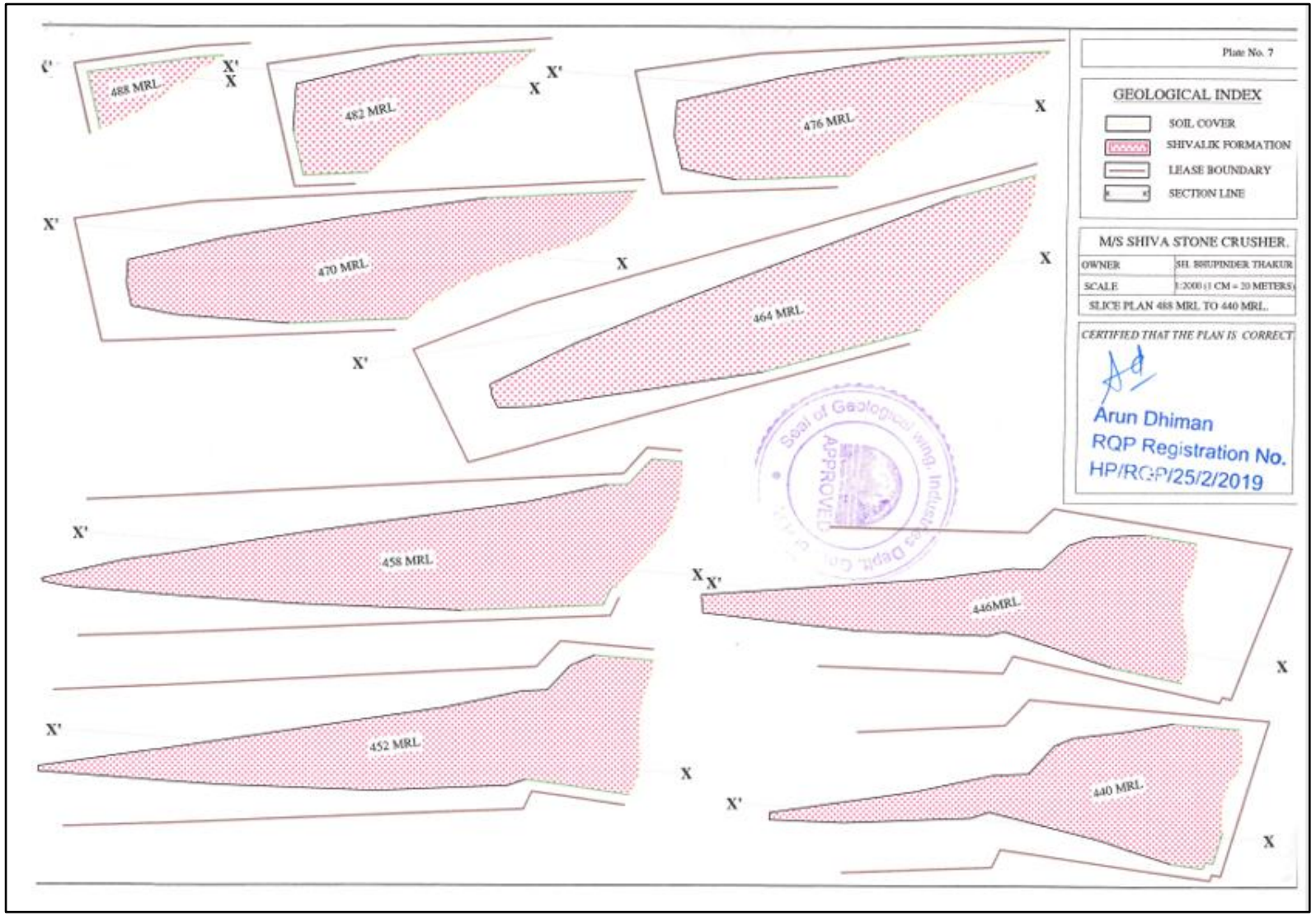
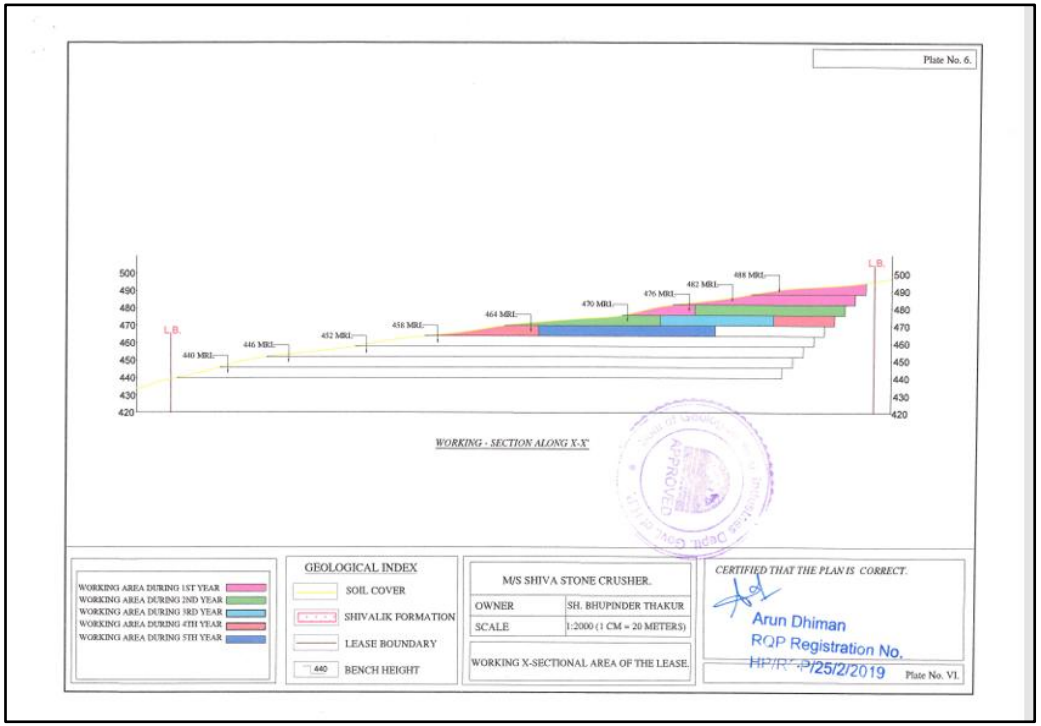


Figure- 2.11

Cross Section Map



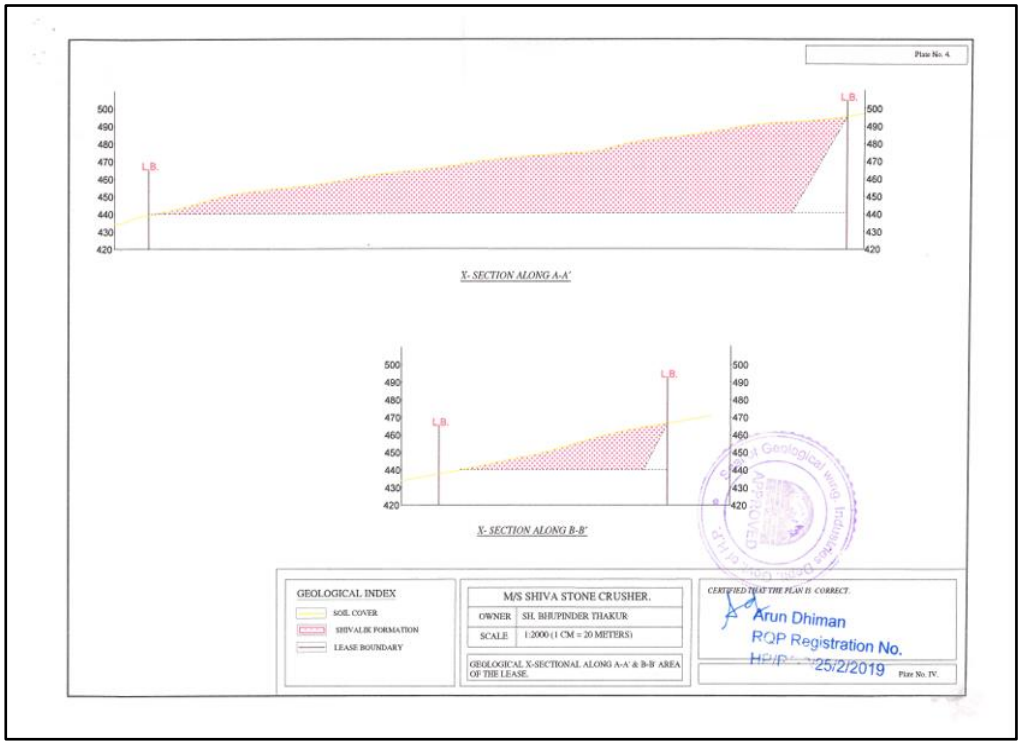


Figure- 2.12

Cross Section Map Across the Mining Area

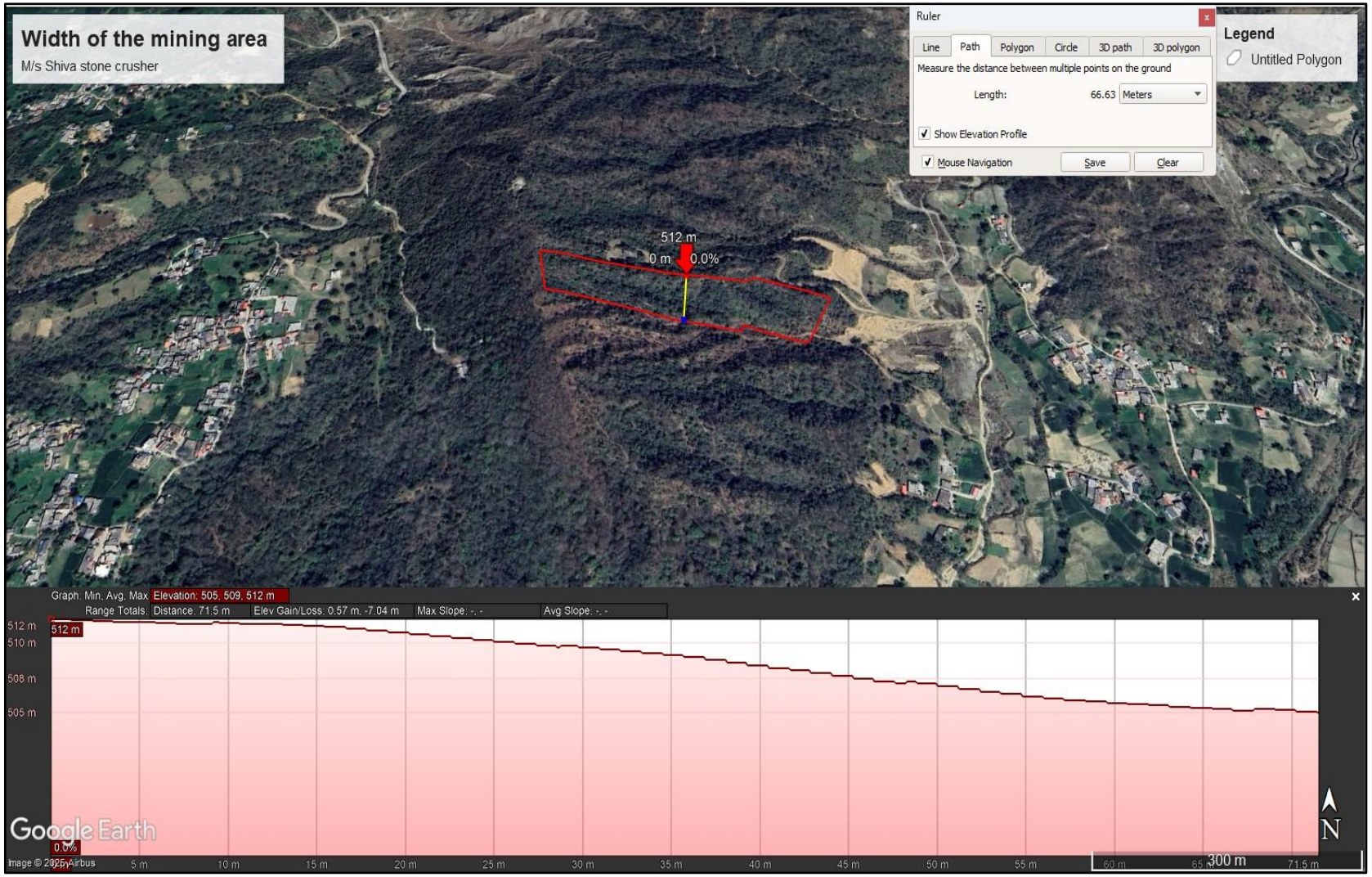
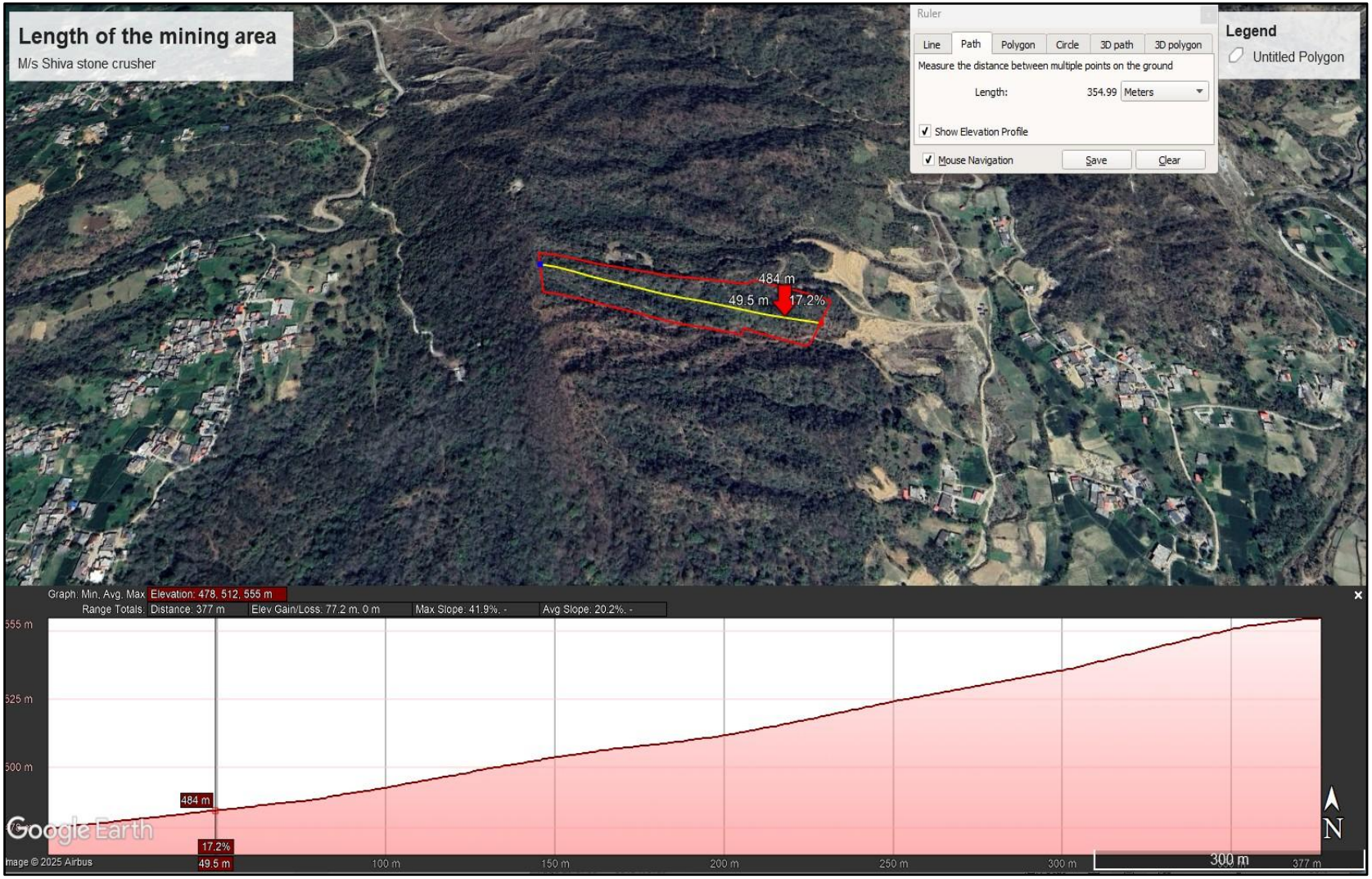


Figure -2.13

Cross section Map Along the Mining Area



CHAPTER-3.0

DESCRIPTION OF ENVIRONMEN

3.1 INTRODUCTION:

This chapter outlines the existing environmental conditions related to land, air, water, biological, and socio-economic aspects. The proposed mining activity is limited in both area and scale; therefore, its zone of influence is expected to be confined primarily to the surrounding fields adjacent to the leased area.

To assess the potential environmental impacts, monitoring of key environmental parameters has been carried out within the core zone (the lease area) and the buffer zone (surrounding area). This monitoring has been conducted in accordance with the Terms of Reference (ToR) and the guidelines for Environmental Impact Assessment (EIA) issued by the Ministry of Environment, Forest and Climate Change, Government of India. The baseline data serves as a critical input for informed decision-making related to project planning, design, implementation, and operation from an environmental perspective. ***The data was collected through both primary and secondary sources.*** Primary data collection was carried out via direct environmental monitoring conducted by **M/s Chandigarh Pollution Testing Laboratory, Mohali—a NABL-accredited and MoEF&CC-recognized laboratory (NABL Certificate No. TC-6728, valid up to 08.11.2028)**. Secondary data was obtained from credible published sources.

3.2 PHYSIOGRAPHY OF THE DISTRICT:

Una district lies in the south- western of Himachal Pradesh. It bounded by Kangra district in the north and north-east, Hamirpur district in the east, Bilaspur in the south-east and Punjab in the west and south. The district lies between 31°17′52” and 31°52′0” in north latitudes and 75°58′00” and 76°28′25” in east longitudes. The district covers an area of 1,550 sq.km. the Himalayan foothill zone is bounded by the plains of Punjab in the west and Solasinghi Dhar in the east. In the western part also there is hill range whose maximum height is about 600 meters. The ranges trend in a general NW-SE direction and the area between these forms a longitudinal valley of the Swan River. The altitudes of the area vary from 350 meters to 1,200 meters on the Salasinghi Dhar. Shiwalik range experience heavy rainfall. The hill ranges are covered by scanty vegetation comprising mostly shrubs. Soan or Swan River, a tributary of river Satluj, drains the major part (80%) of the Una district. Soan is an intermittent river and maintains base flow in the lower reaches. Soan river has about 80% catchment area in the Una district and divides the district into two parts. In general, the area is a part of the Siwalik range. The district can be divided into the following three district zones as per elevation:

1. *Above 900 m.*

2. *600-900 metres.*

3. *Less than 600 metres.*

3.3 PROJECT SITE:

The proposed mining site is located near the village Sanjhot. The site is approachable through Kaccha Road Dhamandri-Sanjhot diverting LHS from village Sanjhot. The site is at a distance of approximately 13.0 kms from the nearest major city Una.

This chapter presents a comprehensive description of the environmental status within a **10 km radius** of the proposed mining site. Key environmental and geographical features, including ecologically sensitive areas, are detailed in **Table 3.1**.

For spatial context and clarity:

- ***Features within 10 km radius are given in Table-3.1.***
- ***Toposheet Map showing 10 km radius is given in Figure 3.1.***
- ***Pillar coordinates of the Mining land area showing in Fig. 3.2.***
- ***500-meter radius map given in Figure 3.3.***

TABLE 3.1

SALIENT FEATURES OF THE PROJECT

S. No.	Particulars	Details		
1.	**Location**			
a)	**Mauza/ Mohal**	Sanjhot		
b)	**Tehsil**	Una		
c)	**District**	Una		
d)	**State**	Himachal Pradesh		
e)	**Lease Area Co-ordinates**	**Pillar No.**	**Latitude**	**Longitude**
		P1	31°34'25.61"N	76°15'30.30"E
		P2	31°34'23.67"N	76°15'30.71"E
		P3	31°34'23.75"N	76°15'40.10"E
		P4	31°34'26.05"N	76°15'40.72"E
		P5	31°34'23.23"N	76°15'43.24 "E
		P6	31°34'25.55"N	76°15'44.48"E
2.	**Elevation**	Highest 494 meters above MSL. Lowest 438 meters above MSL.		
3.	**Climatic Conditions**			
i.	**Temperature Min/Max**		**Winter C°**	**Summer C°** / **Rainy C°**
		Min	-0.1	9.0 / 18.0
		Max.	36.0	43.4 / 39.2
ii.	**Rainfall: Average,**	Approx. 1090.0 mm		
iii.	**Relative Humidity, % (average annually)**	Summer 39 %, Monsoon 85 %.		
iv.	**Wind speed**	1.7 Km/hr. (approx.)		
4.	**Nearest highway/road**	NH-503 (Una-Amb Road) at (aerial distance) of 5- 6 kms towards West direction.		
5.	**Nearest railhead/Railway station**	Panoh at a (aerial distance) of 6.3 kms. Towards south-west direction.		
6.	**Nearest airport**	Chandigarh airport (112 Km)		
7.	**Nearest Major City**	Una (13.0 Km)		
8.	**Nearest Major Settlement.**	Una (13.0 km)		

People & Culture		
9.	**Major Religions**	Hindus, Sikhs and a number of Muslim also.
10.	**Language Spoken**	Punjabi, Hindi and Pahari
11.	**Culture**	Traditional and Pahari
Features within 10 kms		
i.	**Archaeological important places.**	Nil
ii.	**Wild life/ Elephant & Tiger Reserves & sanctuaries**	Nil *(Nangal Wildlife Sanctuary lies at a distance of 13.40 Kms from the project site)*
iii.	**Industries**	Around 2-4 industries
iv.	**State boundary**	Punjab
v.	**Mining type**	Private land - Hill Slope

Figure- 3.1

Location Map on 10 Km Toposheet

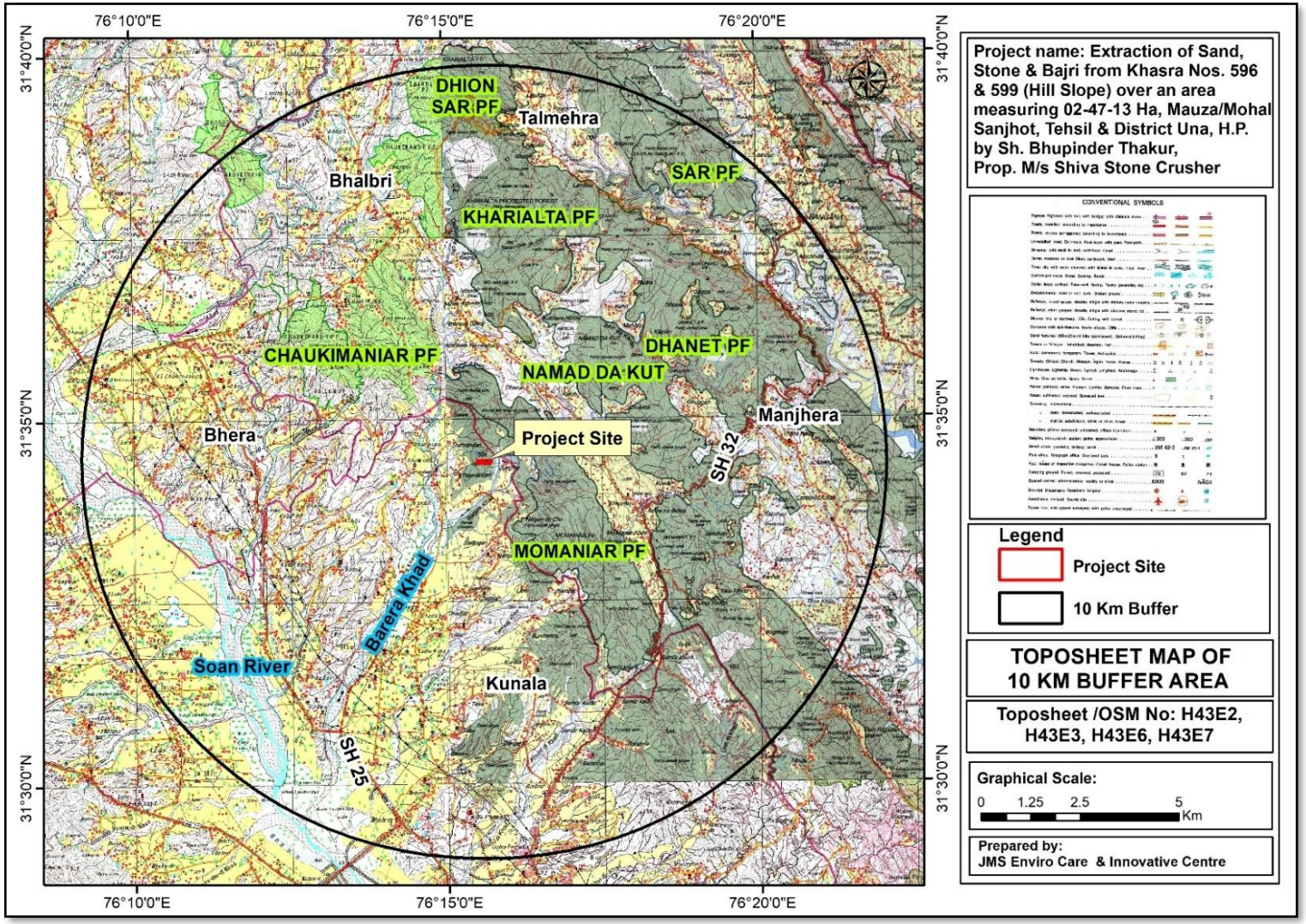


Figure- 3.2

Pillar Co-ordinates map

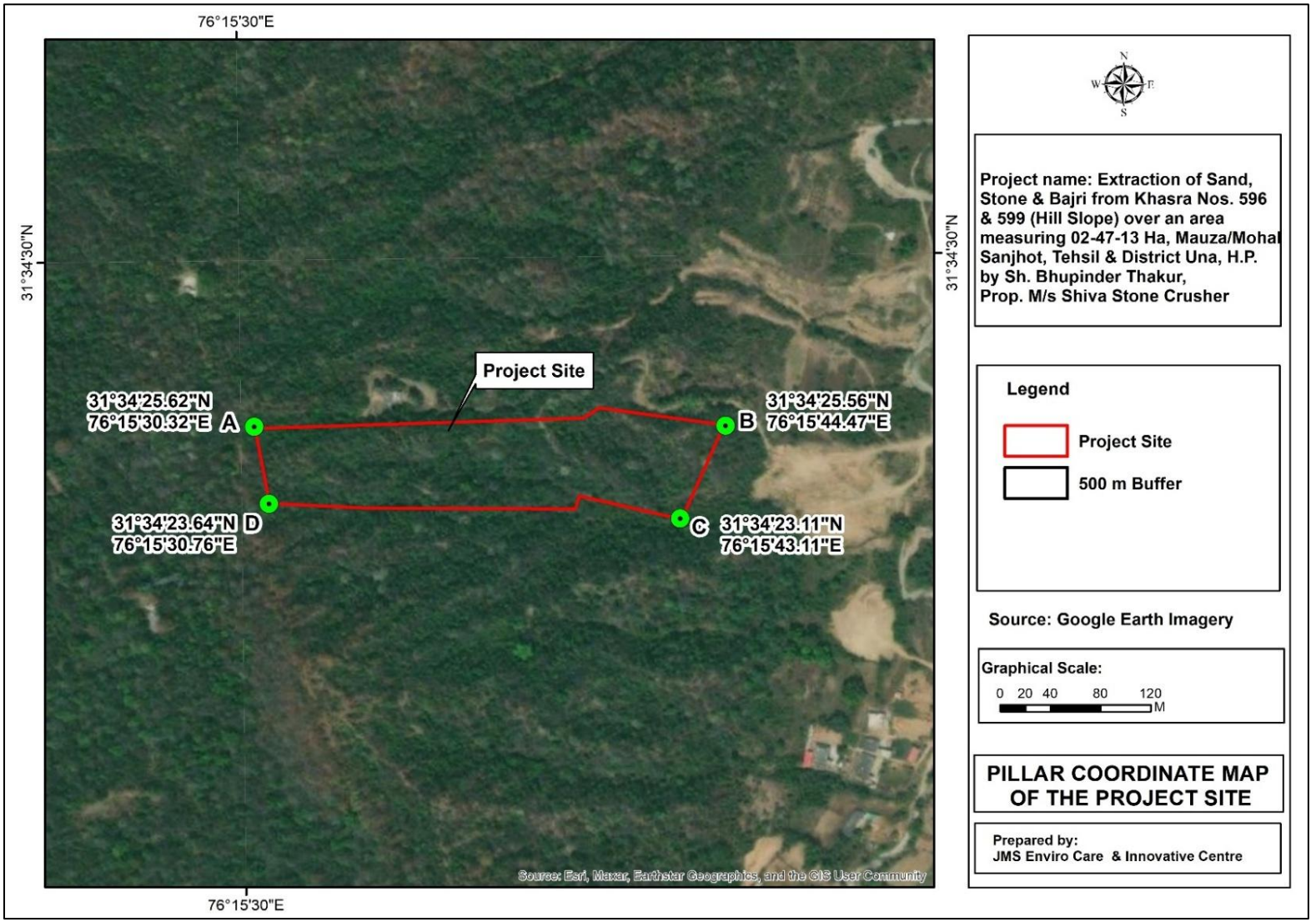
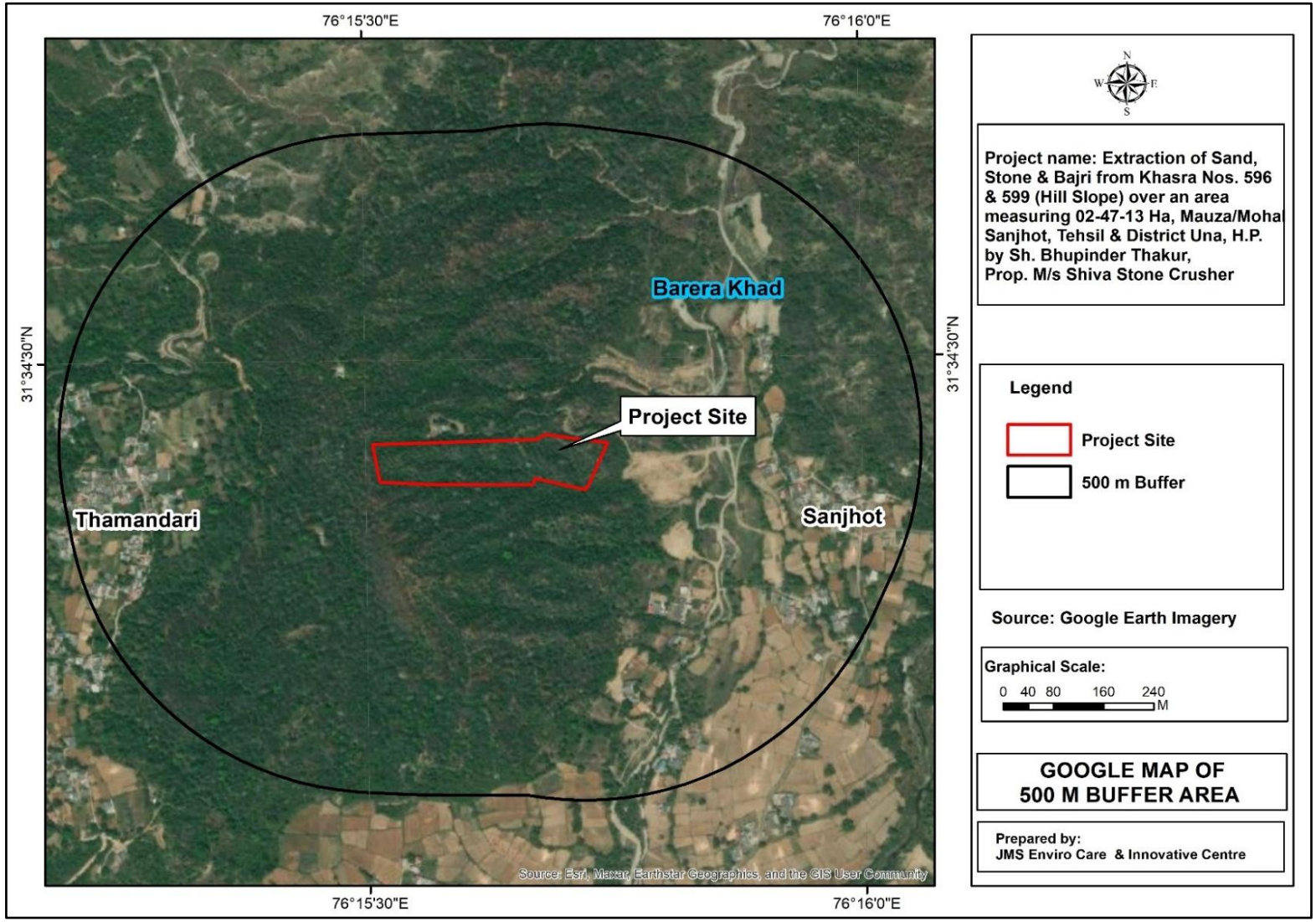


Figure- 3.3

500m Radius Map



3.4 STUDY PERIOD:

The environmental monitoring for the EIA study, for the project has been conducted for the summer season. Initially, a reconnaissance survey of the study area was carried out and then field monitoring for measuring meteorological parameters, ambient air quality, water quality, soil quality and noise levels was carried out following JMS/QMS/SOP/06/02 – JMS/QMS/SOP/08/02 as per the QMS of the organization from the period **15th March to 15th June, 2025**. In addition, certain aspects like land area, socio-economic status, past meteorological conditions, etc., have been analyzed based on secondary information available from sources like district census reports, district gazetteers, Indian meteorological department, etc. The baseline status of various environmental components is described in the succeeding sections.

3.4.1 Components of study:

This chapter contains information on existing environmental scenario for the following parameters:

1. *Land Environment*
2. *Meteorology*
3. *Air Environment*
4. *Noise Environment*
5. *Water Environment*
6. *Soil Environment*
7. *Biological Environment*
8. *Socio-economic Environment*

3.4.2 Methodology:

For the present study, all the sampling locations are marked with the help of Google maps and site visits. The land use/ land cover map has been generated on 1:50,000 scale using Satellite imagery and ground truth information. The baseline environmental quality has been assessed for the period **15th March to 15th June, 2025.** Samples of Air, Water, Noise and Soil from the site and nearby areas has been collected and analyzed for the study of existing condition. Primary and secondary data collection has been done by the Ecology and Biodiversity team for the study of flora and fauna in the study area. The baseline data is generated through field study within the impact zone for various components of the environment viz. Air, Noise, Water, Land, Ecology and Socioeconomic. While generating the baseline status of physical and biological environment of the study area, the concept of impact zone has been considered. The impact zone selection is based on preliminary screening and modeling studies. The methodologies for various environmental facts are as follow:

I. Ambient Air Quality

The ambient air quality monitoring was done to assess the ambient air quality in one season. The guidelines for selections of ambient air monitoring stations given in IS – 5182 part 14, 2000 and 'Guidelines for Ambient Air Quality Monitoring' by CPCB were followed.

II. Water Quality

To assess the water quality of the proposed area, sampling was done as per the standard practice. Grab sampling was done for ground and surface water. Water samples were taken as per the standard methods (IS 10500: 2012 & APHA, 23rd Edition). Necessary precautions were taken for preservation of samples. The physical parameters viz. pH, temperature and conductivity were measured at site.

III. Ambient Noise Quality

At each station noise levels were monitored for day and night time once in a season.

IV. Soil Quality

For soil, augur method was used and samples were collected at 15-30 cm depth after removing the upper crust.

V. Land Use

The land use/ land cover map has been generated on 1:50,000 scale using Satellite imagery and ground truth information.

VI. Biological Environment

Primary and secondary data collection has been done by the Ecology and Biodiversity team for the study of flora and fauna in the core and Buffer Zone.

VII. Socio Economic Environment

For demography and socio-economics, block wise data has been collected and used for the assessment of impacts.

VIII. Micro-Meteorological Data

Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind speed and direction in the broad sense. Other factors such as variation in temperature, humidity, cloud cover, atmospheric stability etc. also play a direct role in dispersion and dilution of pollutants. Wind fluctuations over a wide range of time, accomplish dispersion and strongly influence other processes associated with them.

3.5 ENVIRONMENTAL BASELINE DATA COLLECTION:

Baseline data for the proposed plant was collected immediately before the monsoon season. Primary data has been collected by monitoring & surveying various environmental components/ parameters in the core zone during the study period, details of which are given here.

S. No.	Parameters	Description
1.	**Meteorology**	Meteorological parameters on hourly basis at project site. **Parameters: *Temperature, Relative humidity, Wind Speed & Wind Direction.***
2.	**Air**	Ambient air quality monitoring (24 hourly), twice a week. **Parameters are *PM_{10}, $PM_{2.5}$, SO_2, NO_2 & CO.*** **No. of Locations: 8 locations in core and buffer zone.**
3.	**Noise**	Noise level monitoring ***(Day & Night time)***, once in a season. **No. of Locations: 8 locations in core and buffer zone.**
4.	**Water**	Ground water & surface water sampling, once in a season. No. of Locations: 1 location in core zone and 8 locations in buffer zone (***for groundwater***), 1 location in buffer zone (***for surface water***). ***Tested for physical and chemical parameters.***
5.	**Soil**	Soil sampling, once in a season. **No. of Locations: 8 locations in core and buffer zone.**
6.	**Biological Factors**	Biodiversity survey, once in a season. **Location: Core and buffer zone.**
7.	**Socio-economic Environment**	Socio-economic survey, once in a season. **Location: Core and buffer zone.**

3.6 METEOROLOGY:

Meteorology plays a vital role in affecting the dispersion of pollutants. Since meteorological factors show wide fluctuations with time, meaningful interpretations can be drawn only from long term reliable data. The source of such data is the Indian meteorological Department (IMD), which maintains a network of meteorological stations at several important locations. The nearest station of the study is Una.

3.6.1 CLIMATE:

The climate of the district is sub- tropical in the valley and tends to be temperate in the hilltops. There are four major seasons: The Summer season commences from Nov to Feb & ends in March; summer season extends from March to June followed by the monsoon period extending from July to September. Maximum precipitation occurs during the months from July to September. In Summer season precipitation as snowfall also occurs in the higher reaches up to 1000m elevation and as rainfall in low hills and valleys of the district. The hottest months are May and June when temperature usually hover around 37-.38°C and sometimes for few days jumping to above 40°C, the nights are comparatively cooler. The climate of Una District is shown in table 3.2.

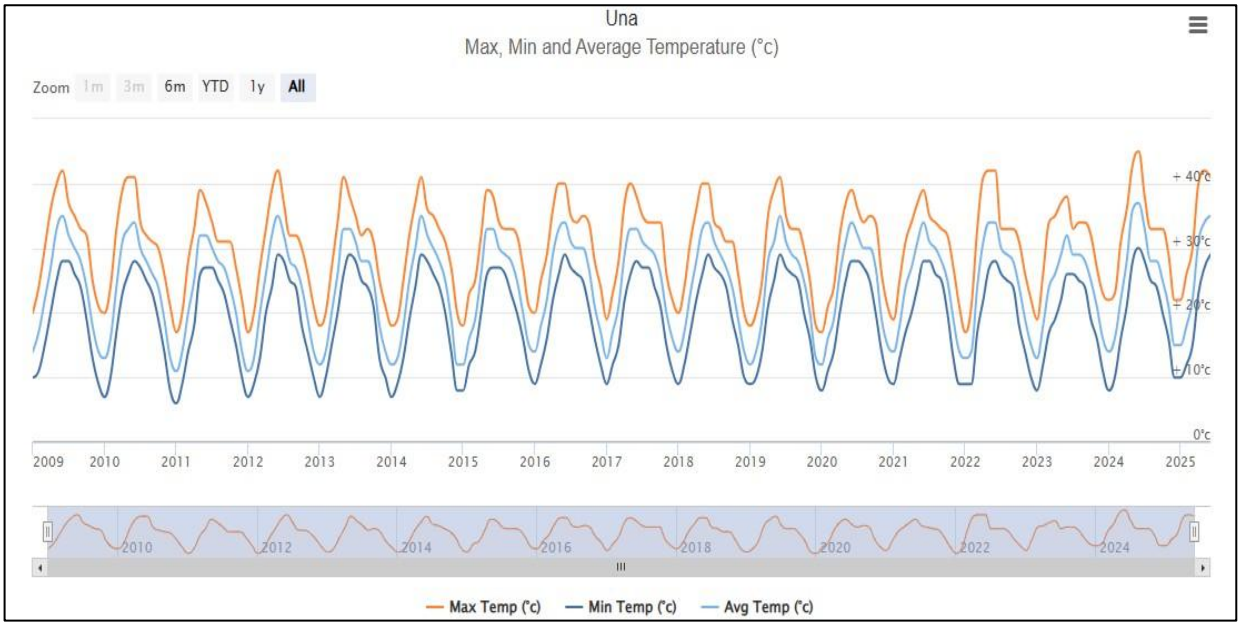
Table 3.2: Climate of Una District, Himachal Pradesh

Climate	Winter	Summer	Rainy
Period	Oct-Mid-March	Mid. March-June	**July-September**
Weather	**Cool**	**Hot**	**Humid**

3.6.2 Temperature:

The temperature of the district varies from the Dun valley registering as low as 2.4^0 C as minimum in winter months of December / January and as high as 32.7^0 C in summer month of June.

Fig 3.4 Average Temperature data (°C)

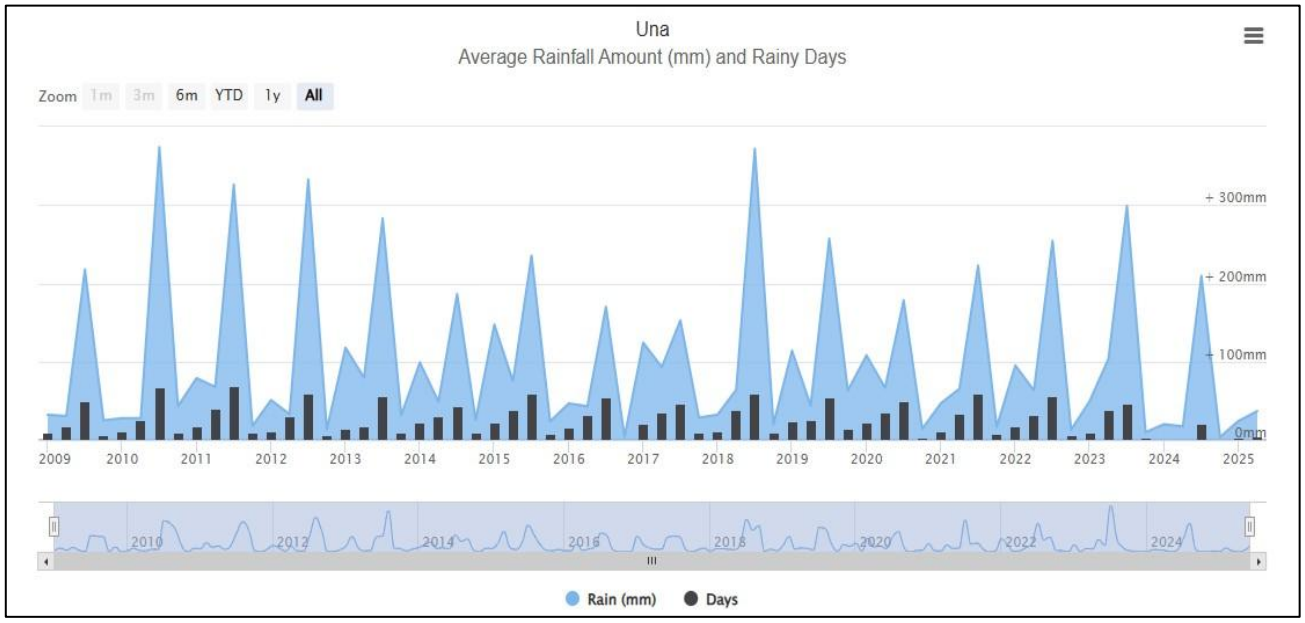


(Source: https://www.worldweatheronline.com/en-in/una-weather-averages/himachal-pradesh/in.aspx)

3.6.3 Rainfall:

The rainfall in the zone is caused by the Southwest monsoon. It starts in the month of July and extends up-to the end of September. During this period the monsoon rain-fall contributes about 70 to 80% of the total annual rainfall. The average annual rainfall is in the range of 1010mm. The annual numbers of rainy days on an average are about 62 in a year, out of which about 30 falls in the monsoon period of July to September. Annual weather averages in given in Table 3.1.

Fig. 3.5 Average Rainfall data (mm)



(Source: https://www.worldweatheronline.com/en-in/una-weather-averages/himachal-pradesh/in.aspx)

3.6.4 Humidity:

In summer months of April, May and June, which is the driest part of the year, the afternoon humidity comes down to around 19 % to 22 % while the relative humidity during monsoon months goes up to 55 % to 98 %.

3.6.5 Cloudiness:

During monsoon season skies are over cast with moderate to heavy clouds. During rest of the year, the sky is mostly clear. It is lightly clouded occasionally during winter season.

3.6.6 MICRO METEOROLOGY AT SITE:

Meteorological station was set-up at site to record surface meteorological parameter during the study period. Summary of the micro-meteorology at site is given in table 3.3 below:

Table 3.3: Climate of Una District, Himachal Pradesh

Month (2025)	Temperature (°C)		Relative Humidity (%)		Pressure (mbar)	
	Max.	Min.	Max.	Min.	Max.	Min.
March	35	10	100	20	1019	1004
April	42	15	90	9	1014	998
May	41	20	100	19	1011	991
June	43	21	100	993	1009	993

(Source- https://www.timeanddate.com/weather/india/Una/historic?month=3&year=2025)

3.6.7 Winds:

The Wind direction in the area is mostly from North-West to South-East. During January to May the winds are quite strong while July to October is calm months. The general trends of various meteorological data from meteorological observatory are used to draw Wind Rose Diagram. The diagram is given in figure 3.4.

Wind Rose Pattern:

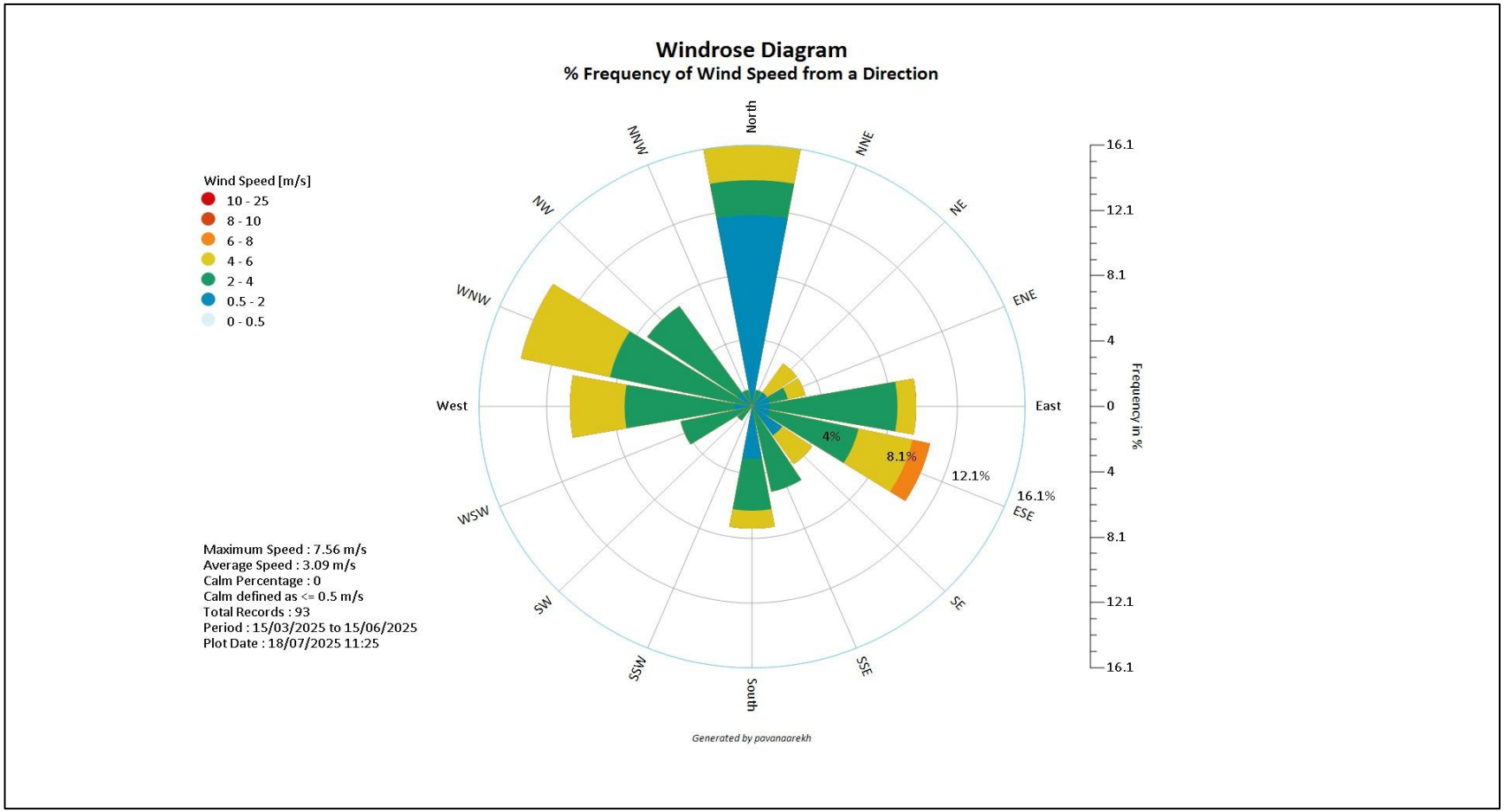
- A wind rose diagram is a graphical tool used to visualize the distribution and frequency of wind directions at a specific location over a given period of time. This diagram consists of a circular plot divided into segments that represent different wind directions (e.g., north, south, east, west) around the compass.
- The length of each segment corresponds to
- the proportion of time the wind blows from that direction, while color shading or concentric circles may indicate wind speed ranges.
- Wind speed and Wind direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the study area. Based on the collected meteorological data, relative percentage frequencies of different wind directions are calculated and plotted as wind rose for twenty-four hourly durations.

Table: 3.4 Summary of site-specific wind pattern

Season	Post-monsoon period
First Predominant Wind Direction	N & WNW
Avg. Wind Speed (m/s)	3.09 m/s
Maximum Speed	7.56m/s
Calm Percentage	0
Period	15.03.2025 to 15.06.2025

(Source- https://www.timeanddate.com/weather/india/Una/historic?month=3&year=2025)

Figure-3.6
Wind Rose Diagram



**(Source- Software Pawanarekh)*

3.7 AMBIENT AIR QUALITY:

The ambient air quality monitoring was done to assess the ambient air quality. The guidelines for selections of ambient air monitoring stations given in IS – 5182 part 14, 2000 and CPCB guidelines were followed. These guidelines state that, "when the objectives of air sampling are to identify the contribution from specific sources of pollution, the sampling locations should be located in upwind and the downwind direction of such sources".

The location of air quality monitoring stations has been selected considering:

1. The site should be representative of the area selected;
2. Certain physical requirements should be satisfied at the site.

Methodology:

The prime objective of the baseline study with respect to ambient air quality is to establish the present air quality and its conformity to National Ambient Air Quality Standards. This data has been further used during impact assessment to predict the final air quality. This section describes the sampling locations, frequency of sampling and methodology adopted for monitoring ambient air quality.

To quantify the impact of the project on the ambient air quality, it is necessary at first to evaluate existing ambient air quality of the area. The existing ambient air quality, in terms of Particulate Matter- 10(PM10), Particulate Matter-2.5 (PM2.5), Sulphur-dioxide (SO2), Oxides of Nitrogen (NO2), and Carbon Monoxide (CO), has been measured through a planned field monitoring.

Sampling Stations:

To select the air sampling locations, meteorological data with respect to temperature, relative humidity, wind speed and direction plays a vital role. Predominant wind direction plays an important role in determining location of monitoring stations. The monitoring stations were located in areas that were downwind from the source. List of Air sampling stations are given in **Table 3.5** and Location of Air Sampling Stations are given in **Figure 3.7.**

Table 3.5

Ambient Air Monitoring Stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction	Upwind/ Downwind	Co-ordinates
1.	AAQ-1	Project site	0		31°34'24.54"N 76°15'38.76"E
2.	AAQ-2	Harsa Jandora	2.79 km N	Upwind	31°35'57.19"N 76°15'31.65"E
3.	AAQ-3	Nagar Chauki	1.71 km WNW	Crosswind	31°34'51.19"N 76°14'40.98"E
4.	AAQ-4	Talap	1.92 km W	Crosswind	31°34'50.58"N 76°13'56.39"E
5.	AAQ-5	Kaint	0.64 km ESE	Crosswind	31°34'20.41"N 76°16'0.96"E
6.	AAQ-6	Khurwain	3.99 Km SE	Crosswind	31°33'47.72"N 76°18'1.81"E
7.	AAQ-7	Ambhera Dhiraj	1.53 Km NW	Crosswind	31°35'4.46"N 76°15'1.79"E
8.	AAQ-8	Dhamandri	1.99 Km S	Downwind	31°33'17.23"N 76°15'45.96"E

- **Monitoring Schedule:**

Ambient air quality monitoring was carried out twice a week with a frequency of 24 hours for 12 weeks.

- **Methods of sampling and Analysis:**

Sampling was done as per guidelines laid down in IS – 5182 part 14, 2000 and respective IS- methods for the analysis of various air pollutants. The instruments/ equipment's used for sampling are calibrated by NABL approved instructions. In addition, collated sampling was undertaken one each for upwind, downwind & crosswind direction to project site, the result of which reveals that the air quality is quite satisfactory both in terms of NAAQ standards and the overall AQI for that period and station.

Fine particulate Sampler APM-550 & RDS APM-460 were used for monitoring of Particulate Matter (PM2.5 and PM10); gaseous pollutants like SO_2, and NO_2 were collected by Gaseous attachment. The analysis was done as per methods mentioned below:

Table 3.6

Method of sampling and analysis

S. No.	Parameters and units of measurement	Analysis Method
1.	PM_{10} µg/m^3	IS:5182:P-23:2006(RA-2022)
2.	$PM_{2.5}$ µg/m^3	IS:5182:(P-24):2019
3.	SO_2 µg/m^3	IS:5182:(P-2/sec1):2023
4.	NOx µg/m^3	IS:5182:P-6:2006(RA-2022)
5.	CO mg/m^3	IS:5182:P-10:1999:(RA-2019)

- **Sample Transportation and Sample Preservation:**

Proper preservation of samples was done after sampling. The Gaseous samples were preserved in an ice box (below 4°C) and transported to the laboratory for analysis. The filter papers were collected using forceps and stored in polythene bags and stored in dry containers during transportation.

- **Results**

The results given in **Table-3.7** when compared with National Ambient Air Quality Standards (NAAQS) for "Industrial, Residential, Rural and Other Areas" show that the individuals values of ambient air quality parameters are well within the stipulated limit.

Figure- 3.7

Locations of Air Monitoring Stations

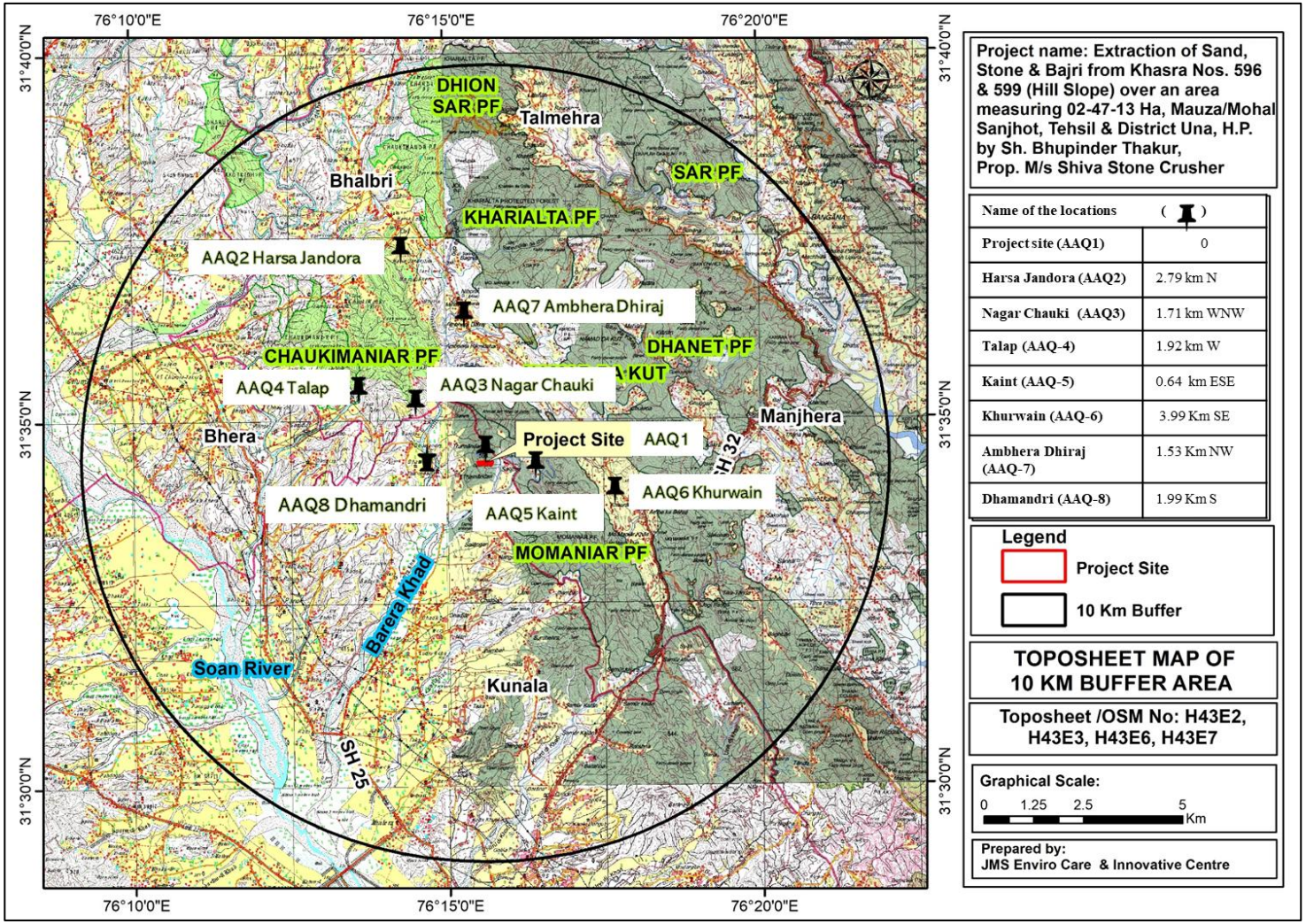


Table- 3.7

Ambient Air Quality Monitoring Results (Average Value)

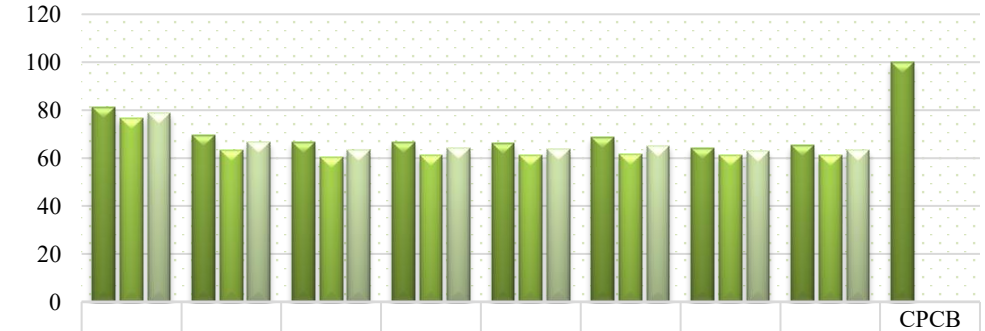
Locations	PM10 µg/m^3			PM2.5 µg/m^3			SO2 µg/m^3			NO2 µg/m^3			CO mg/m^3			O3 µg/m^3		
	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.
Project site	81.2	76.5	78.9	43.3	37.9	40.6	6.6	6.0	6.3	14.2	12.0	13.1	BDL			20.4	20.1	20.3
Harsa Jandora	69.6	63.3	66.5	38.8	33.3	36.1	6.6	6.1	6.4	15.6	12.6	14.1	BDL			20.5	20.1	20.3
Nagar Chauki	66.6	60.2	63.4	42.9	31.7	37.3	6.6	6.1	6.4	16.6	13.0	14.8	BDL			20.4	20.0	20.2
Talap	66.6	61.3	64.0	39.0	31.3	35.2	6.6	6.1	6.4	13.8	12.1	13.0	BDL			20.4	20.0	20.2
Kaint	66.2	61.2	63.7	38.3	31.3	34.8	6.6	6.0	6.3	15.5	12.1	13.8	BDL			20.8	20.2	20.4
Khurwain	68.6	61.5	65.1	36.3	31.3	33.8	6.6	6.0	6.3	13.8	12.2	13.0	BDL			20.4	20.0	20.3
Ambhera Dhiraj	64.3	61.2	62.8	40.8	31.3	36.1	6.6	6.1	6.4	16.5	12.2	14.4	BDL			20.5	20.1	20.3
Dhamandri	65.2	61.2	63.2	36.7	31.3	34.0	6.8	6.0	6.40	14.3	10.2	12.3	BDL			20.4	20.1	20.3
P98	79.1			42.1			6.72			15.96			BDL DL= 0.5			20.72		
CPCB Standards	100			60			80			80			4			100		

INTERPRETATION:

1. Respirable Suspended Particulate Matter (PM10)

The data reveals that PM_{10} concentrations were lowest at Nagar Chauki (60.2 µg/m³), a residential village characterized by minimal industrial activity and limited vehicular traffic. In contrast, the highest PM_{10} concentration was observed at the Project Site (81.2 µg/m³), which is located in close proximity to four active mining operations. The elevated PM_{10} levels at the Project Site are primarily attributed to the cumulative impact of these nearby mining activities. The clustering of mines in the area contributes to increased movement of heavy-duty vehicles such as trucks and tippers, leading to substantial dust generation and vehicular emissions. These factors collectively result in significantly higher ambient concentrations of particulate matter in the region. The value of P98 was 79.1 µg/m^3.

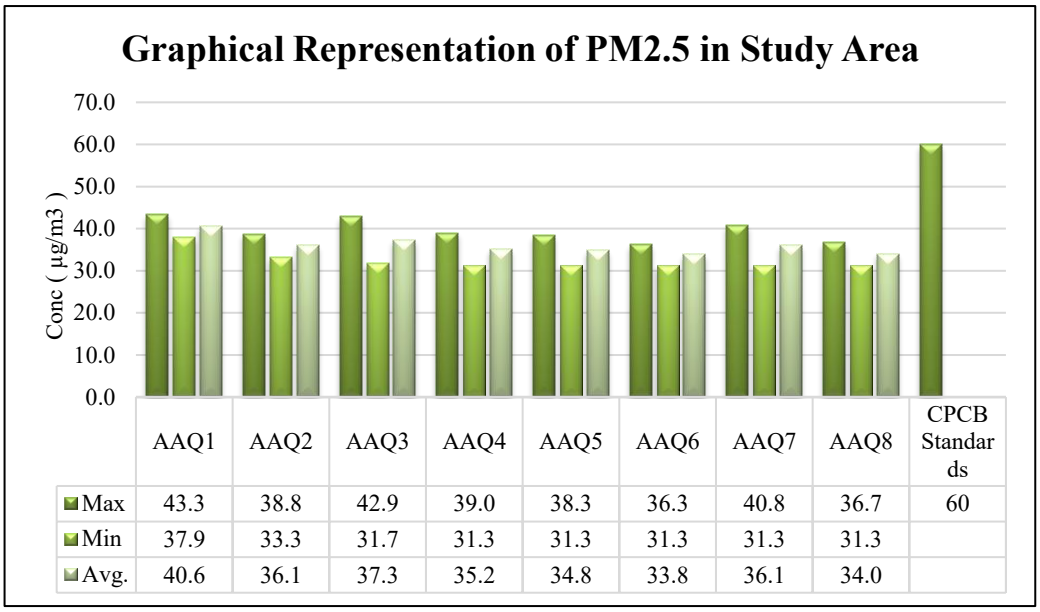
Graphical Representation of PM10 in Study Area



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	CPCB Standards
Max	81.2	69.6	66.6	66.6	66.2	68.6	64.3	65.2	100
Min	76.5	63.3	60.2	61.3	61.2	61.5	61.2	61.2	
Avg.	78.9	66.5	63.4	64.0	63.7	65.1	62.8	63.2	

2. Respirable Suspended Particulate Matter (PM2.5)

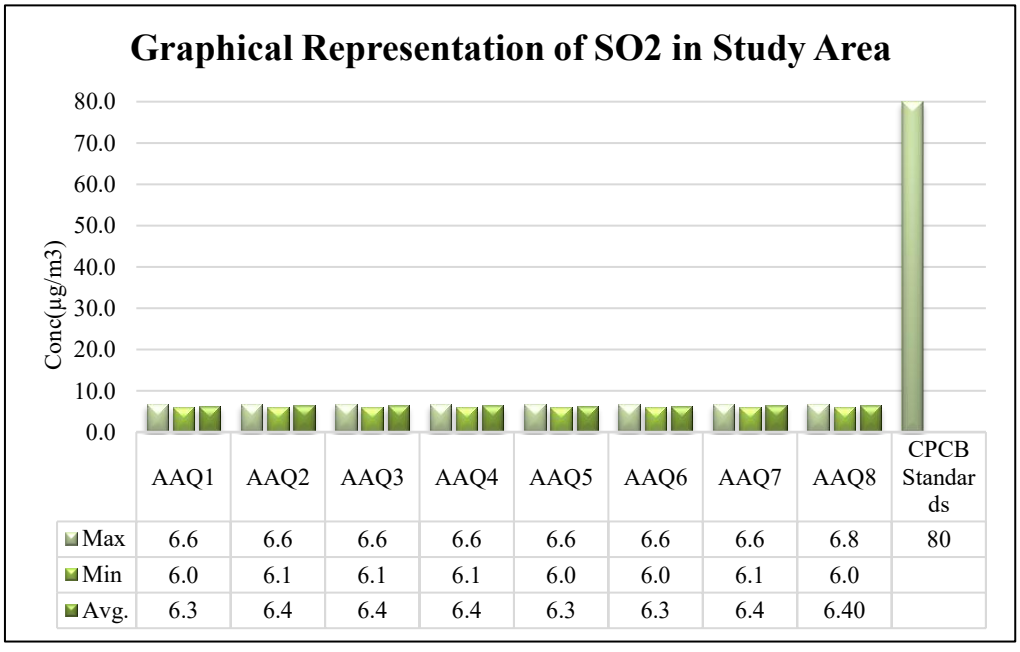
The highest $PM_{2.5}$ concentration (43.3 µg/m³) was recorded at the Project Site, primarily due to emissions from four adjacent mining operations involving drilling, material handling, and heavy vehicle movement. These activities contribute significantly to both fugitive dust and vehicular emissions, deteriorating local air quality. In contrast, the lowest concentration (31.3 µg/m³) was observed at Talap, Kaint, Khurwain, and Ambhera Dhiraj residential villages with minimal industrial and vehicular activity. Consequently, $PM_{2.5}$ levels in these areas remained comparatively low.



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	CPCB Standards
Max	43.3	38.8	42.9	39.0	38.3	36.3	40.8	36.7	60
Min	37.9	33.3	31.7	31.3	31.3	31.3	31.3	31.3	
Avg.	40.6	36.1	37.3	35.2	34.8	33.8	36.1	34.0	

3. Sulphur Dioxide (SO2)

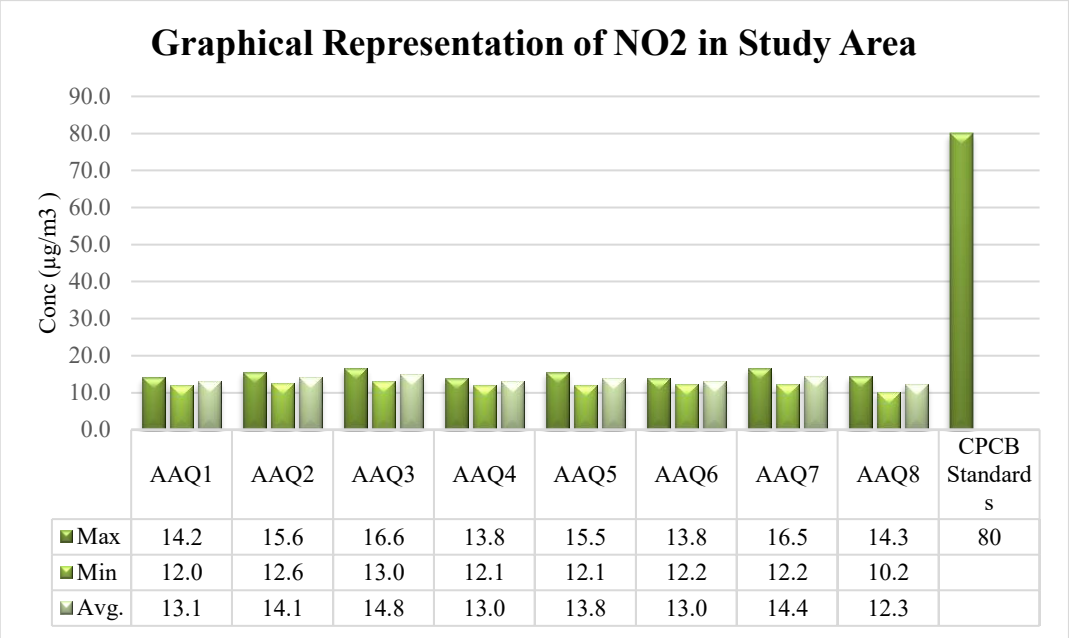
The maximum SO_2 concentration was consistently recorded at 6.6 µg/m³ across all locations. The minimum concentration of 6.0 µg/m³ was observed at four locations: the Project Site, Kaint, Khurwain, and Dhamandri. The slight variations in SO_2 levels can be attributed to localized differences in emission sources, such as domestic fuel use and vehicular activity, both of which are generally minimal across the monitored sites. The relatively lower concentration at the Project Site may be due to the absence of significant stationary combustion sources or fuel-burning activities in the area.



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	CPCB Standards
Max	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.8	80
Min	6.0	6.1	6.1	6.1	6.0	6.0	6.1	6.0	
Avg.	6.3	6.4	6.4	6.4	6.3	6.3	6.4	6.40	

4. Oxides of Nitrogen (NOx)

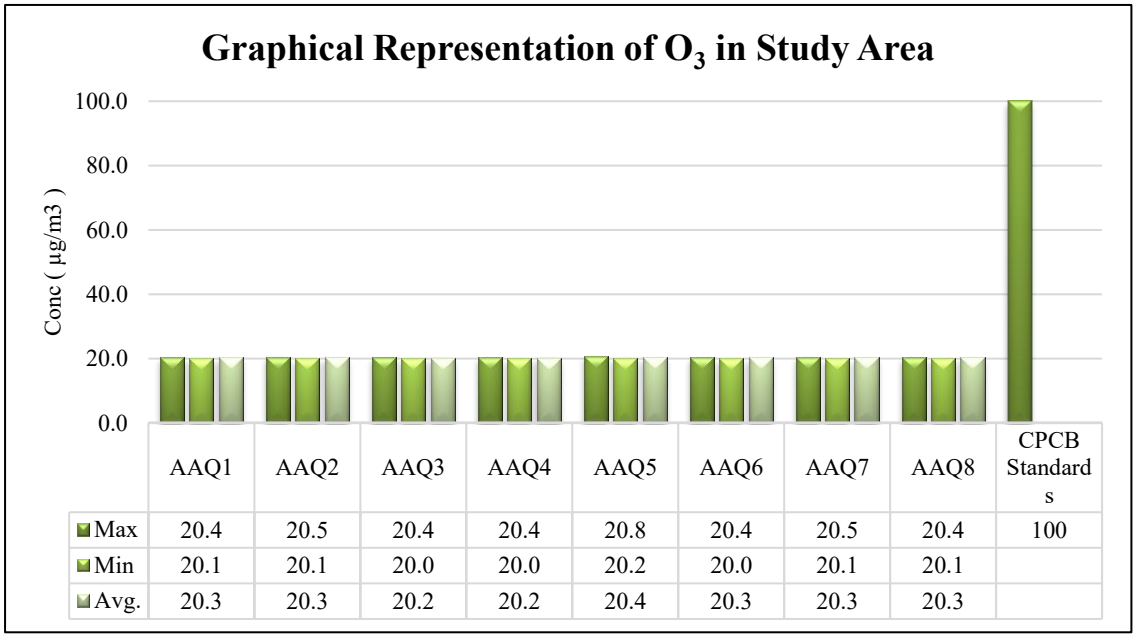
NO_x concentrations in the study area ranged from a minimum of 10.2 µg/m³ at Dhamandri—where the sample was collected within the village, away from the immediate vicinity of the crusher site—to a maximum of 16.6 µg/m³ at Nagar Chauki village. The elevated NO_x levels at Nagar Chauki may be attributed to localized sources, particularly higher vehicular traffic in the area.



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	CPCB Standards
Max	14.2	15.6	16.6	13.8	15.5	13.8	16.5	14.3	80
Min	12.0	12.6	13.0	12.1	12.1	12.2	12.2	10.2	
Avg.	13.1	14.1	14.8	13.0	13.8	13.0	14.4	12.3	

5. Ozone (O3)

Ozone concentrations ranged from 20.0 µg/m³ (at Nagar Chauki, Kaint, Talap, and Khurwain) to 20.8 µg/m³ (at Kaint), with slight variations attributed to local environmental and weather conditions.



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	CPCB Standards
Max	20.4	20.5	20.4	20.4	20.8	20.4	20.5	20.4	100
Min	20.1	20.1	20.0	20.0	20.2	20.0	20.1	20.1	
Avg.	20.3	20.3	20.2	20.2	20.4	20.3	20.3	20.3	

6. Carbon Monoxide (CO)

Carbon Monoxide (CO) levels were below detectable limits due to warmer, windier weather, reduced heating usage, and increased sunlight, all of which help disperse and break down CO more effectively during spring and early summer.

Conclusion:

On the whole the above results shows that the area enjoys calm surroundings, thick vegetation and least industrial activity and is thus environmentally quite clean.

3.8 LAND ENVIRONMENT:

The objective of assessing the land use details of the area is to know the existing land use pattern of the area and enable one to know about the land that can be used for the proposed development activities in the study area. It also enables to envisage the scenario emerging due to the increase in demand for land with increase in population and the impacts arising due to the interface with the various project activities.

a) Geographical location of the study area:

The study area comprises 10 km around the project site. The study area falls in H43E2, H43E3, H43E6, H43E7 Survey of India Topographic sheet.

b) Data Collection and Quality Assurance:

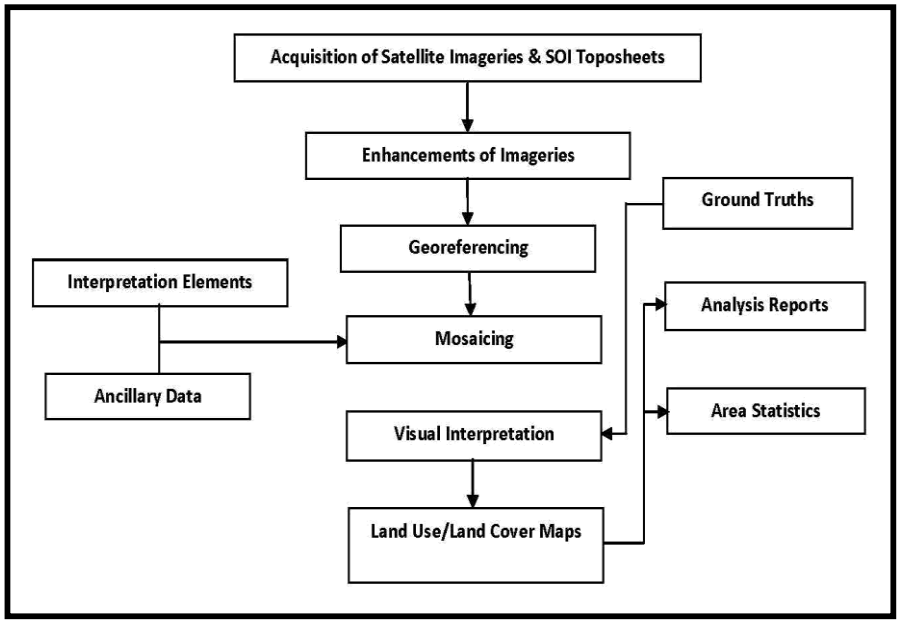
- **Satellite data**

The Indian Remote Sensing satellite data (Landsat 8 satellite Imagery) is being used for the analysis of Land Use and Land Cover around 10 KM of the study area and a 10 Km radius False Color Composite satellite map surrounding the project site is provided in figure 3.8 and figure 3.9 respectively. The land use details of the Surrounding villages (10 km buffer area) are shown in table 3.6.

- **Methodology:**

The land use/ land cover map is prepared by adopting the interpretation techniques of the image in conjunction with collateral data such as Survey of India topographical maps and census records. Image classification has been done by using visual interpretation techniques and digital classification using ERDAS image processing 10.0 software and ARC/GIS 10.0 software. The various activities for preparation of LULC include preprocessing, rectification, enhancements and classifying the satellite data for assessing the change in land use land cover due to proposed developmental activities. The imagery is interpreted and ground checked for corrections. The final map is prepared after field check. The different land use/land cover categories in the study area have been carried out based on the NRSC land use / land cover classification system.

Flowchart showing the methodology adopted for land use/land cover mapping is provided as Fig 3.8.



Land Use / Land Cover Study:

Landcover data highlights the area covered by forests, wetlands, impervious surfaces, agriculture, and other land and water types. Water types include wetlands or open water. Land use shows how people use the landscape for development, conservation or for other purposes. Therefore, its highlights the current scenario as well as predict the impact. LULC Map is prepared on the basis of primary data and secondary data.

Primary Data: The coordinates along land features of project area is collected with the help of GPS device for ground truthing. This data is primary data. On the basis of this data, landuse landcover analysis is appropriate.

Secondary Data: Satellite image (secondary data) is required to show the current land features of the project area and buffered area (10 km). Sentinel-2 Satellite image is used, which is collected from open source.

Landuse landcover classification is applied on the basis of various characteristics like color, texture, shape, association etc. Built-up land, agricultural land, agricultural fallow land, open land, river, riverbed, forest and scrub land classes are prepared on the basis of satellite image. The land use land cover study has been done through digital image processing and visual interpretation technique to generate output of Land use / Land cover map of study area on 1:50,000 scale. Also, a 10 Km radius Land Use/Land Cover Map of Study Area (10Km Buffer) Fig 3.9. The land cover pattern and the respective coverage are given in Table 3.6

Table 3.8

Land Use/Land Cover Area Statistics

Land Use/Land Cover	Area (Hectare)	Area (%)
Built-up Land	730.03	2.28
Agricultural land	2791.62	8.70
Agricultural Fallow land	6982.36	21.77
Open Land	482.42	1.50
River/Water Bodies	415	1.29
Riverbed	1023.9	3.19
Vegetation	1802.43	5.62
Forest	17848.6	55.64
Total	**32076.36**	**100.00**

Source: LULC map

Figure- 3.9

Land Use and Land Cover Map superimposed with Drainage map

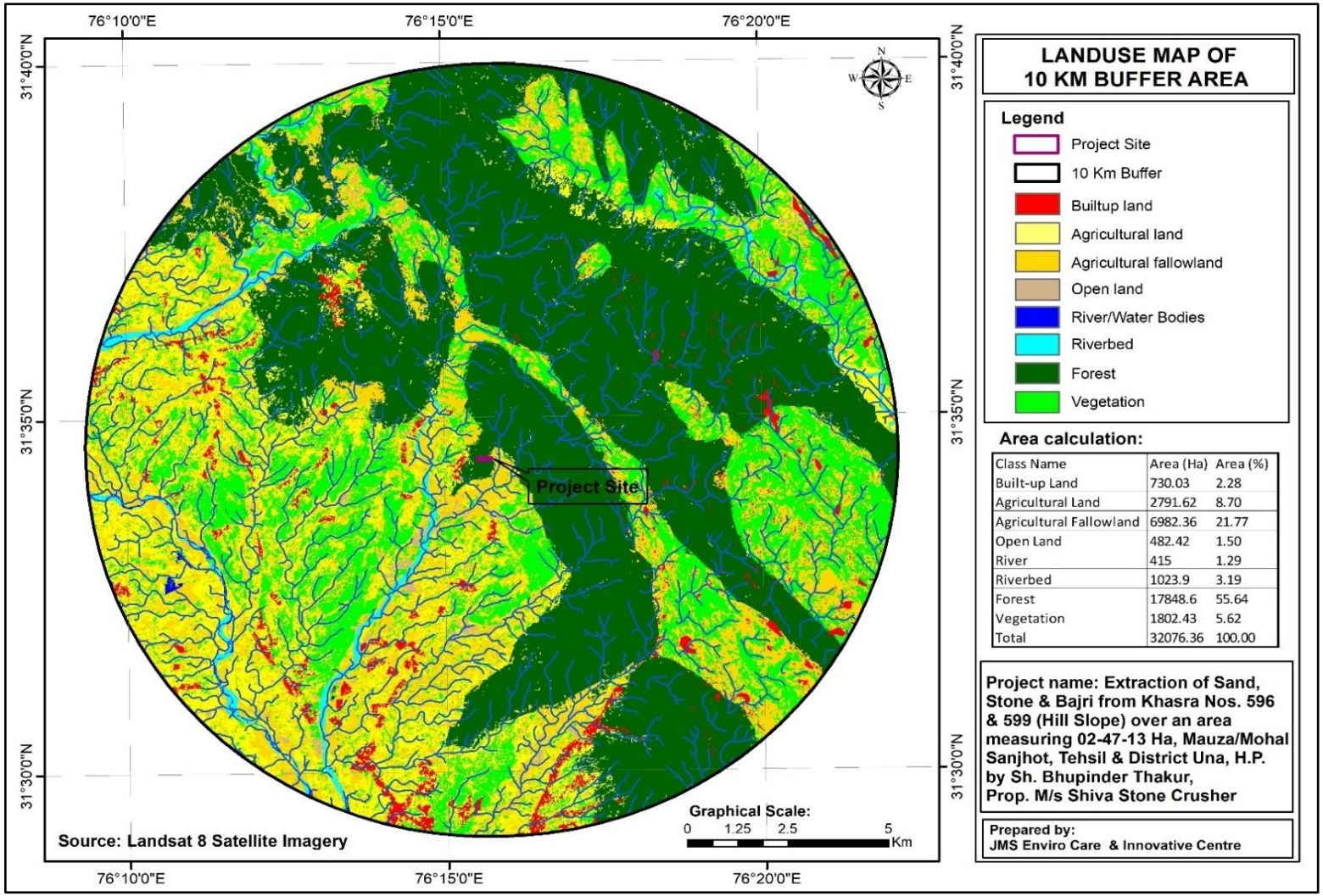


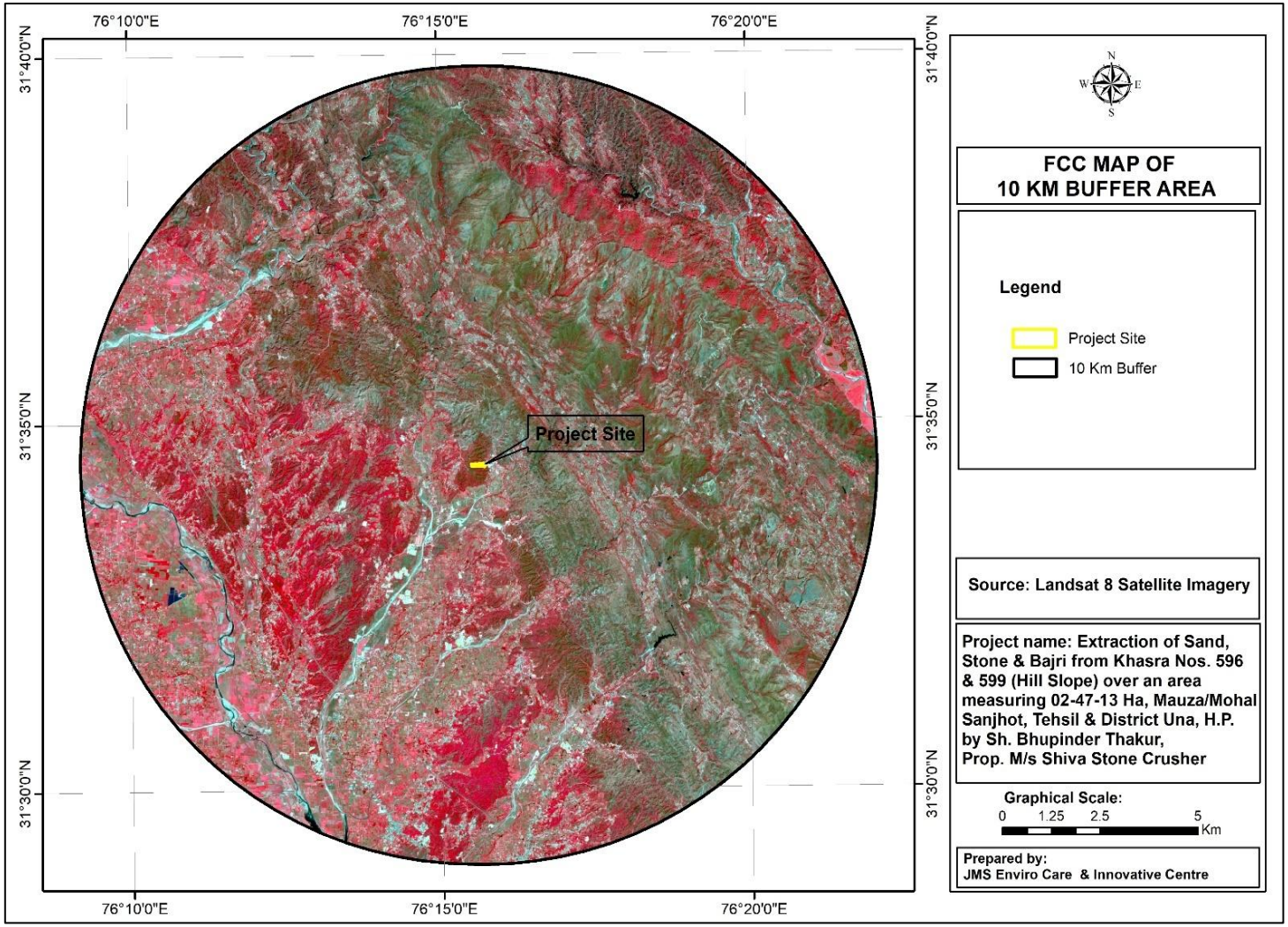
Table- 3.9

Showing Land Use Detail of Surrounding Villages (in Ha)

Name of village	Forests	Area under non- agri cultural uses	Barren and unculturable land	Permanent Pastures and other grazing lands	Land under Misc. Tree Crops	Culturable wasteland	Fallow land other than current fallows	Current Fallows	Net area Sown	Total irrigated land area	Total un-irrigated land area
Bareda	0	16.9	0	0	0	60.5	0.7	0	32	0	32
Sanjhot	0	28.6	78.8	1.8	0	10.6	0	0	94.4	22.8	71.6
Dhamandari	0	43.1	96.2	35.1	0	32.9	0	0	108.4	41.4	66.6
Datwara	0	90.5	0	30.8	0.3	76.8	83.5	0	83.1	19	64
Salangari	0	18.1	0	4.4	32.9	14.2	0.4	1.6	52.8	23.8	0
Nangal-II	0	7	6.6	0	0.7	0.1	0	0	33.7	33.7	0
Nangal-I	0	6.3	0	0	33.7	7.8	0	0.6	22.3	0	22.3
Chalola	0	12.4	44.1	0	3.7	1.5	0	0	56	50.4	5.6

Figure 3.10

10 Km Radius False Color Composite Satellite



Conclusion & Discussion

Based on the perusal of field visit and interaction with framers, it is seen that over the period of time variants of fruits, vegetable and fodder have been successfully grown in the study area are indicator of healthy & conducive land environment.

3.9 SOIL QUALITY:

Physical characteristics:

Soil is generally considered as the upper layer of the earth that is dug or ploughed, especially the loose material in which plants grow. It is generally unconsolidated material composed of soil particles produced by disintegration of rocks. The void spaces between the particles may contain air, water or both.

Physical characteristics of soil influence its use and behavior towards plants growth. The plant support, root penetration, drainage, aeration, retention of moisture & plant nutrients is linked with the physical condition of soils. Normally following physical parameters are important for determining the quality of soil: -

(i) *Texture*

(ii) *Porosity*

(iii) *Bulk density*

(i) Texture

On the basis of texture, the study area may be classified as loamy sand, sandy loam and silty loam. According to the Indian Standard Soil Classification System (ISSCS), details of the same is given in table below:

Details showing classification of soil texture

Very coarse soils	Boulder size		> 300 mm
	Cobble size		80 - 300 mm
Coarse soils	Gravel size (G)	*Coarse*	20 - 80 mm
		Fine	4.75 - 20 mm
	Sand size (S)	*Coarse*	2 - 4.75 mm
		Medium	0.425 - 2 mm
		Fine	0.075 - 0.425 mm
Fine soils	Silt size (M)		0.002 - 0.075 mm
	Clay size (C)		< 0.002 mm

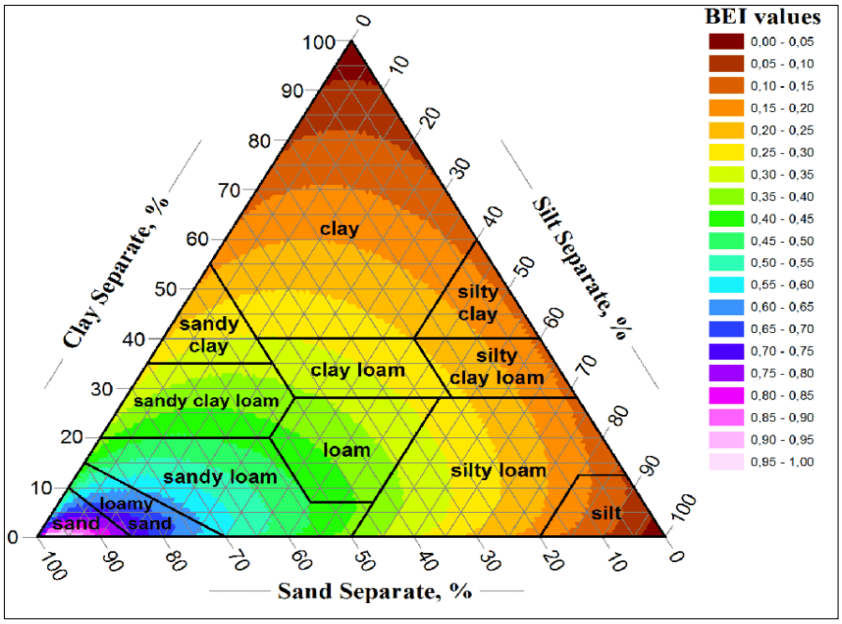
(ii) Porosity

Volume of soil mass that is not occupied by soil particles and usually occupied by air & water are known as pore space. The plant roots grow & exist in the pore spaces. Porosity, therefore, refers to that percentage of soil volume which is occupied by pore spaces.

(iii) Bulk Density

The bulk density weight of a unit of volume of soil inclusive of pore spaces is called bulk density. Generally, the soil with low bulk density has favorable physical conditions.

Balanced Entropy Index of Soil



CHEMICAL CHARACTERISTICS:

Important parameters for characterization of soil for irrigation are the primary nutrients – Nitrogen, Phosphorus and Potassium (N, P, K) and the secondary nutrients—Calcium, Magnesium and Sulphur (Ca, Mg, S). The primary and secondary nutrient elements are known as major elements. This classification is based on their relative abundance, and not on their relative importance.

Methodology for Soil Sampling:

1. Divide the field into different homogenous units based on the visual observation and farmer's experience.

2. Remove the surface litter at the sampling spot.

3. Drive the auger to a plough depth of 15 cm and draw the soil sample.

4. Collect at least 10 to 15 samples from each sampling unit and place in a bucket or tray.

5. If auger is not available, make a 'V' shaped cut to a depth of 15 cm in the sampling spot using spade.

6. Remove thick slices of soil from top to bottom of exposed face of the 'V' shaped cut and place in a clean container.

7. Mix the samples thoroughly and remove foreign materials like roots, stones, pebbles.

8. Reduce the bulk to about half to one kilogram by quartering or compartmentalization.

9. Quartering is done by dividing the thoroughly mixed sample into four equal parts. The two opposite quarters are discarded and the remaining two quarters are remixed and the process repeated until the desired sample size is obtained.

10. Compartmentalization is done by uniformly spreading the soil over a clean hard surface and dividing into smaller compartments by drawing lines along and across the length and breadth. From each compartment a pinch of soil is collected. This process is repeated till the desired quantity of sample is obtained.

11. Collect the sample in a clean cloth or polythene bag.

12. Label the bag with information like name of the farmer, location of the farm, survey number, previous crop grown, present crop, crop to be grown in the next season, date of collection, name of the sampler etc.

Sampling Locations:

The locations for collection of representative samples were selected considering -

1. From different types of land uses in the study area.
2. From possible polluted & comparatively controlled locations in the study area.
3. From the leeward and downward of the predominant wind direction.

List of soil monitoring station are given in Table 3.11. Result of Soil Samples are given in Table 3.9(a) & (b). and Locations of soil monitoring stations are given in Figure 3.10.

Table 3.10

Soil Quality Monitoring Stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction (Km)	Co-ordinates
1.	**SQ-1**	Project site	0	31°34'25.27"N 76°15'40.80"E
2.	**SQ-2**	Harsa Jandora	2.79 km N	31°35'57.19"N 76°15'31.65"E
3.	**SQ-3**	Nagar Chauki	1.71 km WNW	31°34'51.19"N 76°14'40.98"E
4.	**SQ-4**	Talap	1.92 km W	31°34'50.58"N 76°13'56.39"E
5.	**SQ-5**	Kaint	0.64 km ESE	31°34'20.41"N 76°16'0.96"E
6.	**SQ-6**	Khurwain	3.99 Km SE	31°33'47.72"N 76°18'1.81"E
7.	**SQ-7**	Ambhera Dhiraj	1.53 Km NW	31°35'4.46"N 76°15'1.79"E
8.	**SQ-8**	Dhamandri	1.99 Km S	31°33'17.23"N 76°15'45.96"E

Figure -3.11

Location of Soil Monitoring Stations

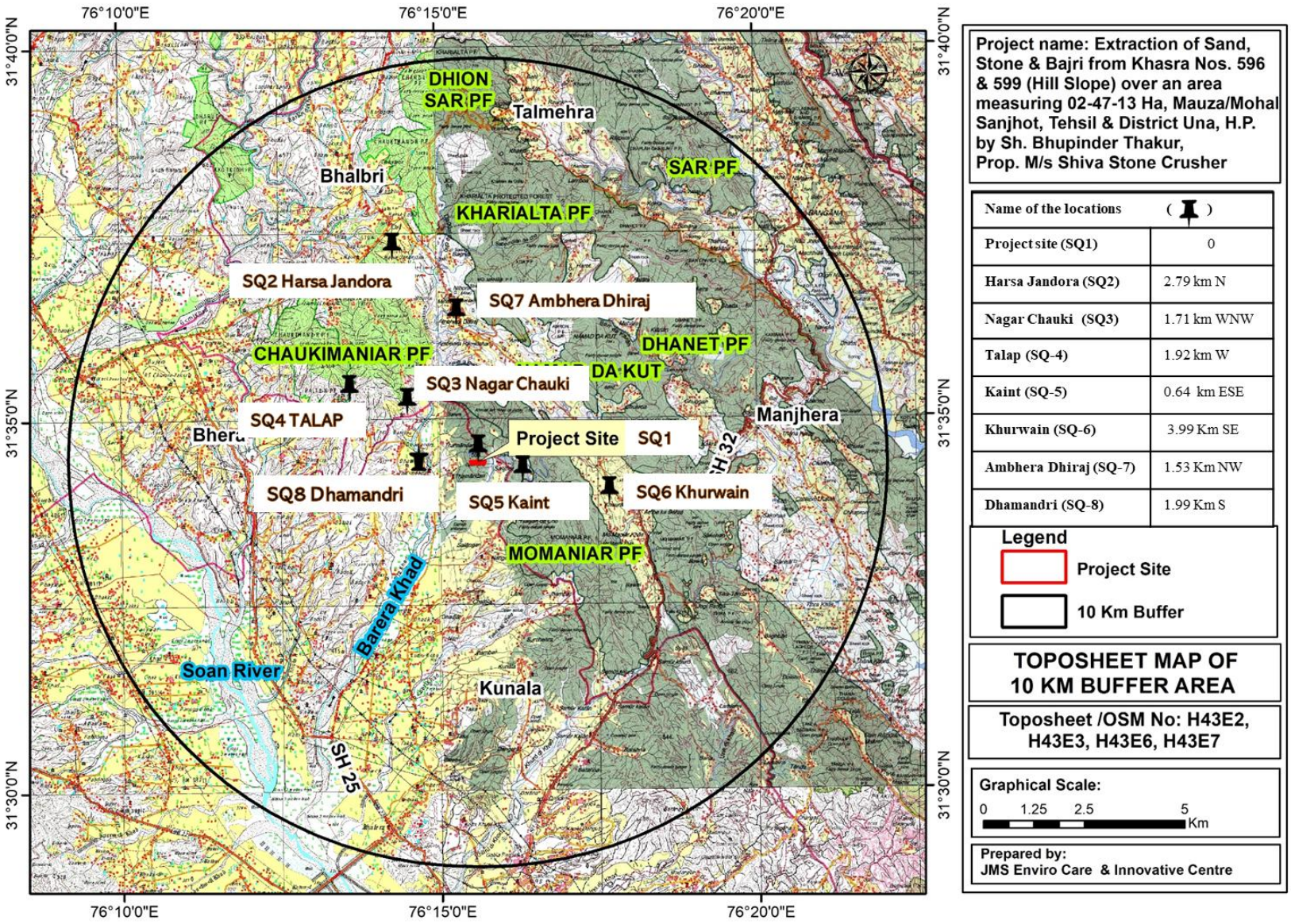


Table – 3.11

Result of Soil Samples (% W/W except pH)

S. No.	Parameter	Unit	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7	SQ8	Test Methods
1.	pH (1:2.5)	--	7.45	7.25	7.16	7.48	7.12	7.38	7.45	7.12	IS:2720(P-26),1987
2.	Electrical Conductivity (1:2)	µmhos/cm	363	348	369	378	344	326	318	289	IS:14767,2000
3.	Texture	--	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Methods Manual for Soil Testing Govt. of India: 2011
4.	Bulk Density	(gm/cm3)	1.45	1.36	1.45	1.24	1.15	1.25	1.32	1.28	IS 2720(P-3),1983 (RA-2021)
5.	Soil Moisture Content	%	10.4	14.6	12.2	10.4	8.4	12.2	9.5	12.5	Methods Manual for Soil Testing Govt. of India: 2011
6.	Color	--	Brown	Brown	Light Brown	Brown	Brown	Brown	Light Brown	Brown	Methods Manual for Soil Testing Govt. of India: 2011
7.	Available Calcium (as Ca)	(mg/kg)	40.2	32.2	52.4	50.0	42.6	38.8	32.6	40.2	Methods Manual for Soil Testing Govt. of India: 2011
8.	Available Magnesium (as Mg)	(mg/kg)	18.4	16.2	12.4	14.8	12.2	14.6	10.8	12.2	Methods Manual for Soil Testing Govt. of India: 2011
9.	Available Sodium	Kg/hac	132	145	122	138	144	120	136	126	Methods Manual for

S. No.	Parameter	Unit	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7	SQ8	Test Methods
	(as Na)										**Soil Testing Govt. of India: 2011**
10.	Available Potassium (as K)	Kg/hac	32.8	54.2	22.6	30.8	28.6	32.4	38.6	28.6	**Methods Manual for Soil Testing Govt. of India: 2011**
11.	Available Nitrogen	(%)	1.45	1.26	1.45	2.32	3.25	2.32	3.12	1.84	**Methods Manual for Soil Testing Govt. of India: 2011**
12.	Organic Matter	(%)	0.51	0.55	0.52	0.50	0.50	0.52	0.51	0.52	**Methods Manual for Soil Testing Govt. of India: 2011**
13.	Available Phosphorus (as P)	Kg/hac	6.8	8.1	6.8	9.4	8.8	12.4	10.2	8.6	**Methods Manual for Soil Testing Govt. of India: 2011**
14.	Cation Exchange Capacity	(meq/100gm)	0.38	0.45	0.40	0.38	0.42	0.41	0.34	0.33	**Methods Manual for Soil Testing Govt. of India: 2011**
15.	Iron (as Fe)	(mg/kg)	1.45	1.32	1.15	1.45	1.26	2.12	3.11	2.10	**USEPA-3050-B-1996: 1996**
16.	Zinc (as Zn)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	**USEPA-3050-B-1996: 1996**
17.	Lead (as Pb)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	**USEPA-3050-B-1996: 1996**

S. No.	Parameter	Unit	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7	SQ8	Test Methods
18.	Manganese (as Mn)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	**USEPA-3050-B-1996: 1996**
19.	Chromium (as Cr)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	**USEPA-3050-B-1996: 1996**
20.	Cadmium (as Cd)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	**USEPA-3050-B-1996: 1996**
21.	Copper (as Cu)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	**USEPA-3050-B-1996: 1996**

Conclusion:

The analytical results of the soil samples collected during the study period are summarized below.

The pH of the soil is an important property; vegetation cannot grow in low and high pH value soils. The normal range of pH in the soils in the study area are varying from 7.12 -7.48 indicating that the soils are falling in slightly alkaline to moderately alkaline. Based on the electrical conductivity, the soils are classified into four groups (Normal, Critical for germination, Critical for growth of the sensitive crops, Injurious to most crops). The electrical conductivity in the study area is varying from 289 to 378 µmhos/cm. This is good for germination. The other important parameters for characterization of soil for irrigation are:

- **The primary nutrients Nitrogen, Phosphorus and Potassium (N, P, K)** and **the secondary nutrients— Calcium, Magnesium and Sulphur (Ca, Mg, S).** The primary and secondary nutrient elements are known as major elements. his classification is based on their abundance in the soil, rather than their importance for plant growth.
- ***Nitrogen*** encourages the vegetative development of plants by imparting a healthy green color to the leaves. The available Nitrogen as N in the study area is varying from 1.26 to 3.25 % indicating a moderate to high level of nitrogen, which is beneficial for plant growth and leaf development.
- ***Phosphorus*** influences the vigor of plants and improves the quality of crops. In the study area available, Phosphorus was found in varying quantities of 6.8 to 12.4 kg/ha. in March to June, 2025, showing a moderate level of phosphorus, which is essential for plant vigor and crop quality.
- ***Potassium*** enhances the ability of the plants to resist diseases, insect attacks, cold and other adverse conditions. The available potassium in the study area varies between 22.6 to 38.6 Kg/ ha in March to June 2025. This is deficient for crops.
- Organic Matter in the study area ranges from 0.50 % to 0.55 %. This is average to sufficient for the crops.

As per physical data, the study area's soils exhibit a course to moderately fine texture, predominantly sandy loam, with a modular structure, moderate bulk density, and moderately good water-holding capacity, rendering them moderately good too good for agricultural purposes.

3.9.1 Geomorphology & Soils:

Una district nestles between Siwalik ranges and forms part of the lesser Himalayas. It has a diverse landscape made of hills, valleys with piedmont zone, terraces. The elevations of the land surface in the district, vary from 340 m in south-eastern part to 1041 m above mean sea level (amsl) in eastern part of the

district. Soan is an intermittent river and maintains base flow in the lower reaches. Soan river has about 80% catchment area in Una district and divides the district into two parts. Soan river flows in a southeastern direction and has a wide channel and exhibits braided nature. It originates near Daulatpur in the northeastern part and leaves the district near Santokhgarh and subsequently joins river Satluj. Number of local streams (about 73 khads) joins the river within the district. During monsoon Soan river gets flooded due to shallow bank heights and large area on both sides get affected. Govt. of HP has initiated riverbank protection cum flood control measures and the work is in progress. In Bangana area, another stream (Khad), flowing parallel to Soan river, is Lunkhar khad, which debouches in Govind Sagar Lake. Also, in the extreme northwestern part of the district small area forms the catchments of a tributary of Beas River basin.

Two types of soils are observed in the district viz., alluvial soil and non-calcic brown soil. Most of the area in the district is covered with alluvial soil and only about 25% of the area i.e. hilly area in the district is covered with non-calcic brown soil. Soils are rich in nutrients and thus are fertile.

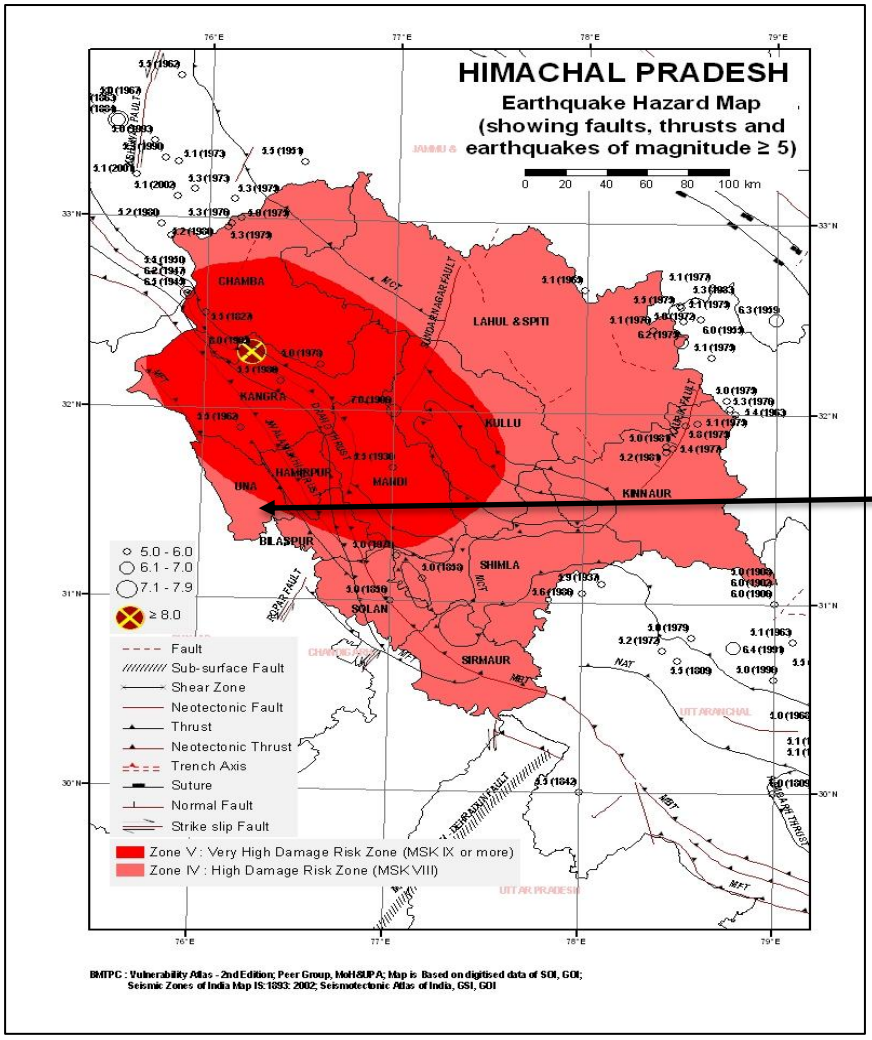
(Source: https://www.cgwb.gov.in/old_website/District_Profile/HP/Una.pdf)

3.9.2 Seismicity:

Himachal Pradesh falls in Zone IV and V. And five districts, namely Chamba (53.2%) Hamirpur (90.9%), Kangra (98.6%), Kullu (53.1%), Mandi (97.4%) have 53 to 98.6 percent of their area liable to the severest design intensity of MSK IX or more, the remaining area of these districts being liable to the next severe intensity VIII. Two districts, Bilaspur (25.3%) and Una (37.0%) also have substantial area in MSK IX and rest in MSK VIII. The location of the proposed hill slope mining project of M/s Shiva Stone Crusher falls under the BIS Classified severe intensity earthquake zone IV. The figure given below displays the location on the Seismic Intensity Map of India prepared by the NDMA (National Disaster Management Authority).

Fig. 3.12

Seismic Intensity Map of India



(Source: National Disaster Management Authority –GOI)

3.10 WATER ENVIRONMENT

Water Quality

Water quality assessment is one of the essential components of EIA study. Such assessment helps in evaluating the existing health of water body and suggesting appropriate mitigation measures to minimize the potential impact from development projects. Water quality of ground resources in the crusher site area has been studied for assessing the water environment and to evaluate the impact of the project. To assess the water quality of the proposed area, sampling was done as per the standard practice. Grab sampling was done for ground and surface water. Water samples were taken as per the Standard Methods (IS & APHA, 23rd Edition 2012). Necessary precautions were taken for preservation of samples. The physical parameters viz. pH, temperature and conductivity were measured at site.

SAMPLING FREQUENCY AND TECHNIQUE

Parameters for analysis of water quality were selected based on the utility of the particular source of water as per MoEF&CC guidance. Hence quality of ground water was compared with IS: 10500: 2012 for drinking purposes. As per the standard practice, one sample was taken in the study period. Sampling was done by standard sampling technique and analyzed as per the Standard Methods. Necessary precautions were taken for the preservation of samples. Sampling location of surface water & ground water are given in Figure 3.13 and list of surface & ground water sample is given in Table 3.10 & 3.13 respectively. The results surface water & ground water are given in Table 3.11(a), (b) & 3.14(a), (b) respectively.

a) Surface Water

Surface water bodies in the study area are crucial for supporting local ecosystems and human activities. To assess the water quality, samples were collected from nearby streams, rivers, and other surface water sources. Surface water sample was collected, to the study area and potential impact on local water quality. Standard protocols were followed for sampling and analysis of physio-chemical parameters, providing valuable insights into the surface water quality.

Criteria for selection of surface water quality sampling locations:

While selecting a sample it is always important to take care that the sample should be representative of the selected water body. In order to remove the bias in sample selection, grab samples were collected on random basis considering the following key aspects:

- The sampling locations were selected based on upstream and downstream uses of the water body.
- Drainage Pattern of study area in general.
- Domestic discharge points from the near-by villages.

Table - 3.12

Surface Water Sampling Stations

Station	Sampling Location
SW-1	Soan River

Table - 3.13

Results of surface water

S. No.	Parameters	Results	Test Method
1.	pH	7.52	IS:3025 (P-11): 1983
2.	Color, HU	<5	IS:3025:P-4:1983
3.	Odour	Agreeable	IS:3025:P-5:1983
4.	Turbidity, NTU	<1	IS:3025 (P-10): 1984
5.	Total Dissolved Solids, mg/l	184	IS:3025 (P-16): 1984
6.	Total Suspended Solids, mg/l	14.2	IS:3025 (P-17): 1984
7.	Total Hardness (as $CaCO_3$), mg/l	132	IS:3025 (P-21): 2009
8.	Total Alkalinity (as $CaCO_3$), mg/l	90.0	IS:3025 (P-23): 1986
9.	Chemical Oxygen Demand, mg/l	10.0	IS:3025 (P-58): 2006
10.	BOD (at 27°C) for 3 days, mg/l	3.3	IS:3025(P-44)1993
11.	Dissolved Oxygen, mg/l	6.4	IS:3025 (P-38): 1989
12.	Calcium (as Ca^{++}),mg/l	38.0	IS:3025:P-40:1991:RA:2003
13.	Magnesium (as Mg^{++}), mg/l	13.2	IS:3025:P-46: 1994
14.	Sodium (as Na^{+}), mg/l	20.4	IS:3025:P-45:1983:RA:2003
15.	Potassium (as K), mg/l	12.2	IS:3025:P-45:1983
16.	Nitrate (as NO_3),mg/l	2.2	IS:3025 (P-34) : 1988
17.	Chloride (as Cl), mg/l	12.4	IS:3025 (P-32): 1988
18.	Sulphate (as SO_4), mg/l	22.8	IS:3025 P-24 : 1986
19.	Iron (as Fe), mg/l	1.22	IS:3025(Part-53), 2003 & C/1, 10 Phenanthroline Method.
20.	Total Chromium (as Cr), mg/l	ND (DL-0.005)	IS:3025 (P-52): 2003
21.	Zinc (as Zn), mg/l	2.10	IS:3025 (P-49) : 1994
22.	Fluoride (as F) mg/l	2.34	IS:3025 (P-60) : 2008
23.	Mercury (as Hg) mg/l	ND (DL-0.002)	IS:3025:P-48):1994:RA-2003
24.	Boron (as B),mg/l	ND (DL-0.1)	IS:3025 (P-57): 2005
25.	Aluminum (as Al) mg/l	ND (DL-0.1)	IS:3025:(P-55):2003
26.	Cadmium (as Cd), mg/l	ND (DL-0.001)	IS:3025 (P-41): 1992
27.	Fecal Coliform, MPN/100 ml	77.0	IS:1622-1981-(RA2009)
28.	Total Coliform, MPN/100 ml	108	IS:1622-1981-(RA2009)

Table – 3.14

CPCB water Quality Criteria for Surface water as per use

Designated Best Use	Class	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	**1.** Total Coliforms Organism MPN/100ml shall be 50 or less **2.** pH between 6.5 and8.5 **3.** Dissolved Oxygen 6mg/l or more **4.** Biochemical Oxygen Demand 5 days 20°C, 2 mg/l or less
Outdoor bathing (Organized)	B	**1.** Total Coliforms Organism MPN/100ml shall be 500 or less **2.** pH between 6.5 and8.5 **3.** Dissolved Oxygen 5mg/l or more **4.** Biochemical Oxygen Demand 5 days 20°C, 3 mg/l or less
Drinking water source conventional treatment and after disinfection	C	**1.** Total Coliforms Organism MPN/100ml shall be 5000 or less **2.** pH between 6 and9 **3.** Dissolved Oxygen 4mg/l or more **4.** Biochemical Oxygen Demand 5 days 20°C, 3 mg/l or less
Propagation of Wild life and Fisheries	D	**1.** pH between 6.5 and8.5 **2.** Dissolved Oxygen 4mg/l or more **3.** Free Ammonia (as N) **4.** Biochemical Oxygen Demand 5 days 20°C, 2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	**1.** pH between 6.0 and8.5 **2.** Electrical Conductivity at 25°C micro mhos/cm, maximum 2250 **3.** Sodium absorption Ratio Max.26 **4.** Boron Max.2 mg/l
	Below-E	Not meeting any of the A, B, C, D & E criteria

Class A: Drinking water source without conventional treatment but after disinfection.

Class B: Outdoor bathing (organized).

Class C: Drinking water source after conventional treatment and after disinfection.

Class D: Propagation of wild life fisheries.

Class E: Irrigation, Industrial cooling, controlled waste disposal.

Below E: Not meeting A, B, C, D & E Criteria

Surface water quality results are summarized below:

- The pH was recorded at 7.52, indicating neutral water conditions.
- Total Hardness was measured at 132 mg/L.
- Total Dissolved Solids (TDS) were found to be 184 mg/L, well below the IS:2296 permissible limit of 1,500 mg/L.
- Fecal Coliform levels were observed at 77.0 MPN/100 mL, while Total Coliform count were 108 MPN/100 mL, indicating a moderate level of microbial presence.
- Chemical Oxygen Demand (COD) was recorded at 10.0 mg/L.
- Biochemical Oxygen Demand (BOD) was measured at 3.3 mg/L.

Conclusion: -

Based on these parameters and as per the water quality criteria laid down by the Central Pollution Control Board (CPCB), the Soan River water near the project site qualifies as **Designated Best Use Class B**, making it suitable for outdoor bathing.

b) Ground Water

Groundwater has been found as an important source for the local needs of water consumption for various purposes, mainly domestic and agriculture. Keeping in view the importance of groundwater to the local population, samples of ground water were collected from the study area for the monitoring and assessment of groundwater quality.

The quality of ground water was studied by collecting 8 water samples from representative hand pumps, tube wells. Sampling points were decided using Google imagery and field survey. Standard procedures were followed for the sampling and analysis of physio–chemical parameters of water.

Table 3.15 shows the details of location of water sampling stations and results of different parameters are given in Table 3.16.

The sampling sites were selected considering the following criteria –

1. Topography of the study area Pattern.
2. Areas which may be affected due to the activity.
3. Any probable locations with open discharge of sewage or waste water.
4. Location of any solid waste dumping facility in the vicinity of the project site.

Table-3.15

Ground Water Monitoring Stations

S. No.	Sample Code	Name of Village / Location	Distance & Direction (Km)	Observation	Co-ordinates
1.	GW-1	Project site	0	Crusher Site	31°33'24.24"N 76°14'49.44"E
2.	GW-2	Harsa Jandora	2.79 km N	Sample was collected from a house in the village	31°35'57.19"N 76°15'31.65"E
3.	GW-3	Nagar Chauki	1.71 km WNW	Sample was collected from a house in the village	31°34'51.19"N 76°14'40.98"E
4.	GW-4	Talap	1.92 km W	Sample was collected from a house in the village	31°34'50.58"N 76°13'56.39"E
5.	GW-5	Kaint	0.64 km ESE	Sample was collected from a house in the village	31°34'20.41"N 76°16'0.96"E
6.	GW-6	Khurwain	3.99 Km SE	Sample was collected from a house in the village	31°33'47.72"N 76°18'1.81"E
7.	GW-7	Ambhera Dhiraj	1.53 Km NW	Sample was collected from a house in the village	31°35'4.46"N 76°15'1.79"E
8.	GW-8	Dhamandri	1.99 Km S	Sample was collected from a house in the village	31°33'17.23"N 76°15'45.96"E

Figure - 3.13
Locations of Surface Water & Ground Water

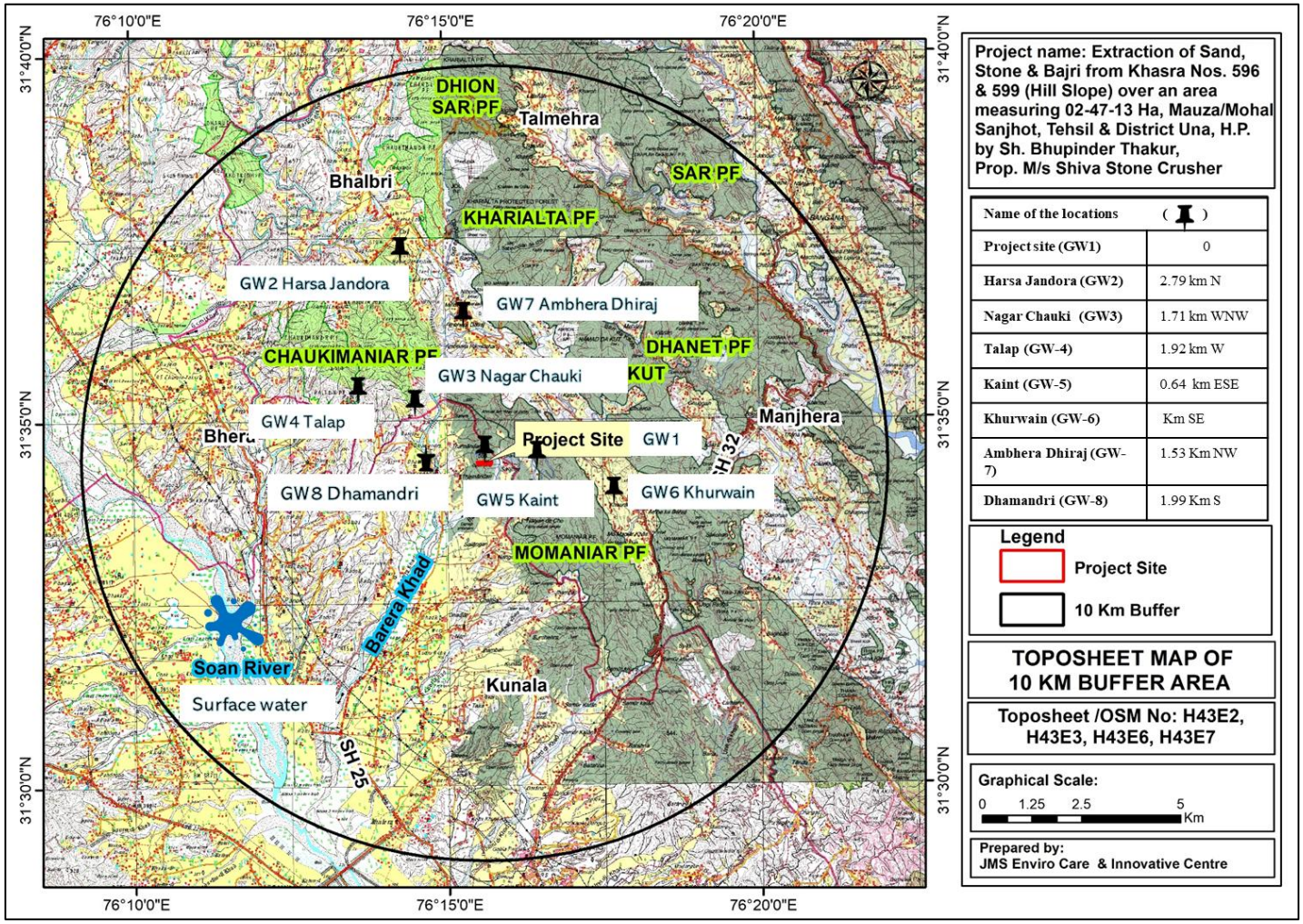


Table:3.16
Results of Groundwater

Parameters	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable Limit	Permissible Limit
pH	7.32	7.43	7.21	7.33	7.45	7.66	7.18	7.29	6.5-8.5	No relaxation
Color, HU	<5	<5	<5	<5	<5	<5	<5	<5	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity, NTU	<1	<1	<1	<1	<1	<1	<1	<1	1 Max.	5
Total Dissolved Solids, mg/l	284	299	308	284	312	287	322	268	500 Max.	2000
Total Hardness (as CaCO3), mg/l	245	250	270	260	260	245	310	260	200 Max.	600
Calcium (as Ca++), mg/l	34.0	42.0	46.0	38.0	42.0	34.0	32.0	42.0	75 Max.	200
Magnesium (as Mg++), mg/l	15.6	16.8	19.2	18.0	16.8	15.6	14.4	13.2	30 Max.	100
Total Alkalinity (as CaCO3), mg/l	225	240	250	215	275	285	225	250	200 Max.	600
Chloride (as Cl), mg/l	17.4	19.9	12.4	22.4	19.9	22.4	17.4	14.9	250 Max.	1000
Sulphate (as SO4), mg/l	24.7	32.7	28.5	26.5	32.4	22.2	18.9	20.6	200 Max.	400
Iron (as Fe), mg/l	0.13	0.12	0.12	0.11	0.13	0.12	0.12	0.11	1.0 Max.	No relaxation
Zinc (as Zn), mg/l	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	5 Max.	15
Nitrate (as NO3), mg/l	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	45 Max.	No relaxation
Chromium (as Cr), mg/l	ND (DL-	ND (DL-	ND (DL-	ND (DL-	ND (DL-	ND (DL-	ND (DL-	ND (DL-	0.05 Max.	No relaxation

Parameters	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable Limit	Permissible Limit
	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)	0.005)		
Manganese (as Mn), mg/l	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	0.1 Max.	0.3
Mercury (as Hg), mg/l	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	0.001 Max.	No relaxation
Cadmium (as Cd), mg/l	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	0.003 Max.	No relaxation
Fluoride (as F), mg/l	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	1.0 Max.	1.5
Residual Chlorine (as Cl2), mg/l	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND	ND
E. coli/100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Total Coliform, MPN/100ml	**<2**	**<2**	**<2**	**<2**	**<2**	**<2**	**<2**	**<2**	**<2**	<2

Groundwater Quality Assessment:

- The pH ranged from 7.18 at Ambhera Jandora to 7.66 at the Project Khurwain, indicating neutral to slightly alkaline water. The analyzed values are within the acceptable limit (6.5-8.5) mentioned in the IS:10500-2012.
- Total hardness varied between 245 mg/l at Project site and Khurwain to a maximum of 310 mg/l at Ambhera Dhiraj. The analyzed values are beyond the acceptable limit (200 mg/l) but within the permissible limit (600 mg/l) as mentioned in the IS:10500-2012.
- Calcium concentration ranged from 32.0 mg/l at Ambhera Dhiraj to 46.0 mg/l at Nagar Chauki, (acceptable limit is 75 mg/l as per IS:10500-2012) while magnesium levels were between 13.2 mg/L at Dhamandri and 19.2 mg/L at Nagar Chauki (below the acceptable limit i.e. 30 mg/l and below the permissible limit i.e. 100 as per IS:10500-2012).
- Total Dissolved Solids (TDS) ranged from 268 mg/L at Dhamandri to 322 mg/L at Ambhera Dhiraj. The analyzed values are within the acceptable limit (500 mg/l) mentioned in the IS:10500-2012.
- Total alkalinity was recorded as 285 mg/L at the Khurwain and 215 mg/L at Talap. These values are beyond the acceptable limits (200 mg/L) but within the permissible limits (600 mg/L) as specified in IS:10500-2012.
- Chloride concentrations varied from 12.4 mg/L at the Nagar Chauki to 22.4 mg/L at Talap and Khurwain. The analyzed values are within the acceptable limit (250 mg/l) mentioned in the IS:10500-2012.
- Heavy metals were below detection limits (BDL) in all groundwater samples, with the exception of iron (Fe), which was detected in the range of 0.11 mg/L to 0.13 mg/L. These levels indicate that the groundwater in the study area is potable in nature.
- Microbiological analysis showed Total Coliform levels below 2 at all locations, with E. coli absent, confirming good microbiological quality of groundwater.

Conclusion:

All the above parameters at the various locations in the study area are within permissible and tolerable limits for drinking purpose. The underground water in the area is thus potable.

In the study area since the samples have been collected from different sites at isolated places, the level of concentration of different elements varies quite considerably which may be due to small aquifers. However, the levels of the various components are within permissible norms for drinking water.

3.10.1 Hydrogeology

The rock formations occupying the district, range in age from pre-Cambrian to Quaternary period. The generalized geological succession in the district is given below:

ERA	PERIOD	FORMATION	DESICRIPTION
Quaternary	Recent to sub-recent	Alluvium; fluvial, terrace, piedmont	Sand, silt, clay, gravel, pebble and cobble etc.
		Undifferentiated	Sand, clay, gravel, pebble, cobble and boulders
Tertiary	Pliocene to Mid. Miocene	Upper Siwalik	Soft sandstone, brownish clay, shale, poorly sorted, crudely bedded conglomerate & boulder beds.
		Middle Siwalik	Gray sandstone, and brownish clay/ shale
		Lower Siwalik	Red and purple sandstone and shale

Source: https://www.cgwb.gov.in/old_website/District_Profile/HP/Una.pdf

Siwalik sediments underlie Hilly/undulating areas, where springs (mostly gravity/contact type) and bowries are the main ground water structures apart from hand pumps. The discharges of the springs, varies from seepages to 0.50 lps. Bowries are dug well type constructions on the hill slopes/ nalas for tapping the seepages. In the low-lying areas underlain by Siwalik rocks, dug wells and hand pumps are the main ground water structures, that range in depth from 3.00 to 25.00 m bgl, where in depth to water level ranges from 2.50 to 15.00 m bgl. In upland/plateau areas, the water level is generally deep. In Beet area water level is more than 60 m below land surface has been observed. In Una valley area, the ground water occurs in porous unconsolidated / alluvial formation (valley fills) comprising sand, silt, gravel, cobbles / pebbles etc., and forms prolific aquifer. Ground water is being extensively developed in the area by medium to deep tube wells, dugwells, dug cum borewells and also by hand pumps. Depth of dugwells and dug cum bored wells in area, ranges from 4.00 to 70.00 m bgl, whereas depth to water level ranges from near surface to 26.46 m bgl in pre monsoon. Yield of shallow aquifer is moderate with well discharges up to 10 lps. In Una valley depth to water level shows wide variation. During pre-monsoon period (May 2012) it ranged from less than 1.00 to 65.00 m bgl. Deeper water levels are confined mainly in south west (Beet area) and localized patches in north eastern and central part of Una valley. In major parts of Una valley, depth to water level ranged between 2.00 to 10.00 m bgl. Some areas in discharge zone along the river Soan, show water logging conditions, where water level is less than 1.5 m bgl.

3.10.2 Status of Ground Water Development:

Ground water development, particularly in valley areas underlain by alluvium/valley fills of the district, is moderate to high. In these areas, all the major irrigation and drinking water supplies depend on ground water viz., open wells and tube wells. The deeper aquifers in the area are being extensively developed by

tube wells and about 600 tube wells have been constructed in Una valley, most of them in govt. sector. The tube wells range in depth from 51.0 to 220.0 m bgl where water level rest above ground level (Free flow) to 45.00 m bgl in valley area. The well yields are high, with discharge ranging from 553 to 3500 lpm, for 7-10 m draw down. An average tube well of about 100m depth yields about 20 - 25 lps. In the sedimentary areas (Siwalik Group) deep exploration has not been carried out. The piezometric head in tube wells are reported to be more than 100m bgl in upland areas. State departments have also drilled shallow bore wells or handpumps in the district, with the depth ranging from 25 to 60 m, depending upon the lithology of the area, with a discharge varying from 0.5 lps to 3 lps. Few of them are energized with submersible pumps fitted.

3.11 NOISE ENVIRONMENT

Noise is one of the most undesirable and unwanted by-products of our modern life style. It may not seem as insidious or harmful as air and water pollutants but it affects human health and wellbeing and can contribute to deterioration of human well-being in general and cause neurological disturbances and physiological damage to the hearing mechanism in particular. It is therefore, necessary to measure both the quality as well as the quantity of noise in and around the site.

- **Measurement of Noise:**

The intensity of sound energy in the environment is measured in a logarithmic scale and is expressed in a decibel, dB (A) scale. In a sophisticated type of sound level meter, an additional circuit (filters) is provided, which modifies the received signal in such a way that it replicates the sound signal as received by the human ear and the magnitude of sound level in this scale is denoted as dB (A). The sound levels are expressed in dB (A) scale for the purpose of comparison of noise levels, which is universally accepted by the international community. The day noise levels have been monitored during 6.00 am to 10.00 pm and night noise levels, during 10.00 pm to 6.00 am at all the 8 locations, which covers residential areas, commercial area, industrial area and silence zone within 10 km radius of the study area.

- **Sources of Noise:**

Open-cast mining is known to produce high sound pressure levels through exploratory and production drilling, cutting, handling of materials, ventilation, crushing, conveying, processing and transportation.

- **Measurement of Vibration:**

Vibration is most commonly measured using a ceramic piezoelectric sensor or accelerometer. Most accelerometers rely on the use of the piezoelectric effect, which occurs when a voltage is generated across certain types of crystals as they are stressed. The acceleration of the test structure is transmitted to a seismic mass inside the accelerometer, which generates a proportional force on the piezoelectric crystal.

This external stress on the crystal then generates a high- impedance, electrical charge proportional to the applied force and, thus, proportional to the acceleration.

Sources of Vibrations:

The mining in the present case is to be done manually and semi-mechanically on the hill slope. No blasting process shall be envisaged for mining of minor minerals. However, dynamic affect caused due to movement of loaded vehicles, may cause generation of low amplitude vibration but the impact will not significant. The estimation of vehicle parameters from measurements of road surface vibrations can be divided into three parts:

a) *The interaction between the vehicle and the road, that is, the force exerted by the vehicle onto the road which acts as the vibration source.*

b) *Propagation of the waves from the source (vehicle) to the sensor.*

c) *Measurement and processing of the vibrations in order to estimate the underlying vehicle parameters.*

The signal measured by a sensor can be described in discrete time as

$$x[n] = f[n] * h[n, r] + w[n]$$

where

- **f[n]** is the load applied to the road at distance r,
- **h [n, r]** is the distance-dependent pavement impulse response
- **w[n]** is a disturbance term
- $*$ denotes convolution.

SAMPLING LOCATIONS:

A preliminary survey was undertaken to identify the major noise generating sources in the area. The noise survey was conducted to assess the background noise levels in different zones. Gazettes Notification {S.O. 123(E)} of MoEFCC dated February 14, 2000 on ambient air quality standards has different noise levels for different zones viz industrial, commercial, and residential and silence zones. Eight sampling locations were selected for the sampling of noise level

Figure - 3.14

Locations of Noise Monitoring Stations

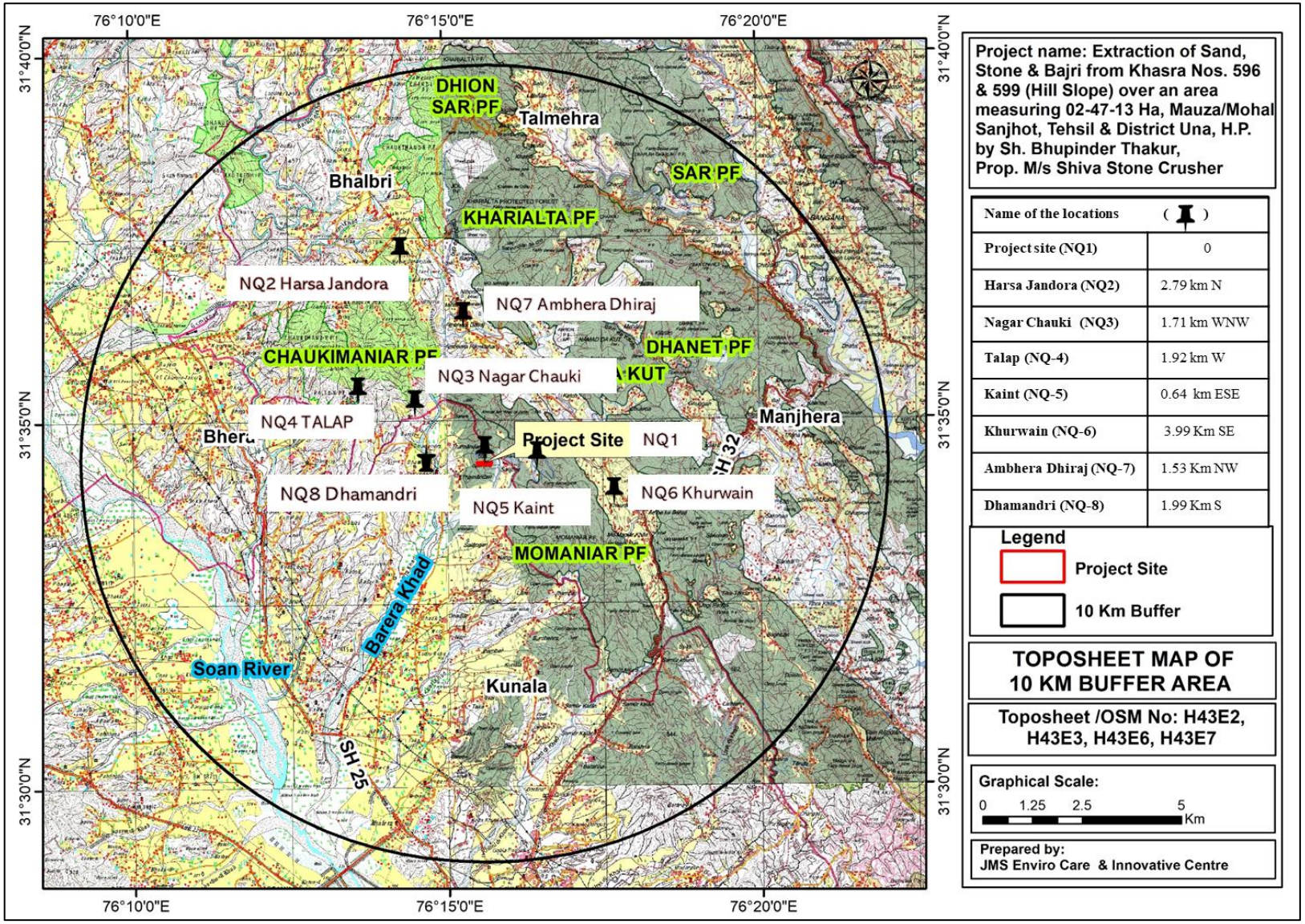


Table 3.17

Details of Noise Monitoring Stations

S. No.	Sample Code	Name of Village/ Location	Distance (Km) & Direction	Co-ordinates
1.	**NQ-1**	Project site	0	31°34'23.60"N 76°15'42.59"E
2.	**NQ-2**	Harsa Jandora	2.79 km N	31°35'57.19"N 76°15'31.65"E
3.	**NQ-3**	Nagar Chauki	1.71 km WNW	31°34'51.19"N 76°14'40.98"E
4.	**NQ-4**	Talap	1.92 km W	31°34'50.58"N 76°13'56.39"E
5.	**NQ-5**	Kaint	0.64 km ESE	31°34'20.41"N 76°16'0.96"E
6.	**NQ-6**	Khurwain	3.99 Km SE	31°33'47.72"N 76°18'1.81"E
7.	**NQ-7**	Ambhera Dhiraj	1.53 Km NW	31°35'4.46"N 76°15'1.79"E
8.	**NQ-8**	Dhamandri	1.99 Km S	31°33'17.23"N 76°15'45.96"E

Detailed results of noise levels are shown in **Table 3.18.** Ambient standards in respect of noise are given in **Table 3.19.**

Table 3.18

Noise Level Results Leq dB (A) in and Around Project Area

March to June 2025

S. No.	Locations	Value in dB(A) (Average)		S. No.
		Day Time (1 Hour)	Night Time (1 Hour)	
01.	Project site	68.9	36.1	**IS 9989:1981(Rev.2001)**
02.	Harsa Jandora	48.4	31.2	
03.	Nagar Chauki	47.7	32.5	
04.	Talap	46.8	34.4	
05.	Kaint	45.5	31.6	
06.	Khurwain	48.6	33.9	
07.	Ambhera Dhiraj	44.3	32.8	
08.	Dhamandri	46.3	34.4	

Day time is reckoned as 6.00 A.M. to 10.00 pm and night time is reckoned as 10.00 pm to 6.00 A.M.

Table 3.19

Noise Standards

Area Code	Category of Area	Noise dB(A) Leq	
		Day Time (6:00am-10:00pm)	Night Time (6:00am-10:00pm)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Conclusion

Ambient Noise levels across the eight monitoring locations remained within acceptable limits. During the daytime, levels ranged from 68.9 dB(A) at Project Site to 44.3 dB(A) at the Ambhera Dhiraj. The project site is located near the four active mining sites, as such the higher noise level measured at project site is contributed due to the activities of the mining. At night, noise levels varied from a minimum of 31.2 dB(A) at Harsa Jandora to a maximum of 36.1 dB(A) at the Project Site, reflecting minimal nighttime disturbances.

From the above study and discussions, it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB. Since, there will be no noise generating machinery, the impact on noise level after unit operation shall be insignificant.

3.12 BIOLOGICAL ENVIRONMENT

A natural ecosystem is a structural and functional unit of nature. It has different biological and physical components, which are interrelated to each other and survive by interdependence. An ecosystem has self-sustaining ability and controls the number of organisms at any level by cybernetic rules. The basic purpose to explore the biological environment under Environmental Impact Assessment (EIA) is to assist the decision-making process and to ensure that the project options under consideration are environmental-friendly. An ecological survey of the study area was conducted, particularly with reference to listing of species and assessment of the existing baseline ecological conditions in the study area. The main objectives of the ecological survey were aimed at assessing the existing flora and fauna components in the study area, to understand the possible impacts on the biological environment caused by the proposed project activities, and to formulate, if necessary, the appropriate mitigation/preventive measures for such impacts. Data has been collected through secondary sources and by site visits.

The present study was carried out in two separate headings for floral and faunal community. The aspects to be covered in the study for the project are given in Table 3.20.

Table-3.20

Aspect to be covered in the study Area

Aspect of Environment	Impacts
A. **Terrestrial Ecology**	Impacts on terrestrial flora and fauna
	Impacts on Rare-Endangered-Threatened (RET) wildlife
	Impacts on socially/ economically/ genetically/ biologically important species
B. Aquatic Ecology	Impacts on aquatic fauna/flora
	Impacts on spawning and breeding grounds for aquatic species

The information presented in this chapter has been collected through field studies, consultation with various government departments and collation of available literature with various institutions and organizations. The summary of data collected from these sources as a part of the EIA study is outlined in **Table 3.21.**

Table- 3.21
Summary of Data Collected from various sources

Aspect	Mode of data collection	Parameters Monitored	Frequency	Source(s)
Terrestrial Ecology	Primary field Survey and secondary literature survey	Floral and Faunal Diversity and TheirImportance	One Season (Winter)	Field studies, Forest &wild life Department and literature review
Aquatic Ecology	Primary field Survey and secondary literature survey	Diversity of Species and Their Importance	One Season (Winter)	Field studies, Forest/ wild life Department and literature review

With the change in environmental conditions, the vegetation cover as well as animals reflects several changes in its structure, density and composition. The present study was carried out separately for floral and faunal community respectively.

- **Sampling**

For field assessment, i.e., primary data collection, a standard statistical sampling method was followed. The sampling design followed random sampling method. The sampling area was decided based on prior land-use map of the project influence zone (within the 10 km radius around the project area), outlining forest areas and other types of habitats, topographic features and build-up area.

(A) FLORA

Methodology for floral study

1. ***Secondary literature survey:*** Published literature, including those from relevant organizations like the Botanical Survey of India (BSI), the Wildlife Institute of India (WII- Dehradun), the respective Forest Department of the State concerned etc., research papers, articles, books and reliable websites, available within and adjacent to the study area were compiled and inventoried as "Secondary Floral Diversity Database". This database includes the common English names, vernacular names (if available), botanical names, habitat, and ecological characters (if available) of such floral groups as herbs, shrubs and trees.

2. ***Primary field survey- herbs*:** Herbaceous plants were studied using the quadrat method as followed during vegetation survey. The size of each quadrat for herb survey was 1m x 1m. Field identification of the species and later identification through photographs were followed. Unidentified herbs were collected following proper procedure and prepared into herbarium sheets for later identification. For mosses, lichens and other plants the plot size was taken as 0.1m x 0.1m.

3. ***Primary field survey – shrubs*:** Shrubs were studied using the quadrat method as followed during vegetation survey. The size of each quadrat for shrub survey was 5m x 5m for shrubs of 3m height. Field identification of the species and later identification through photographs were followed. Unidentified shrubs were collected following proper procedure and prepared into herbarium sheets for later identification.

4. ***Primary field survey – trees:*** Trees were studied using the quadrat method as followed during vegetation survey. The size of each quadrat for tree survey was 20m x 20m. Field identification of the species and later identification through photographs were followed. Samples of unidentified trees were collected following proper procedure and prepared into herbarium sheets for later identification.

5. ***Primary database:*** Data generated from the field survey within and adjacent to the study area were meticulously compiled and inventoried as "Primary Floral Diversity Database". This database includes the common English names, vernacular names (if available), botanical names, habitat, and ecological characters (if available) of such floral groups as herbs, shrubs and trees.

6. ***Field instruments/materials for floral study:*** Measuring tape/s, herbarium sheets, newspaper, herbarium press, polythene bags (incl. zip-locked pouches), 78 clinometers, and magnifying glass, camera, and GPS unit.

(B) FAUNA

Methodology for Faunal diversity

1. ***Secondary literature survey:*** Published literature, including research papers, articles, books and reliable websites, available within and adjacent to the study area should be meticulously compiled and inventoried as "Secondary Faunal Diversity Database". This database includes the common English names, vernacular names (if available), zoological names, habitat, and ecological characters (if available) of such faunal groups as birds, mammals and amphibians-reptiles.

2. ***Primary field survey – birds*:** For avian diversity assessment, any of the suitable survey methods were used. The most preferred of such methods are point-counts and line-transects. The size of point as well as line transects can be suited to the field site and other limiting factors such as visibility.

3. ***Primary field survey – mammals*:** For mammalian diversity assessment, the suitable methods in order of preference are – direct observations, indirect evidence and sign survey, and transects (if possible and necessary).

4. ***Primary field survey– amphibians and reptilians:*** Direct observation and indirect evidence/sign survey are preferred for assessing amphibian and reptilian diversity in the field site.

5. ***Primary database:*** Data generated from the field survey within and adjacent to the study area should be meticulously compiled and inventoried as "Primary Faunal Diversity Database". This database includes the common English names, vernacular names, zoological names, habitat, and ecological characters (if available) of such faunal groups as birds, mammals and amphibians- reptiles.

Majority of Una district consists of chill forest. Under the second category of the forest, the Khair is Predominant species. The third category consists of broad leaves species but have lot of bushy growth as well.

The forest in the district, have been divided in to three categories.

1. Lower Shivalik Chil Pine Forest

2. Northern dry mixed deciduous scrub forest.

3. Broad Leaved Forest

- The list of flora & fauna (in core zone & buffer zone) is shown in table 3.22(a) and 3.22(b).

Table- 3.22 (a)
Flora & Fauna in the study area

Local Name	English Name	Botanical Name	Status as per IUCN
Asian Sain	Indian Laurel	*Terminalia tomentosa*	--
Ak	Apple of Sodom,rubber bush,swallow-wort	*Calotropis procera*	LC
Akha	Heart leaf raspberry	*Rubus paniculatus*	--
Am	Mango	*Magnifera indica*	--
Amaltas, Kaniar, Alius	Golden Shower tree	*Cassia fistula*	*LC*
Amla	Chinese laurel,currant tree	*Antidesma acidum*	*LC*
Amla	Indian gosseberry	*Emblica offcinalis*	--
Anar-dana	Wild pomegranate	*Punica granatum*	*LC*
Arjun	Arjuna myrobalan	*Terminalia arjuna*	*LC*
Badhla	Indian willow	*Salix tetrasperma*	*LC*
Badrol		*Persea gamblei*	*LC*
Bahankahar, Gin, Agrnimath	Premna	*Premna mucronate*	--
Bakkar bel	Black creeper	*Ichnocarpus frutescens*	--
Ban	Beech-wood,foomar tree	*Gmelina arborea*	*LC*
Ban Basuti	Blue-beard	*Caryopteris odorata(syn.C.bicolor,C.wallichiana)*	--
Ban Malti	Jasmine	*Jasminum multiflorum*	--
Bana	Five-leaved chaste tree	*Vitex negundo*	*LC*
Bans Bainj, Sotha	Male bamboo	*Dendrocalamus strictus*	--
Bantaur		*Atylosia crassa*	*LC*
Barasol Pan	Winged Stalked Flemingia	*Flemingia semialta*	--
Barnahi, Billan	Elephant apple,word apple,monkey fruit, curd fruit	*Limonia acidissima*	--
Barthua	Bridal couch tree, sage plant	*Hymenodictyon excelsum*	--
Basant	Yellow flax,golden - girl	*Reinwardtia indica*	--
Batindu		*Stephania elegans*	--
Behra	Belleric myrobalan	*Terminalia belerica*	--
Bel	Stone apple, holy fruit tree	*Aegle marmelos*	*NT*
Ber	Jujube	*Zizyphus mauritiana*	--
Berna	Three-lived-grass	*Crataeva religiosa*	--
Bhabar, Bagar	Baib grass	*Eulaliopsis binate*	--
Bhadrun		*Gymnosporia royleana*	--
Bhakara		*Saurauja napaulensi*	--
Bhang	Hemp,Marijuana	*Cannabis sativa*	--
Bharmela		*Euonymus pendulus*	--
Bhirang	Shrubby deeringia	*Deeringia celosioidses*	--
Biul, Dhaman		*Grewia oppositifolia*	--
Bohar, Barh	Bengal fig, Indian fig	*Ficus bengalensis*	--
Burkani	Wild berry	*Maesa indica*	*LC*

Local Name	English Name	Botanical Name	Status as per IUCN
Cha buti	Billygoat-weed,chick weed, Gaot weed, whiteweed	*Ageratum conyzoides*	--
Chakunda	Negro coffee, coffee senna	*Cassia occidentalis* *Seena occidentalis*	*LC*
Chamar bel	Bush-Grape,fox-grape,three-leaves wild vine, threeleaf cayratia	*Cayratia trifolia*	--
Chamar Saman	Velvety melon feather-foil	*Glochidion velutinum*	--
Chamorar		*Ehretia laevis*	--
Charaki	Charming clematis	*Clematis grata*	--
Chittar Chhun	Drooping prickly pear	*Opuntia monacantha*	*LC*
Chhota Mendhru	Cape-myrtle, African box-wood	*Myrsine Africana*	--
Chil	Chir-pine	*Pinus roxburghii*	*LC*
Chilla	Downy-leaved false kamela	*Casearia elliptica*	--
Chirandi	Dandal	*Xylosma longifolium*	--
Chopar chilla		*Miliusa velutina*	*LC*
Coibur,machrun		*Clematis nutans*	--
Dagur	Hairy-fig,devil-fig	*Ficus hispida*	*LC*
Damani	Two-lobed cross berry	*Grewia laevigata*	*LC*
Dargarhi	Himalayan Mimosa	*Mimosa himalyana*	--
Dhakkari	Arni	*Clrodendrum phlomidis*	--
Dhao, Chhal	Axlewood	*Angogesissus latifolia*	--
Dhawin, Dhawi	Fire-flame bush	*Woodfordia floribunda*	--
Dholu		*Chrysopogan montana*	--
Dhurmalti	Jasmine	*Jasminum arborescens*	--
Drek,dek,beakin	Presian cedar, white lilac	*Melia azedarach*	*LC*
Dudh bel	Bread-flower	*Vallaris heynei*	--
Dudla	Willow leaved fig	*Ficus nemoralis*	--
Dubli	Telegraph Plant or Semaphore Plant	*Desmodium motorium*	--
Durga,dogla,fegra	Wild Himalayan fig	*Ficus palmata*	*LC*
Dusem	Indian squirrel tail	*Colebrookia oppotifolia*	--
Faindal	Christmas vine,snow-creeper,bridal-wreath	*Porana paniculata*	--
Flah, dhak	Flame of the forest, Bastard Teak,Parrot Tree	*Butea monosperma*	*LC*
Gaddi kuri	Spinous kino tree	*Bridelia squamosa*	*LC*
Gajal bel	Cowhage, velvet bean	*Mucuna pruriens*	--
Gandla	Curry Leaf tree	*Murraya Koenigii*	*LC*
Ghanira ghandheela	Oleander	*Nerium odorum*	--
Ghas bel	Dobber	*Cuscuta reflexa*	*LC*
Giddardak	Wild-grape	*Ampelocissis latifolia*	--
Ginani		*Premna barbata*	*LC*
Girgithan	Mock buckthorn	*Sageretia parviflora*	--
Gullhan		*Halmintonia suaveolens*	--

Local Name	English Name	Botanical Name	Status as per IUCN
Gulodam	Buckthorn	*Rhamnus trigaeter*	--
Handa bhera	Slow match tree	*Careya arborea*	--
Harar	Black myrobalam, gallnut tree	*Terminalia chebula*	*LC*
Har singar		*Nyctanthes arbortristis*	--
Hyum garna	Caperberry, Caperbush	*Capparis sepiaria*	*LC*
Jagru	Tick-trefoil,tick clover or beggar lice	*Demodium velutinum*	--
Jaman	Black -plum	*Syzygium cumini*	*LC*
Jaman khumb	Indian sarsaparilla	*Cryptolepis buchanani*	--
Jamnota	Barbados nut, purging nut	*Jatropha curcas*	*LC*
Japani toot, tutra	Paper mulberry	*Broussonetia papyrifera*	*LC*
Jhol	Clematis gouriana, Indian traveller,s joy	*Clematis gouriana*	--
Jindru	Himalayan randia	*Randia tetrasperma*	--
Jugter bhr khel		*Aspidopterys wallichii*	--
Jung kinch	Wild yam	*Dioscorea deltoides*	--
Kachnar karal	Malabar ebony, mountain ebony	*Bauhinia malabarica*	*LC*
Kachnar karal	Budhist bauhinia, Mountain Ebony, Orchid tree	*Bauhinia variegata*	*LC*
Kahi	Asian fodder cane	*Saccharum spontaneum*	*LC*
Kainth	Wild Himalayan Pear	*Pyrus pashia*	*LC*
Kakal ber	Jackal jujube	*Zizyphus oenoplia*	--
Kakrain	Zebra-wood	*Pistacis integerrima*	--
Kala akha	Rough fruit-berry	*Runus lasiocarpus*	--
Kala Dhao, hira harkinu	Mottled ebony	*Diospyros cordifolia*	--
Kalan	Kaim	*Mitragyna parvifolia*	*LC*
Kali Basuti	Patchouli	*Pogostemon plectranthoides*	--
Kamal	Monkey face tree	*Mallotus phillipinensis*	--
Kandroi	Drooping fig	*Ficus Semicordata (syn. Ficus cunia)*	--
Kangu	Batoko's plum	*Flacourtia ramontchi*	--
Kante bans	Gaint thorny bamboo	*Bambusa arundinacea*	--
Kao	Wild olive,iron tree, Indian olive	*Olea ferruginea*	--
Kapur mingar		*Strobilanthes auriculatus*	--
Karanda		*Ficus clavata*	--
Kararoi tila pati		*Roylea cinerea*	--
Karmaru	Black siris,fragrant albizia,Ceylon rosewood	*Albizzia Odoratissima*	--
Karun	Himalayan mulberry	*Morus serrata*	--
Kasakuri		*Trema politora*	--
Kathaman		*Eugenis jambolana Var caryophyllifolia*	--
Kathi	Cassia indigo	*Indigofera besua (Syn. Indigofera pulchella Indigofera leptostachya)*	--
Kehmal	Indian ash tree	*Lannea coromandelica*	*LC*
Kendu	Mountain persimmon	*Dospyros montana*	--

Local Name	English Name	Botanical Name	Status as per IUCN
Keor	Bitter oleander	*Hollarrhena antidysentereica*	--
Khair	Cutch tree	*Acacia catechu*	--
Khajoor	Date-sugar palm,Indian winepalm, sgar palm, wild dte palm	*Phoenix sylvestris*	--
Kikkar	Indian gum-arabic tree	*Acacia Nilotica spp indica*	--
Kinnu	Persimmon Tree	*Dispyrosa chloroxylon*	--
Kumbhi		*Cordia vestita*	--
Kuri,harshingar	Coral Jamsine, Tree of Sorrow, blackwood	*Nyctanthus arbor tristis*	--
Phalsa	Dhaman	*Grewia elastica*	--
Pippal	Scared fig	*Ficus religiosa*	*LC*
Putajen	Child- tree, Indian Amulet Plant, Spurious Wild olive	*Drypetes roxburghii(syn.Putranjiva roxburghii)*	--
Rajain,pardesi	Indian elm, Kanju	*Holoptelea integrifolia*	*LC*
Ralan ,arlu	Mysore thorn, Cats claw	*Caesalpinia decapetala*	--
Ram ban	Century plant	*Agave americana*	*LC*
Rara	Emetic nut	*Xeromphis spinos (syn. Randia dumetorum)*	--
Rattak	Carb's eye	*Abrus precatatious*	--
Reru,riur	White babool, Distiller's acacia	*Acacia leucophloea*	--
Rihan,meda -lakri	Indian laurel	*Litsea chinesis*	--
Ritha	Soap nut tree	*Sapindus mukorossi*	*LC*
Rudhar		*Ficu sarmentosa*	--
Rumbal	Cluster fig	*Dicus racemesa*	--
Sagwan	Teak	*Tectona grandis*	*EN*
Sakar		*Ehretia aspera*	--
Sal	Yellow Balau	*Shorea robusta*	*LC*
Salangan		*Milletia extensa*	--
Salod	Indian kudju	*Pueraria tuberose*	--
Samma		*Engelhardtia spicata var colebrookia*	*LC*
Sanan suhanjua	Drum-stick tree	*Moringa oleifera*	*LC*
Sandan, sanan		*Ougeinia oujeinensis*	--
Sankhiran	Black-oil tree, Climbing -Staff plant	*Celastrus panicultus*	--
Sarain	Jasmine	*Jusminum disparmum*	--
Sarpri		*Periploca calophylla*	--
Sason	Wild tea	*Osyris wightiana*	--
Satmnlia,musli	Wild asparagus	*Asparagus racemosus*	--
Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	*Dalbergia sissoo*	*LC*
Siah-toot	Black fruited mulberry	*Morus laevigata*	--
Sia-toot	Japanese mulberry, Korean mulberry, Small-leaved mulberry tree	*Morus australis*	--
Simble	Silk cotton tree	*Bombax ceiba*	*LC*
Siris, Sarin	Lebbek-tree, Fry -tree,flea- tree	*Albizzia lebbek*	--

Local Name	English Name	Botanical Name	Status as per IUCN
Sukhchain	Pongam	*Deriss Indian (syn.Pongmia pinnata)*	--
Tatpalanga	Broken bones plant, Indian Calosanthes,Indian trumpet	*Oroxylum indicum*	*LC*
Terni		*Tylophora hirsute*	--
Thor,Choon	Royle's spurge	*Euphorbia royleana*	--
Toot	White mulberry	*Morus alba*	*LC*
Tor	Camels foot climber, malu creeper	*Bauhinia vahlii*	--
Tun	Indian cedar, Indian mahogany Indian toon	*Toona cilata*	--
Unga	Aramina Fibre,Congo Jute	*Urena lobata*	*LC*

LC- Least Concern, NT- Not threatened

Source: DFO, Una

- **IUCN Red List Categories and Criteria:** IUCN Red List Categories and Criteria are intended to be an easily and widely understood system for classifying species at high risk of global extinction. List of Birds and Fishes is given in Table 3.22(a) and 3.22(b). Flow diagram of IUCN Categories is given in Figure 3.15.

Objectives of IUCN Red List Categories and Criteria:

- To provide a system that can be applied consistently by different people.
- To improve objectivity by providing users with clear guidance on how to evaluate different factors which affect the risk of extinction.
- To provide a system which will facilitate comparisons across widely different taxa.
- To give people using threatened species lists a better understanding of how individual species were classified.

Fig. 3.15: IUCN Categories

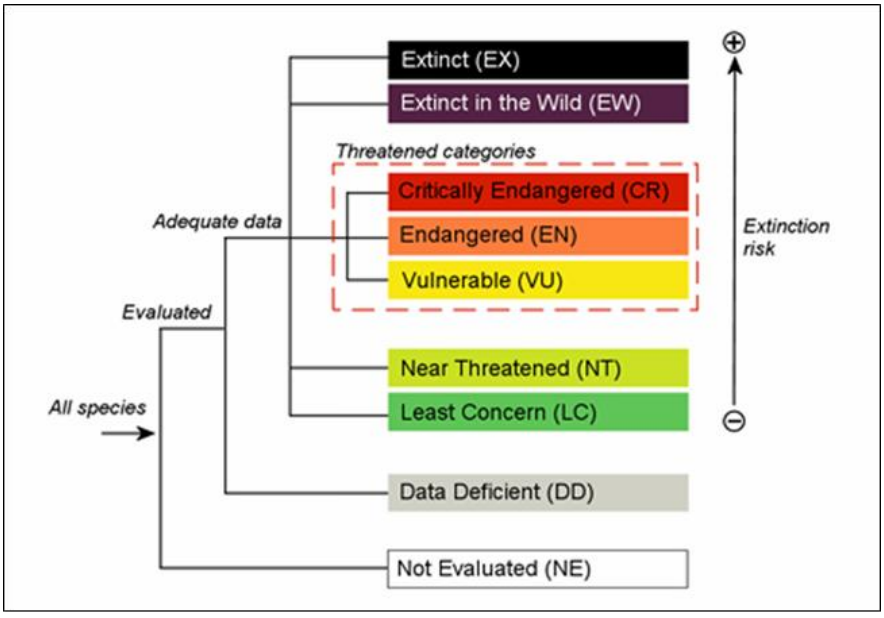


Table- 3.22 (b)

Fauna in the Study Area

S. No.	Zoological Name	Common Name	Schedules as per WPA 1972 as amended till date
3	*Mellivora expensis*	The Honey Badger	Not Listed (Appendix I)
4	*Pteropus medina*	Bat	Not Listed (Appendix I)
5	*Suncus caeruleu*	Grey Musk	Not Listed
6	*Canis aurenus*	Jackal	Schedule II
7	*Funanbulus pennant*	Squirrel	Schedule IV
9	*Felis chaus*	Jangle Cat	Schedule II
10	*Muntiacus- Muntjak (vaginlis)*	Barking Deer	Schedule III
11	*Lepus nigricoilis*	Hare	Schedule II
12	*Macaca mulatta*	Rhesus Macaque	Schedule II
13	*Preshytes entellus*	Langoor Common	Not Listed
14	*Vulpes bengalensis*	Fox	Schedule II
15	*Boselaphus tragocamelus*	Blue Bull	Schedule II
17	*Cervus unicolor*	Sambar	Schedule III
18	*Hystric indica*	Porcupine	Schedule IV
19	*Sus sacrofa*	Wild Boar	Not Listed

BIRDS

S. No.	Zoological Name	Common Name	Schedules as per WPA 1972 as amended till date
1	*Ardea cinera*	Grey Heron	Schedule II
2	*Egretta garzotta*	Little Egret	Schedule II
3	*Cotarnix cotarnix*	Common Quail	Schedule II
4	*Dicrurus macrocercus*	King Crow	Not Listed
5	*Pycnonotus cafer*	Red vented Bulbul	Schedule II
7	*Streptopelia decaocto*	Indian Ring Dove	Schedule II
8	*Upupa epops*	Hooper	Not Listed
9	*Galus gonnerathi*	Jungle Fowl	Schedule II
10	*Gallus gallus*	Red Jungle Fowl	Not Listed
11	*Columba livia*	Blue Rock Pigeon	Schedule IV
12	*Aleedo atthis*	Common King Fisher	Schedule IV
13	*Francolinus francolinus*	Black Partridge	Schedule II
14	*Endynamis seolopaceus*	Koel	Schedule II
15	*Acrdothere tristris*	Common Myna	Schedule II
16	*Paro cristetus*	Common Pea Fowl	Not Listed (Appendix I)
17	*Anas poeciborhyncha*	Indian Duck	Schedule II
18	*Coracia bengalensis*	Blue Jay or Roller	Schedule IV
19	*Pycnonotus jocosus*	Red Whiskered Bulbul	Schedule II
20	*Corvus culminatus*	Himalyan Jungle Crow	Not Listed

BIRDS			
S. No.	**Zoological Name**	**Common Name**	**Schedules as per WPA 1972 as amended till date**
21	*Arborophila torqueola*	Hill Partridge	Schedule II
22	*Bulbulcus ibis*	Cattle Egret	Schedule II
23	*Columba eversmanni*	Yellow-eyed pigeon	Schedule II
24	*Vanellus indicus*	Red-wattled Lapwing	Schedule II
25	*F pondicrianus*	Grey Partridge	Not Listed
26	*Psittacula eupatria*	Indian Parakeet	Schedule II

REPTILES			
S. No.	**Zoological Name**	**Common Name**	**Schedules as per WPA 1972 as amended till date**
1	*Python regius*	Python	Not Listed
2	*Varanus*	Monitor Lizard	Schedule II
3	*Viperidae*	Pit Viper	Schedule IV
5	*Pantherophis obsoletus*	Rat Snake	Schedule II
7	*Chameleon calcartus*	Indian Chameleon	Schedule II
8	*Hemidactylus frenatus*	Common House Lizard	Not Listed
9	*Typhlops braminus*	Common Warm Snake	Not Listed
10	*Vipera russellii*	The Viper	Schedule II
11	*Testudo flagans*	Common Land Tortoise	Not Listed

FISH			
S. No.	**Zoological Name**	**Common Name**	**Schedules as per WPA 1972 as amended till date**
1	*Channa striata*	Murrel	Not Listed
2	*Anguilliformes*	Eel	Not Listed (Appendix II)
3	*Eutropiichthys*	Bachwa	Not Listed

Table: 3.23 Faunal species in the study area (Core zone)

S. No.	Common Name	English Name	Botanical Name	Status as per IUCN	Habit
1.	Tut, Sahtoot, Safed Sahtoot	White mulberry	*Morus alba*	LC	Tree
2.	Vetiver and khus	Vetiver	*Vetiver zizanioides*	--	Grass
3.	Kehmal, Jhingan	Indian ash tree	*Lannea coromandelica (Lannes grandis)*	LC	Tree
4.	Curry Patta	Curry leaves or Sweet neem	*Murraya koenigii*	LC	Shrubs
5.	Rajain, Pardesi, Papri, Chilbil	Indian elm, kanju	*Holoptelea integrifolia*	LC	Tree
6.	Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	*Dalbergia sissoo*	LC	Tree
7.	Simble, Seemal	Silk cotton tree	*Bombax ceiba*	LC	Tree
8.	Nimba tree or Nim tree	Neem	*Azadirachta indica*	LC	Tree
9.	Jaman	Black-plum	*Syzygium cumini*	LC	Tree
10.	Kachnar, Karal	Malabar ebony, mountain ebony	*Bauhinia malabarica*	LC	Tree

LC: Least Concern

Faunal Species in the Study Area (Core Zone)			
S. No.	***Zoological Name***	**Common English name**	**Schedules as per WPA, 1972 as amended till date**
1.	*Sus sacrofa*	Wild Boar	Schedule- II
2.	*Muntiacus Mutjak (vaginlis)*	Barking Deer	Schedule-III
3.	*Macaca mulatta*	Monkey	Appendix-I (Schedule not listed)
4.	*Gallus gallus*	Red Jungle Fowl	Not listed
5.	*Framcolinus francolinus*	Black Partridge	Not listed
6.	*F. pondicrianus*	Grey Partridge	Not listed
7.	*Vulpie bengalensis*	Fox	Appendix-I (Schedule not listed)

Source: DFO, Una

Interpretation and Conclusion for Ecology & Biodiversity:

The project is situated in an area characterized by healthy vegetation, with the majority of the land dedicated to forest and agricultural use. The study area includes Six Reserved or Protected Forests, and

there are no National Parks or Wildlife Sanctuaries within the immediate vicinity (the closest- Nangal Wildlife Sanctuary being 13.40 kms away). Furthermore, the study did not identify or discuss any Rare, Endangered, or Threatened (RET) species among the floral species present in the area.

Interpretation for Faunal Diversity:

The study area is rich in natural diversity, featuring a mix of forests and both perennial and seasonal water bodies. While the area shows evidence of wild animal movement, most of the observations are based on secondary data. It's important to note that the study area does not harbor any Schedule-I species or endemic species, which would require special conservation attention. ***With ongoing development in the region, it's crucial to focus on protecting and strengthening the existing biodiversity. To minimize potential ecological impacts, it is recommended that project activities be restricted to the core zone, ensuring that the surrounding ecosystems remain undisturbed.***

Forest/ Wild Life Sanctuaries:

There are Six Notified Protected Forest fall within 10 Km distance from the mining site.

Table:3.23
List of Protected Forests

Sr. No.	Name of the Protected Forests	Distance from the Mining Site
1.	Momaniar Protected Forest	Within 10 Km radius
2.	Dhanet Protected Forest	
3.	Kharialta Protected Forest	
4.	Sar Protected Forest	
5.	Chaukiminar Protected Forest	
6.	Dhion Sar Protected Forest	

Conclusion:

Based on the field study and secondary data and the characteristics of the study area, it is concluded that the existing ecosystem is balanced in terms of co-existence, stability and resilience and the ecosystem is able to recover from disturbances.

3.13 SOCIO- ECONOMIC:

The socio-economic study encompasses the analysis of socio-economic conditions of habitation and communities living in the study area in addition to the potential issues & concerns of study area. In this regard, the view of stakeholders was invested through focused group discussions and questionnaire. The study involves the collection of baseline data including demographic details such as households, population literacy, employment pattern, health, transportation, communication & welfare facilities such as educational, recreational, hospitals and project awareness amongst the stakeholder. In addition, the

economic resources, infrastructure facilities, communication, and aesthetic attributes are also considered in the study as per the requirements under the Ministry MoEF&CC.

Objectives & Methodology:

- Identification of people living in the study area & demographic profile of the area- through secondary data collection from Census of India.
- Social status of society in the- through focused group discussion (FGD) selected villages.
- Communities & sub -groups living in the core zone by caste & religion- from Panchayati Raj Institution (PRI).
- Vulnerable group of people such as BPL, SC & ST- from PRI representatives & interval method.
- Occupational pattern- from secondary data via Census of India.
- Sources of income of Panchayats- - from PRI.
- Economic well-being of different classes based on the daily wage rate & land holdings- from PRI.
- Physical infrastructure e.g. roads, transport, medical, recreational and educational facilities- from PRI.
- Effects of ongoing developments near the proposed project such as lifestyle within the core zone- from FGD.
- Likely impact of proposed development on the core zone as assessed in association with.
- Needs of different communities based- from data analysis.
- Social management plan with budget, timeline on study- from data analysis.

Methodology applied for selection of sample & data collection:

The methodology which is applied for primary source of data collection i.e. gathering data through field survey for socio- economic environment is depicted below:

a) Sampling Method: A judgmental and purposive sampling method was used for choosing respondents of various sections of the society i.e. Sarpanch, Adult Males and Females, Teachers, Medical Practitioners, Businessmen, Agriculture Laborers, Unemployed Group etc. Judgmental and purposive sampling method to access the total population that helps to fulfill the purpose of research needs.

b) Data Collection Method: For the process of data collection through primary source certain methods were used amongst them is:

i. Field Survey and Observations: Field survey and observations was made in nearby sampling village and the socioeconomic status of that region was studied. Visits were made at Health Centers, Schools, Gurudwaras, Panchayat office etc.

ii. Interview Method: Structured interview method was used to collect data regarding the awareness and opinion from the samples selected of the various socio- economic sections of the community. Structured interviews involve the use of a set of pre-decided questions that includes fixed and alternative questions. The questionnaire mainly highlights the parameters such as income, employment and working conditions, housing, food, water supply, sanitation, health, energy, transportation and communication, education, environment and pollution to assess the standard of living of that particular region and general awareness, opinion and expectation of the respondents about the proposed project. Interview method helps to collect more correct and accurate information as the interviewer is present during the field survey.

Secondary data collection & Review:

Demographic profile of the district based on Census-2011 is tabulated below. In order to create a baseline of villages/habitation in the study area.

- The villages located in the study area were collected on the basis of land use maps.
- The demographic data of villages were collected from the district census data.

3.13.1 Socio-economic data of study area:

Una is a small foot hill district located on the south - western border of the State. The district comprises of four tehsils and one sub-tehsil consisting of 848 villages as per 2011 Census. The district has two sub-divisions of Amb and Una. Amb sub-division is comprised of Bharwain sub-tehsil, Amb Tehsil and Nagar Panchayats of Daulatpur and Gagret. Una sub-division is constituted by tehsils of Bangana, Una,and Haroli including Una Municipal Council, Nagar Panchayats of Santokhgarh and Mehatpur Basdehra. The details of the socio-economic study of Una district are tabulated below**:**

Socio economic data of study area

Particulars	Total	Male	Female
Population	5,21,173	2,63,692	2,57,481
Child (0-6)	59231	31591	27640
Literacy Rate	86.53%	91.89%	81.11%
Schedule Caste	115,491	58601	56890

Schedule Tribe	8601	4445	4156
Total Workers	215,346	141,612	73,734
Main Workers	134,482	105,932	28,550
Marginal Workers	80,864	35,680	45,184

We have chosen 4 villages in the study area for socioeconomic study. These villages are situated at different distance & direction from the project site, covering the whole study area which is mentioned below:

S. No.	Name of the Village	Distance and Direction from Project site
1.	Harsa Jandora	2.79 Km N
2.	Kaint	1.0 Km E
3.	Talap	1.92 Km W
4.	Nagar Chauki	1.71 Km WNW

1. Harsa Jandora

Harsa Jandora is a village located in Bangana Tehsil of Una district in Himachal Pradesh, India. It is situated 26km away from district headquarter Bangana. Bangana is the sub-district headquarter of Harsa Jandora village. As per 2009 stats, Jol is the gram panchayat of Harsa Jandora village.

According to Census 2011, the location code or village code of Harsa Jandora is 018358. The village spans a total geographical area of 43.58 hectares, and the pincode of the locality is 174314. Una is nearest town to Harsa Jandora village for all major economic activities.

Particulars	Total	Male	Female
Total Population	120	61	59
Child Population (0–6 yrs)	10	8	2
Scheduled Castes (SC)	10	7	3
Scheduled Tribes (ST)	0	0	0
Literate Population	96	52	44
Illiterate Population	24	9	15

2.Kaint

Kaint is a village located in Bangana tehsil of Una district in Himachal Pradesh, India. It is situated 34km away from district headquarter Bangana. Bangana is the sub-district headquarter of Kaint village. As per 2009 stats, Chowki Khas is the gram panchayat of Kaint village. According to Census 2011, the location

code or village code of Kaint is 018353. The village spans a total geographical area of 167.07 hectares, and the pincode of the locality is 174314. Una is nearest town to Kaint village for all major economic activities. The total population of Kaint village is around 79, including approximately 37 males and 42 females, with a sex ratio of 1135 females per 1,000 males. There are about 9 children aged 0–6 years in Kaint village, reflecting the young population in the village. Kaint village has 29 people belonging to the Scheduled Castes (SC). The literacy rate of Kaint village is about 74.68%, with male literacy at 83.78% and female literacy at 66.67%

Particulars	Total	Male	Female
Total Population	79	37	42
Child Population (0–6 yrs)	9	3	6
Scheduled Castes (SC)	29	15	14
Scheduled Tribes (ST)	N/A	N/A	N/A
Literate Population	59	31	28
Illiterate Population	20	6	14

3. Talap

Talap is a village located in Bangana tehsil of Una district in Himachal Pradesh, India. It is situated 20km away from district headquarter Bangana. Bangana is the sub-district headquarter of Talap village. As per 2009 stats, Chowki Khas is the gram panchayat of Talap village. According to Census 2011, the location code or village code of Talap is 018351. The village spans a total geographical area of 166.5 hectares, and the pincode of the locality is 174314. Una is nearest town to Talap village for all major economic activities. The total population of Talap village is around 114, including approximately 56 males and 58 females, with a sex ratio of 1035 females per 1,000 males. There are about 5 children aged 0–6 years in Talap village, reflecting the young population in the village.The literacy rate of Talap village is about 70.18%, with male literacy at 76.79% and female literacy at 63.79%. There are around 27 households in Talap village.

Particulars	Total	Male	Female
Total Population	114	56	58
Child Population (0–6 yrs)	5	4	1
Scheduled Castes (SC)	0	0	0
Scheduled Tribes (ST)	N/A	N/A	N/A
Literate Population	80	43	37
Illiterate Population	34	13	21

4. Nagar Chauki

Nagar Chauki is a village located in Bangana tehsil of Una district in Himachal Pradesh, India. It is situated 28km away from district headquarter Bangana. Bangana is the sub-district headquarter of Nagar Chauki village. As per 2009 stats, Chowki Khas is the gram panchayat of Nagar Chauki village. According to Census 2011, the location code or village code of Nagar Chauki is 018352. The village spans a total geographical area of 308.51 hectares, and the pincode of the locality is 174314. Una is nearest town to Nagar Chauki village for all major economic activities. The total population of Nagar Chauki village is around 939, including approximately 471 males and 468 females, with a sex ratio of 993 females per 1,000 males.There are about 112 children aged 0–6 years in Nagar Chauki village, reflecting the young population in the village.Nagar Chauki village has 296 people belonging to the Scheduled Castes (SC) and 90 residents from the Scheduled Tribes (ST).The literacy rate of Nagar Chauki village is about 73.80%, with male literacy at 77.92% and female literacy at 69.66%.There are around 201 households in Nagar Chauki village.

Particulars	Total	Male	Female
Total Population	939	471	468
Child Population (0–6 yrs)	112	62	50
Scheduled Castes (SC)	296	138	158
Scheduled Tribes (ST)	90	45	45
Literate Population	693	367	326
Illiterate Population	246	104	142

3.13.2 Demography and Socio-Economic Scenario:

As per census 2011, the significant demographic and socio-economic statistics of the district are summarized and given in table below:

Table 3.24

Demography & Socio-Economy

Name of villages	No. of House holds	Total Population	Male	Female	Child (0-6)	Literacy (%)		SC	ST	Total workers	Main workers	Marginal workers
						Male	Female					
Harsa Jandora	27	120	61	59	10	98.11	77.91	10	0	81	26	55
Nagar Chauki	201	939	471	468	112	89.73	77.99	296	90	455	255	200
Talap	27	114	56	58	5	82.69	64.91	0	0	69	21	48
Kaint	14	79	37	42	9	91.18	77.87	29	0	44	21	23
Khurwain	70	313	147	166	39	94.62	84.72	141	0	170	66	104
Ambhera Dhiraj	66	335	166	169	43	87.14	78.29	68	0	197	31	166
Dhamandri	295	1405	707	698	158	92.81	81.80	592	3	928	234	694

**Demography Census 2011*

Economic profile of the area:

- **Agriculture:** is the mainstay in the area with traditional cropping pattern of hill state. The land holdings vary from small, marginal and big land holders. The land is not plain everywhere in the area. In semi-hilly area contour farming is practised. The agriculture is mostly rainfed with some farmers having their own irrigation facility like tubewells/borewells and natural sources like 'Kuhals'. Govt. irrigation facilities which are not upto the mark is being upgraded by IPH Department. Canal irrigation is no-existent in the area.

- **Animal Husbandry:** Due to high cost of rearing, the livestock population is gradually decreasing in the area. Most of the people are meeting their daily milk requirement from reputed dairies e.g. Mother Dairy and Verka. However, Govt. of Himachal Pradesh has provided adequate veterinary facilities in the area.

- **Historical & Cultural Profits:** Although whole of Himachal Pradesh is dominated by religious perceptions having temples of local deities and other places of worship, the study area is devoid of protected monuments notified by ASI or the State Govt. Also, there don't exist any place of tourist attractions in the study area.

Basic Infrastructure Facilities:

- **Medical:** The study area us well equipped with primary health centre, community health centres, veterinary hospitals and the non-Govt. medical facilities. However, specialized medical facilities are either available at District Headquarter or some private hospitals. People are availing specialized medical facilities from the nearby town.

- **Water supply:** Whereas some households have their own drinking water arrangements as handpumps, most of the population is dependent on Govt. water supply by IPH Deptt. of State Govt. Some areas experience water shortage in acute summers where the supply is assured through water tankers.

- **Education:** Government Primary Schools are available in the area based on village population. In sparsely populated villages, common primary schools serve multiple settlements. High and Secondary Schools are available for village clusters. Government and private colleges, along with technical education institutions, are located in major towns of the district. The Government Senior Secondary School, Dhamandri is located approximately 3.0 km from the project site, while Shobhit ITI, Chalola is about 3.45 km away.

- **Transportation:** The area is well connected with roads & link road network. Both Govt. & Pvt. Bus service, taxi service is available in the area. People are using their own two wheelers & personal cars for short/long journey. However, there do not exist railway service in the area.

- **Communication facilities:** During the past decades, the area has undergone sea change in the communication network. Landlines are now virtually non- existent in the area. Majority of members of each household are having mobile phones. Post-offices/ Branch Post-Office area available in cluster of villages. However, internet facility is available in the area. However, courier service is not upto the mark. PCO are becoming extinct.

Conclusion:

Based on the perusal of socio-economic study of the area, it is seen that the women & children and aged people are not adequate in the area. Additionally, most villagers in the study area are non- workers due to which they are economically weak. The State Govt. must look into these aspects for socio-economic improvement of the area. However, the project authorities will contribute substantially to improve the economic conditions of surrounding village by way of providing direct & indirect employment to the surrounding population and the undulating of CSR/CER activities in the area.

3.13.3 TRAFFIC STUDY

Traffic & transportation is considered as an inevitable function of land use planning. Urban transport is an integral part of urban planning because apart from defining the form of a town, the smooth functioning and productivity of any urban center clearly hinges on the efficacy of traffic & transportation system. Since roads and streets or transport network are equated with arteries/veins of human body whereas traffic on roads/streets is comparable to blood flowing, so any blockage/ obstruction in this system acts like clot in the blood invariably leading to numerous complications.

The proposed mining site is located near the village Sanjhot. The site is approachable through Kaccha Road Dhamandri Sanjhot diverting LHS from village Sanjhot. The site is at a distance of approximately 13.0 kms from the nearest major city Una.

Total Production for 5 years	1,60,000 MT
Total Production for 1 year	32,000 MT
Total production for 1 one day	114 MT
Capacity of tipper	15 Ton
No. of tipper/trucks	7-8

An estimated 7-8 trucks will be required with @15-ton capacity each day for transportation of 32,000 MT of material in 280 working days/year and daily material transport shall be 114 MT.

3.14 DRAINAGE PATTERN

The adjoining area shows a dendritic type of drainage with the formation of gullies. Only small gullies pass beside the mining lease area. These small gullies drain into local Nalla and further drain into Swan River which is perennial stream of the area. It forms a part of the Satluj drainage system.

- **Altitude at the Mining Lease Area:**

The highest point of mining lease area is 494 m above mean sea level and lowest point is 438 m above mean sea level.

CHAPTER 4.0
ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

4.0 GENERAL

Prediction of impacts is the most important component in the Environmental Impact Assessment studies. Several scientific techniques and methodologies are available to predict impacts of developmental activities on physical, ecological and socio-economic environments. Such predictions are superimposed over the baseline (pre-project) status of environmental quality to derive the ultimate (post-project) scenario of environmental conditions. The prediction of impacts helps to minimize the adverse impacts on environmental quality during pre and post project execution. Generally, the environmental impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions.

The primary function of an environmental impact assessment is to ascertain the potential impacts of project on environmental components such as air, water, noise, soil, flora, fauna, land and Socio-economic and their magnitude during construction and operation for adoption of possible mitigation measure.

The Impacts of project are divided into two categories i.e., impacts during construction phase and impacts during operation phase. **Major project impacts will occur during operation phase as no construction stage is envisaged in this project.**

Environmental parameters considered for impact analysis during operation phase are: -

i. *Air Environment*
ii. *Water Environment*
iii. *Noise Environment*
iv. *Land Environment/ Landform and Topography*
v. *Soil Environment*
vi. *Ecology & Biodiversity*
vii. *Socio-economic Environment*
viii. *Solid/ Hazardous Waste.*
ix. *Occupational Health & Safety.*

4.1 AMBIENTAIR QUALITY

Impacts:

Opencast mining operations are generally prone to generation of high levels of PM10 and to a limited

extent SO2, NOx due to fossil fuel-based vehicles, machines. Air pollution mainly due to PM10, SO2 and NOx may result in irritation and inflammation of eyes and congestion of throat and infection in lungs. The respirable dust has serious impact on the health of the workers. Lung functions are impaired due to the both respirable and non-respirable dust particles. Chronic exposure leads to respiratory illness like asthma, emphysema, severe dyspnoea (shortness of breath) and bronchitis in extreme cases pneumoconiosis or the black lung disease of miners. The effect of dust may be harmful to the human health. The major contribution of air pollution is by opencast mining, such as excavation, loading and transportation etc. which will lead to short-term rise in the respirable particulate matter (PM10).

Mitigation measures

- Emissions inventory for SPM, RSPM, SO2, NOx shall be undertaken to satisfy the statuary requirements.
- Dust suppressions shall be done by water sprayers, avoiding overloads of transported vehicles, water spray on access routes.
- Transportation of material in tarpaulin covered vehicles to crusher site, and shall be carried out in day time only.
- Mining shall be done in a controlled manner.
- Plantation will be carried out on approach roads and in Lease boundary.
- The speed of dumpers plying on the haul road should limited to avoid generation of dust.
- Haul road shall be covered with gravels.
- Ambient Air Quality Monitoring will be conducted on regularly basis to assess the quality of ambient air.

Air Pollution Impact Prediction through Modeling:

- **Aermod Cloud** is an air dispersion-modeling package, which seamlessly incorporates the popular USEPA Models, ISCST3, ISC-PRIME and AERMOD into one interface without any modifications to the models. These models are used extensively to assess pollution concentration and deposition from a wide variety of sources.

- **Aermod Model:** The AMS/EPA REGULATORY MODEL (AERMOD) was specially designed to support the Environmental Regulatory Modeling Programs. AERMOD is a regulatory steady – state modeling system with three separate components;

  •AERMOD (AERMIC Dispersion Model);

  •AERMAP (AERMOD Terrain Preprocessor); and

  •AERMET (AERMOD) Meteorological Preprocessor.

The AERMOD model includes a wide range of options for modeling air quality impacts of pollution sources, making it popular choice among the modeling community for a variety of applications.

AERMOD requires two types of meteorological data files, a file containing surface scalar parameters and a file containing vertical profiles. These two files are provided by AERMET meteorological preprocessor program.

PRIME building downwash algorithms based on the ISC – PRIME model have been added to the AERMOD model;

Use of arrays for data storage;

Incorporation of EVENT processing for analyzing short-term source culpability;

Explicit treatment of multiple – year meteorological data files and the annual average; and Options to specify emissions that vary by season, hour-of-day and day-of-week.

Deposition algorithms have been implemented in the AERMOD model – results can be output for concentration, total deposition flux, dry deposition flux, and / or wet deposition flux. The model contains algorithms for modeling the effects of settling and removal of large articulates and for modeling the effects of precipitation scavenging for gases or particulates.

• ***Aermet***

In order to conduct a refined air dispersion modeling project using the AERMOD short term air quality dispersion model, it is necessary to process the meteorological data representative of the study area being modelled. The collected meteorological data is not always in the format supported by the model; therefore, the meteorological data needs to be pre-processed using AERMET program. The AERMET program is a meteorological preprocessor, which prepares hourly surface data and upper air data for use in the AERMOD air quality dispersion model. AERMET is designed to allow future enhancements to process other types of data and to compute boundary layer parameters with different algorithms. AERMET processes meteorological data in three stages and from this process two files are generated for use with the AERMOD model. A surface file of hourly boundary layer parameters estimates a profile file of multiple-level observations of wind speed, wind direction, temperature and standard deviation of the fluctuating wind components.

• ***Application of AERMOD:***

The AERMOD model with the following assumptions has been used to predict the cumulative GLC due

to emissions from the proposed activity:

- ➢ The stack tip down wash is not considered.
- ➢ Plume rise is estimated by Brigg's formula but the final rise is limited to that of mixing layer.
- ➢ Buoyancy induced dispersion is used to describe the increase in plume dispersion.
- ➢ Calm processing route is used by default.
- ➢ Complex terrain is used in computation.
- ➢ It is assumed that the pollutants don't undergo any physio-chemical transformation and there is no pollutant removal by dry deposition.
- ➢ Wash out due to rain is not considered.
- ➢ Receptors on that terrain with no flag pole have been considered.

- ***Atmospheric Stability:*** The stability class has been estimated using the hourly monitored wind velocity along with the other computed data.
- ***Mixing Heights:*** Due to non-availability of site-specific missing heights "Hourly Mixing Heights & Dissimilative Capacity of Atmosphere in India" published by Environment Monitoring & Research Centre, IMD, New Delhi has been referred for hourly mixing heights.
- ***Meteorological Data:*** The hourly ***meteorological*** data recorded at site is converted to the mean hourly meteorological data as specified by CPCB and the same has been used in the model. Hourly mixing heights are taken from the "Atlas of Hourly Mixing Height and Assimilative Capacity of Atmosphere in India" published by India meteorological department, 2008, New Delhi. The meteorological data recorded during study period continuously on wind speed, wind direction, temperature etc., have been processed to extract the data required for simulation by AERMOD using ***AERMET.***
- ***Dispersion Modeling Results:*** The 24-hourly average ground level concentration (GLC) values from proposed project have been computed for PM considering topographical featured around the proposed project and applicable ***stability*** classes. The predicted 24-hourly short terms Maximum Incremental Concentration values for PM2.5 from the proposed project are given in Table- 4.1. Corresponding plotted are shown in Figure 4.1.

Table-4.1

Predicted 24 hourly short terms Maximum Incremental Concentrations

Pollutants	Maximum GLC in µg/m3	Baseline concentration in µg/m3	Baseline Concentration after project implementation in µg/m3
$PM_{2.5}$	0.07	42.1	42.17

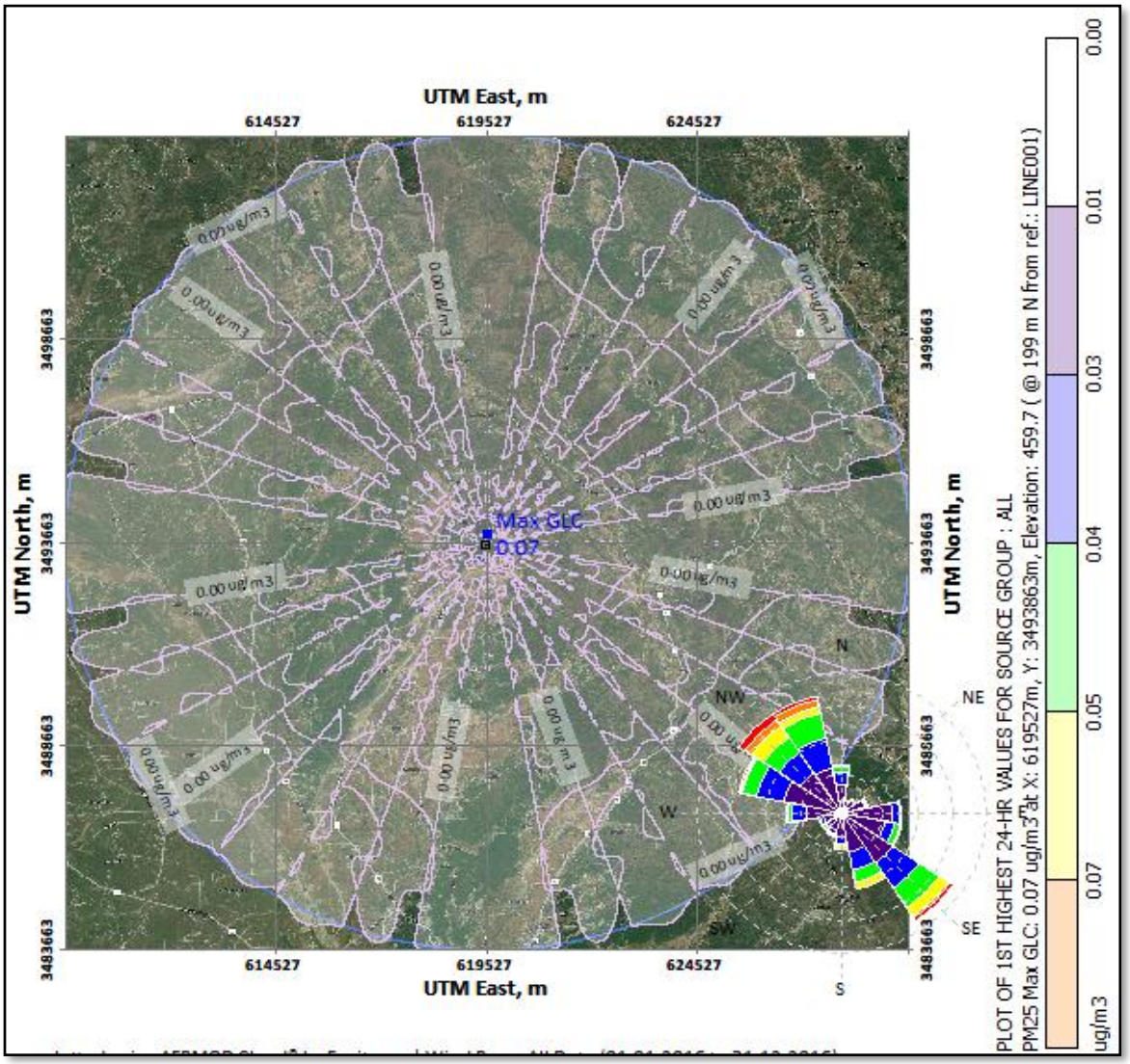
Predicted GLC's of the proposed project:

The modelling of PM2.5 has been done considering the worst-case scenario and it was seen that there would be marginal increase in the cumulative concentration of PM2.5. However, the cumulative concentration of PM2.5 does not exceed the NAAQ's standards.

It is predicted that the maximum contribution in GLC's, with unit's operation will be 42.17 µg/m^3 for PM2.5 at a distance of 199m from N direction. Since the mining is manual and no blasting is involved, therefore impact of the fugitive emission from the unit will be negligible. SPM level due to movement of vehicles will also be checked. The present max PM10 is 79.1 µg/m^3 and PM2.5 is 42.1 µg/m^3. There will be marginal increase in existing level of ambient air quality (PM2.5, which will be well within the permissible, limits i.e. 60ug/m^3.

Figure 4.1

Isopleths showing Air Quality Modeling



Conclusion:

All the activities related to mining e.g. excavation, loading, unloading & transportation which are contributing to air emissions load due to the proposed project has been taken into consideration. However, the increase would be marginal and will not exceed the threshold limit as per NAAQ's standards.

Mitigation measures:

The proposed project is anticipated to have very low/ insignificant impact on the ambient air quality based on the marginal increase in GLC. The following mitigation measures have been suggested to ameliorate the adverse impact, if any:

- The mining surface will be kept wet.
- The dump height during loading shall be manufactured just above the truck height.
- Truck/dumpers will not be overloaded.

- Regular water sprinkling on haul road to avoid dust generation.
- Strict speed levels will be enforced for transport vehicles.
- Water sprinklers will be installed while unloading at crusher site.
- Multiple transport routes depending upon wind direction will be adopted.
- Paved road from mining site to approach road.
- Tree plantation along haul roads, mining lease boundary and near settlement to reduce impact of dust on nearby villages.
- Transportation of minerals in tarpaulin covered vehicles & in day time only.

Additional Mitigation Measures:

- Every time the material is moved, PM emissions are increased. Hence, the use of temporary storage piles should be avoided.
- At the crusher site, the crushing and screening areas will be shielded to reduce wind speed and enclosing the site of dust generation.
- Wet suppression at crusher site.
- Reduction of unnecessary traffic on haul road.
- All disturbed areas are subjected to wind erosion. Therefore, vegetation should be provided on all waste stockpiles and berms. Distributed soil should be compacted and stabilized by vegetation.
- Reduction in frequency of disturbance.
- Implementation of comprehensive air quality monitoring programme.

4.2 WATER QUALITY

Mining operation shall be undertaken as per approved mining plan; hence, there shall not be noticeable effect on surrounding ground water resources due to mining. Damage in the water body, depends on its assimilative capacity. Since no water will be used in the mining operations, therefore, no waste water will be generated, thereby no impact on groundwater and surface water quality. Small amount of domestic waste water shall be treated in septic tanks and soak pits at crusher site before to put use for plantation.

Impact:

- The mining operations may impact groundwater hydrogeology and surface water regime and the impacts depends on the nature of material, hydrogeology and groundwater requirements.
- Groundwater contamination due to water table intersection.
- Surface water contamination due to waste water disposal.

Mitigation Measures:

- Mining operation will be undertaken as per approved mining plan; hence, there will not be noticeable effect on surrounding ground water resources due to mining.
- There shall not any generation of wastewater including domestic effluent at the mining site as the worker/employees shall use the toilets constructed at the site of the stone crusher. The sewage generated shall be treated in the septic tank and the treated sewage shall be used for irrigation of greenbelt developed in the premises of the stone crusher. As such there shall not be any impact of treated waste effluent on the groundwater quality.
- Since, there shall not be any discharge of wastewater in the water bodies, as such there is no likelihood of contamination of surface water quality.
- No overburden or loose sediments will be kept in the working benches particularly during monsoon season.
- There would not be any adverse effect on the ground water quality. The proposed mining shall be much above the water table. However, regular monitoring of quality in the existing hand pumps/tube wells in the vicinity would be carried out.

4.3 NOISE LEVEL

The proposed mining activity will be carried out mostly manually. Therefore, the primary impact anticipated is related to the movement of vehicles used for transporting the mined minerals. The mining site is located away from any habitation, and noise generated by mechanical equipment and vehicles will remain below the permissible limits prescribed by regulatory authorities. No blasting activities will be involved, ensuring that noise levels will not exceed acceptable standards

Impact of noise:

- Noise in the proposed mining area will mainly arise from mining equipment operation, material handling, and vehicle movement. Due to the open nature of hill slope mining, noise emissions will be intermittent and localized, occurring primarily during operational hours.
- Prolonged noise exposure from mining activities can adversely affect human health, causing issues such as high blood pressure, increased heart rate, respiratory stress, neurological disturbances (anxiety, fatigue), sleep disruption, and hearing loss, especially among workers without PPE. While noise from hill slope mining is generally moderate and localized, continuous exposure may impact worker health and disturb nearby residential areas or sensitive receptors.

Mitigation Measures

- Periodical monitoring of noise will be done so as to take corrective actions wherever needed.
- Speed of the vehicles in the mining area will be restricted.
- Proper maintenance of all vehicles & equipments will be carried out which will help in reducing generation of noise during operations.
- Plantation will be taken up along the approach roads which will minimize propagation of noise.
- Optimized scheduling of vehicle movement and material loading/unloading to avoid simultaneous high-noise activities.
- Unnecessary blowing of horns will be prohibited.
- Restricting mining and transportation activities to daytime hours to avoid disturbing nearby residents during night-time.

4.4 LAND ENVIRONMENT

The project area does not consist of any forest land. It does not consist of any human habitations. Land use plan of the mining lease area during pre-operational, operational and post operational is incorporated in the Chapter 2. During the course of mining, the land environment is likely to be impacted as under: -

- Change in the Topography of the Land / Land Degradation.
- Solid waste generation
- Soil erosion
- Impact on the Agricultural Practice at nearby area due to dust generation.

Mitigation measures

- The proposed mining activity is carried out in Hill- Slope, therefore the broken area will be reclaimed by systematic backfilling and rehabilitated by afforestation so that landscape of the area is improved.

- Mine waste will be backfilled into mined-out pits, followed by raising plantations over these areas to rehabilitate the land and prevent waste accumulation.
- Soil erosion will be controlled by constructing gully checks, check dams, and other soil conservation structures to reduce runoff and retain topsoil.
- Dust control measures such as regular water sprinkling, greenbelt development along haul roads, and controlled vehicle movement will be implemented to minimize dust emissions, thereby protecting nearby agricultural activities.

4.5 SOIL AND AGRICULTURE

The soil in the study area is moderately rich in both primary and secondary nutrients, making it suitable for agriculture. Since no waste material will be disposed of on agricultural land, mining activities are not expected to interfere with local agricultural operations. The predominant crops grown in the region include paddy, wheat, maize, gram, mustard, sugarcane, potatoes, and a variety of vegetables. Fugitive dust emissions from the mining activity are expected to be minimal and within permissible limits, posing no significant threat to the surrounding soil quality or vegetation. The project's environmental management plan will ensure that any potential impacts are well controlled. The anticipated impacts and proposed mitigation measures are outlined below:

Impacts:

- The removal of surface soil during mining disturbs the natural land cover, making the area vulnerable to wind and water erosion. Without proper management, exposed soil can be washed away during rains or blown off by wind, leading to degradation of land quality and reduced agricultural productivity in surrounding areas.
- Additionally, loss of topsoil disrupts soil structure and nutrient content, negatively impacting vegetation growth and local biodiversity. This erosion can also contribute to sedimentation in nearby water bodies, affecting aquatic ecosystems and water quality.

Mitigation Measures:

- To prevent soil erosion from runoff, proper garland drains will be constructed around waste dumps.
- Proper drainage management is also critical to avoid waterlogging and uncontrolled surface runoff.
- Areas identified for landscaping will be prepared before topsoil stripping, allowing the topsoil to be carefully removed and stored. This preserved topsoil will then be reused during the reclamation and rehabilitation of the mining site as part of the mine closure plan.
- These measures, combined with erosion control structures and progressive land restoration, will help maintain soil stability and promote ecological recovery.

4.6 ECOLOGY & BIODIVERSITY

Mining has the potential to affect biodiversity throughout the life cycle of a project, both directly and indirectly.

- ***Direct or primary impacts*** from mining can result from any activity that involves land clearance (such as access road construction, exploration drilling, overburden stripping or tailings impoundment construction) or direct discharges to water bodies (riverine tailings disposal) or the air (such as dusts or smelter emissions). Direct impacts are usually readily identifiable.
- ***Indirect or secondary impacts*** can result from social or environmental changes induced by mining operations and are often harder to identify immediately.

Table 4.2 gives some operational mining activities and associated aspects and impacts which need to be considered and table 4.3 gives the impact sand mitigation measures for biological environment.

Table 4.2: Mining activities with their aspects and biodiversity impacts

Activity	Aspects	Biodiversity Impact
Extraction	Land clearing	Loss of habitat, introduction of plant disease, siltation of watercourses
Blasting	Dust, noise, vibration	Smothering stomata, disturbance of fauna
Digging and Hauling	Dust, noise, vibration, water pollution	Disruption of watercourses, impacts on aquatic ecosystems due to changes in hydrology and water quality
Waste Dumping	Clearing, water and soil pollution	Loss of habitat, soil and water contamination, sedimentation, acid mine drainage
Roads and rail	Land clearing	Habitat loss or fragmentation, waterlogging upslope and drainage shadows down slope
Water supply (potable or industrial)	Water abstraction or mine dewatering	Loss or changes in habitat or species composition
Air emissions	Air pollution	Loss of habitat or species

Table 4.3: Anticipated impact and mitigation measures for biological environment

Impact Predicted	Mitigation measures
Disturbance to free movement / living of wild fauna viz. Birds, Reptiles etc.	• Noise produced due to vehicular movement for carrying sand materials will be within permissible noise limit.

	Higher noise level in the area may lead to restlessness and failure in detection of calls of mates and young ones. • If wild animals/birds are noticed crossing the core zone, they will not be disturbed at all. • Noise level will be maintained within permissible limit (silent zone-50dB (A) during day time or residential zone 55dB (A) as per Noise Pollution (Regulation and Control) Rules 2000, CPCB norms.
Impact on forest resources, economically important plants, medicinal plants and threat to rare, endemic and endangered species	• Regeneration of rare and endangered plants of economic importance including medicinal plants.
Impact on Agriculture	• There will be no impact on the agriculture. Dust generated will be suppressed during mining operation at mining site as well as during transportation will be suppressed by sprinkling.
Impact on land use and vegetation	• No tree cutting will be allowed.

Summary of Overall Impacts

The mining activity doesn't involve any blasting & drilling activity; therefore, the project will not disturb habitat of any flora & fauna. Since there is no liquid waste, so the aquatic life in the area is not likely to be affected in any manner. Thus, the existing ecology & biodiversity of the area shall be maintained & will not be affected.

The main impacts will be during the mining activities with respect to Air, Noise, Land, Biological and Socio-economic. Following is the summary of overall significant impacts related to environmental components.

Environmental Attributes	Major Impacts
Air Environment	Fugitive emission due to excavation & screening vehicular emission due to transportation and operation of machineries, marginal damage of vegetation, health effects.
Noise Environment	Increase in Noise levels due to, excavator and dumpers.
Water Environment	Sewage generation, sedimentation, no waste water generation due to mining activities, however rainwater will be harvested in the mine excavated ponds and will be used for sprinkling & plantation.
Land Environment	Acquisition of land, loss of land use / land cover area, change in soil quality, generation of overburden, however positive impact due to plantation in the mine lease area and green belt around the mine lease area.
Biological Environment	Cutting of trees, loss of vegetation, migration of schedule fauna, disturbance to fauna due to noise generation and trenching positive impact due to plantation in and round mine lease area and along the road side.
Socio- economic Environment	Disturbance to the habitations due to mining activities, No R & R, influx of people, however positive impacts due to enhancement of economic benefits through allied industries, improvement in quality of life and employment etc.

Major impacts are described above; there will not be any irreversible damage due to the project. However, assessment of impacts with respect to all the environmental components is made and measures are suggested. **CSR/CER** scheme as per project specific requirement according to the project economic benefit will be implemented and sufficient budgetary provision will be made available and implemented.

4.7 DEMOGRAPHIC AND SOCIO-ECONOMIC GROWTH

The villages surrounding the proposed mining site are sparsely populated. The project does not encroach upon any residential areas, nor is any significant population influx expected. As there is no displacement involved, rehabilitation is not required. Approximately 28–30 workers will be employed, primarily from the local population, resulting in no noticeable demographic change in nearby villages or towns. The project is not expected to impact the health or daily life of local residents. However, the project is anticipated to generate positive socio-economic benefits, including employment generation and support to ancillary services, which will contribute to local economic development.

Potential benefits and challenges include:

- ✔ Employment for locals, improved livelihoods, and increased demand for goods and services, benefiting local businesses.
- ✔ Minor risks such as increased pressure on water and transport infrastructure and land use conflicts, which can be managed through proper planning and community engagement.

To ensure that the Hill Slope mining of sand, stone, and bajri results in sustained and inclusive socio-economic benefits, the following mitigation measures are recommended:

- ✅ Local Employment Preference: Prioritize the hiring of workers from nearby communities to enhance local economic development and minimize the risk of social disruption.
- ✅ Skill Development Programs: Implement vocational training and skill development initiatives to improve the capabilities of the local workforce and increase their long-term employment prospects.
- ✅ Community Engagement: Maintain regular and transparent communication with local communities to address concerns, gather feedback, and involve them in project-related decision-making processes.
- ✅ Occupational and Community Health: Promote strict occupational health and safety measures for workers and support local health awareness and wellness programs to benefit the broader community.
- ✅ Ongoing Social Impact Monitoring: Conduct periodic assessments of the project's social impact to ensure community well-being and proactively resolve any emerging issues.

4.8 SOILD & HAZARDOUS WASTE:

Hazardous waste: No hazardous waste will be generated from this mining activity.

Solid waste: The Hill slope mining project for sand, stone, and bajri is not expected to produce solid waste, as all excavated materials will be processed at the crusher site. Additionally, approximately in 5 years, 86277 metric tons of mine waste such as silty sand & top soil, produced during mining, The waste material will be partly used for the maintenance of road and part of this mineral can be stacked at proper place for

utilization of this material during road construction or some other use as a filling material. The top soil will be spread over the benches developed after mining for plantation purpose. If not managed properly, this topsoil could:

- Disrupt local flora and fauna by accumulating in unmanaged piles,
- Alter landforms, reducing stability and future land usability,
- Become susceptible to wind and water erosion, potentially causing sedimentation in nearby water bodies and degrading surface water quality.

4.9 OCCUPATIONAL HEALTH AND SAFETY

Impact:

- The primary health hazards are dust and noise exposure. Dust generated during excavation, crushing, and transportation can lead to respiratory problems such as chronic bronchitis, silicosis, and other lung-related ailments among workers and nearby residents.
- Prolonged exposure to high noise levels from machinery and vehicle movement may cause hearing impairment and increased stress levels.
- Additionally, dust can cause eye irritation and other visual discomforts. Without proper control measures, these hazards can significantly impact the health and well-being of workers and communities close to the mining area.

Mitigation measures:

- All workers will be provided with appropriate Personal Protective Equipment's, including face masks and side-covered safety glasses to reduce dust inhalation and eye irritation.
- Ear plugs will be provided to protect against noise-induced hearing loss. Regular health check-ups, including chest X-rays, ECGs, and vision tests, will be conducted to monitor workers' health, with necessary medical treatment provided as needed.
- These health assessments will be documented and reviewed annually to ensure ongoing occupational safety and well-being. Additionally, dust suppression measures like water spraying and equipment maintenance will be implemented to minimize dust generation, and noise control practices will be followed to reduce overall exposure.

Occupational health surveillance programme: Occupational health surveillance programme will include the following facilities:

A. They will have Occupational Health Centre with emergency handling facilities.

B. The occupational health surveillance of the employee shall be done on a regular basis and records of the same will be maintained as per the Mining Act.

CHAPTER – 5.0

ANALYSIS OF ALTERNATIVES

5.0 General:

The consideration of alternatives is an essential component of the EIA process, as per the requirements outlined in the EIA Notification, 2006. During the scoping stage, alternatives may be explored or refined based on key environmental and socio-economic issues. A comparative analysis of alternatives helps identify the most suitable and sustainable approach to achieving project objectives while minimizing adverse environmental impacts and ensuring cost-effectiveness.

5.1 Site Alternative:

This project involves the extraction of sand, stone, and bajri from Hill slope. As mining is inherently site-specific and dictated by the geological availability of mineral deposits, alternative site options are not applicable in this case. The proposed site has been selected based on the availability of mineable Hill slope area, accessibility, and minimal environmental sensitivity.

5.2 Mining Technology Alternative:

The proposed mining method is manual open-cast mining, which is environmentally sustainable and suitable for small-scale Hill slope mining. The key aspects of the adopted technology include:

- All materials, including sand, stone, and bajri, will be extracted manually from Hill slope mining area.
- No heavy machinery, drilling, or blasting will be employed, ensuring minimal environmental disturbance and noise generation.
- Manual extraction of sand, stone, and bajri during the non-monsoon season.
- Extraction and loading of material will be done manually and transported via tractor, trolleys or tippers.
- Riverbanks will remain undisturbed, and natural flow will not be obstructed.
- Temporary haulage routes will be maintained within the lease area without affecting vegetation or natural drainage patterns.

CHAPTER – 6.0

ENVIRONMENTAL MONITORING PROGRAM

6.0 PRELUDE

Assessment of environmental and social impacts arising due to implementation of the proposed project activities in the technical part of EIA process. An essential element of this process is to develop measures to eliminate, offset or reduce impacts to acceptable levels during implementation and operation of projects. The integration of such measures into project implementation and operation is supported by clearly defining the environmental requirements within an Environmental Management Plan (EMP).

6.1 ENVIRONMENT MONITORING PROGRAM

An environmental monitoring program is required for sustenance of the project and maintaining the environment quality of the area. Resultant information shall be used in environmentally responsible management. Such management can be aided by specific data on various environmental parameters such as water, soil and air. Current monitoring consideration is focused on the implementation of mitigation measure.

6.2 OBJECTIVE OF MONITORING PLAN

The basic objective of implementing a monitoring plan on a regular basis is as follows:

- Know the pollution status within the plant and its vicinity.
- Generate data for corrective action in respect of pollution.
- Examine the adequacy of pollution control system
- Assess the Environmental impacts

6.3 SCHEDULES FOR ENVIRONMENT MONITORING

As no project can succeed unless it is monitored at regular intervals & results analyzed. Keeping this requirement in view an elaborate Monitoring programme has been developed for this project. Regular monitoring of all significant environmental parameters will be carried out to check the compliance status vis-à-vis the environmental laws and regulations.

The objectives of the monitoring will be as follows:

- To verify the results of the Impact Assessment Study with respect to the proposed projects.
- To study the trend of concentrated values of the parameters, which have beenidentified as critical and then planning the mitigating measures.
- To check and assess the efficacy of pollution control equipment.

- To ensure that any additional parameters, other than those identified in the impact, do not turn critical after the commissioning of proposed project.

Table: - 6.1 Environmental Monitoring Program

S. No.	Item	Parameters to be checked	Frequency
1	Ambient Air	RSPM, SPM, NO_X Silica & SO_2	Every six months
2	Vehicles	PUC	Every Quarter
3	Noise Level	dB (A)	Once in a year
4	Ground water	As per IS 10500	Once in a year

All the above observations will be compiled and documented to serve the following purposes.

- Identification of any environmental problems that are occurring in the area.
- Initiating or providing solution to those problems through designated channels and verification of the implementation status.
- Controlling activities inside the project, until the environmental problem has been corrected.
- Suitably responding to emergency situations.

6.4 Environment Management Cell

The Environment Management Cell shall include:

- Representative of Management (Head of Environment Cell)
- In charge Maintenance Department
- A representative of Environmental Consultants

The cell shall be constituted immediately at the start of the project so that appropriate actions to protect the Environment are taken from the very beginning. All actions taken by the cell shall be documented.

CHAPTER–7.0

ADDITIONAL STUDIES: DISASTER MANAGEMENT

7.1 PUBLIC CONSULTATION:

Present report is for the purpose of public consultation only. The details and proceeding of public hearing will be incorporated in the final report, which will include the following:

- Public hearing proceedings.
- Public Hearing Notice Published in prominent newspapers.
- Photographs of Public hearing.
- Action plan for the issue raised during public hearing.

7.2 IDENTIFICATION OF RISK & HAZARDS:

The mining of sand, stone and bajri will be done manually so, there will not be any major risk hazard associated with the process. The possible scenarios selected for this project are as below:

- Inundation / Flooding/ Erosion
- Accident during sand loading, transporting and dumping.
- Accident due to vehicular movement.

7.3 INUNDATION/FLOODING/EROSION:

The consequences of flooding/ inundation/ erosion are catastrophic or fatal. The likelihood of occurrence of flooding is occasionally possible. As per mining plan, the mining work will not be carried out during monsoon season.

7.3.1 ACCIDENT DURING SAND LOADING, TRANSPORTING AND DUMPING:

The consequences of this scenario are minor which may be taken care with first aid care. This will not lead to any day loss. The likelihood of occurrence can be regular due to carelessness of the worker.

7.3.2 ACCIDENT DUE TO VEHICULAR MOVEMENT:

The consequences of this scenario are moderate and may result in hospitalization and day loss. The likelihood of occurrence is occasionally possible.

7.3.3 RECOMMENDATION FOR RISK REDUCTION:

Measures to prevent Inundation/Flooding:

Inundation of flooding is expected and beneficial for these mines as during this time only the mineral reserve gets replenished.

1. During monsoon months and heavy rains, the mining operations are ceased.

2. There should be mechanism/warning system of heavy rains and discharges from the upstream dams.

Measures to Prevent Accidents during Loading:

- The truck should be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The loading should be done from one side of the trucker trolley only.
- The workers should be provided with gloves and safety shoes during loading.
- Operations during daylight (9: 00 a.m. to 6: 00 p.m.) only.
- Stockpiling of harvested material on the river bank will be avoided.
- Necessary first aid kit will be always kept in the mine site.

Measures to Prevent Accidents during Transportation

- Vehicles will be periodically checked and maintained in good condition and must not be overloaded.
- Overloading will not be permitted;
- To avoid danger of accident, roads and ramp near embankment will be properly maintained.
- The truck will be covered and maintained to prevent any spillage;
- The maximum permissible speed limit will be ensured;
- The truck drivers will have proper driving license.

7.4 DISASTER MANAGEMNT PLAN:

The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation and restoration of production. For effective implementation of the Disaster Management Plan, it should be widely circulated and personnel training should be given.

Objectives:

- Safeguard other people
- Minimize damage to property and the environment
- Initially contain and ultimately bring the incident under control
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency

7.4.1 PREPAREDNESS PLAN:

Natural Disasters:

(a) Cyclone and Flood:

- When warning of cyclone or heavy rains is received from Local Administration, the Commander shall alert Staff to be prepared.

- All the equipment should be withdrawn from mine and kept in a higher site.
- The Quarry Manager may advise to leave the staff depending on security of situation.

(b) Earthquake:

- When earthquake hits, all persons shall be encouraged to run out in the open areas designated as Assembly Points.
- All the electrical supply should be disconnected by the electrical department.

7.5 SOCIAL IMPACT ASSESSMENT:

7.5.1 INTRODUCTION

Socio-Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area during a given period. The study area consists of core area where the project is located and a buffer area encircling the project area with a radius of 10 kilometers from the periphery of the core area. The Socio-Economic Impact Assessment focuses the effect of the project on social and economic well-being of the community. The impact may be direct or indirect. Further, the impact may be positive or negative.

7.5.2 OBJECTIVES OF SEIA:

The prime objective of the current study is to assess the impact of the proposed Mining Project on socio-economic characteristics of people living in the neighborhoods. Further, it is to be established whether the impending impact would be direct or indirect. Furthermore, it is to be examined whether the said impact would be positive or negative.

7.5.3 SCOPE:

The Scope of the study is as follows:

a) To collect baseline data of the study area.

b) To comprehend socio-economic status of the people living in the study area.

c) To assess probable impact of the project on social and economic aspects in the study area.

d) To measure the impact of the project on Quality of life of the people living in the study area.

e) To ensure sustainability of positive impact.

f) To suggest mitigation measures and agency responsible for taking action in case of adverse impact.

7.5.4 SOCIO-ECONOMIC IMPACT OF THE PROJECT:

Impact on Demographic Composition

There will not be hardly make any difference in the demographic composition of the study area as the additional employment it envisages to create will be met locally to the maximum extent. Hence, the chances of in-migration of people from outside the study area are remote. Accordingly, there will be no variation in the total population of the study area including that of sex ratio, when the mine starts operating.

Employment Opportunities

The proposed Project will provide employment to the local people. The number of workers to be deployed in the mining project will depend upon the quantity of minerals to be extracted from the mine by the lease holder. Both the skilled and the unskilled workers will be recruited locally. It has estimated that around 28-30 people will get direct employment for this mining project. It is a positive impact of the project since it is providing employment opportunities to the local people. The project will not affect the vulnerable groups of people.

Increased Supply of minerals in the market

Both Government departments and private developers have taken up construction of roads, bridges and buildings in a big way. Hence, the demand for stone & bajri is ever increasing with the growth of the infrastructure development in our country. The requirement for the building materials is always high, there is already an acute shortage of sand in the market, and the construction industry is the main sufferer. It is a critical component of concrete mixture. It is also used for filtering waste. With the commencement of the proposed mining project the supply of stone & bajri will increase at least in the local market.

Impact on Road Development

Movement of trucks and other vehicles to and from the mining site is expected to increase, when mining will start. The existing roads connecting the quarry with the national highways are connected by metalled and unmetalled roads. Hence, there is need for road maintenance and repairing regularly in the mining area. Further, there are risks of accidents during loading of extracted minerals into tractors-trolleys and transportation to markets for sells. However, accidents can be avoided by taking due care and precautions.

Impact on Health

There are no chances of occurring diseases, due to manual mining of sand. Sand is nontoxic However, sand-using activities such as sand blasting require precautions since it create respiratory problems among mine workers. Excessive inhalation of sand is a serious health concern. To avoid respiratory problem from sand necessary protection should be taken. Few safety measures are outlined below:

(i) It is ensured that health and safety of all the employees at work will provide. Efforts will be made to provide and maintain a safe work environment and ensure that the machinery and equipment in use is safe for employees. Further, it will be ensured that working arrangements are not hazardous to employees.

(ii) The first aid treatment reflects the hazards associated with the mining of sand, stone & Bajri. The first-aiders will be well trained in handling patients working in the above Mining Project.

(iii) For all mine workers regular health examination will be made compulsory. Treatment for respiratory diseases or asthma, skin diseases, lung function test (pre and post ventolin), Audiograms, Chest X-ray etc., as required will be given.

(iv) To meet the medical needs of the mine workers tie-up with nearest hospitals will be made. This will ensure timely medical aid to the affected persons.

Conclusion

The project will provide employment to local people who are in search of the same. The granting of Environment Clearance to the project will make mining of Sand legally valid and it will generate revenue for the state. With the implementation of the project there will be increase in the employment opportunities for the local villagers. The study area is still lacking in health and educational facilities. It is expected that same will improve to a great extent with opening of the project and associated activities. Also, proposed CSR activity will improve the socio-economic status of the villagers of the study area

CHAPTER-8.0
PROJECT BENEFITS

8.0 PRELUDE

The proposed project is mining of stone and bajri from the Hill Slope, which will have no major impact on surrounding environment. The proposed activity shall provide raw material to stone crusher there by boosting production of construction material. This will bring overall improvement in infrastructure development and economic growth of the area.

8.1 EMPLOYMENT POTENTIAL:

The mining activity will provide direct and indirect employment to 28-30 locals (mining, transportation, trading and other allied activities) which will improve socio- economic status of the area in terms of infrastructure development and improvement in economic status.

8.2 IMPROVEMENT IN THE PHYSICAL INFRASTRUCTURE:

The proposed stone and bajri mine will have numerous induced impacts on society such as growth in schools, hospitals, hotels, resorts, transport etc. It will also attract other entrepreneur to establish their venture in the region.

8.3 IMPROVEMENTS IN THE SOCIAL INFRASTRUCTURE:

The social infrastructure like religious places (temple, mosque, church, gurudwara); marriage homes, bus stations, railway stations, play grounds will be improved.

8.4 OTHER TANGIBLE BENEFITS:

The other tangible benefits include metrics and improvements demonstrating process and system cost savings, compliant inspections and customer audits, faster product approvals and manufacturing throughput, less rejected material, reduced nonconformance issues, and more efficient continuous improvement and project implementation. Intangible benefits include improved staff morale, faster, more accurate transparent decision making, less employee turnover, increased staff accountability, and an enhanced culture of quality throughout the organization.

8.5 LITIGATION AND PENDING CASES:

Unit is not engaged in any litigation and no case pending in the court of law.

8.6 CORPORATE ENVIRONMENT POLICY:

The promoters of the project are well aware of issues and concerns regarding environmental matters pertaining to the project. The proponent will have well established administrative set up to deal with the environmental issues and ensuring the compliance of statutory norms and EC conditions as per following line diagram.

8.7 CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER):

For fulfilling the social responsibility, Items wise detail and time bound action plan shall be chalked out based on the public consultation issues and the representations of surrounding villages. The same shall be submitted along with Final EIA report. In addition to issues which may crop up during public hearing the following social activities have been planned related to education, social causes, healthcare & environmental.

- Awareness plan on girl's education.
- Spreading legal awareness amongst people and this advantages section of society about theirrights & remedies available.
- Formation of a task force of volunteers to educate people, regarding judicious use of waterresources.
- Green belt development on village common land in association with concerned villagePanchayat.
- Promotion of sports activities in nearby village.
- Development of crematorium in one village of study area.

Budget for Corporate Environmental Responsibility (CER):

Subject to Environment Clearance requisite amount against the CER activities will be deposited in the account of Directorate of Environment, Science & Technology (DEST), GoHP for which the Director (DEST) will devise a plan in consultation with project proponent.

CHAPTER – 9.0

ENVIRONMENTAL COST BENEFIT ANALYSIS

Minor Mineral means building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes, boulder, shingle, chalcedony pebbles used for ball mill purposes only, Lime shell, Kankar and limestone used in kilns for manufacture of lime used as building material, Murom, brick-earth, fuller's earth bentonite, road metal, rehmatti, slate and shale used for building material, quartzite and sand stone used for purposes of building or for making road metal and household utensils. Minor minerals are mainly consumed by infrastructure & housing industries and development. Whereas sand and Bajri is directly used for all construction works. Boulders are consumed by stone crushers and manual crushing operations for use in roads construction etc. Virtually there is no construction or infrastructure building work is possible without these minor minerals, hence the same can be assumed as back bone of the infrastructural growth of India.

9.1 ESTIMATED PROJECT COST:

Total project cost will be Rs 25,00,000/- or Twenty five Lakhs only/-.

9.2 PROMOTION OF SOCIAL & ECONOMIC STATUS:

The project will contribute to the economy and social development of the area. It will provide direct employment to about 28-30 persons and indirect employment to many more.

The company has shown willingness to provide medical facilities to employees, their families and also to villagers as per scope of their economical means.

Conclusion:

The management will recruit the semi-skilled & unskilled workers from the nearby villages. The project activity and the management will definitely support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The company management will contribute to the local schools, dispensaries for the welfare of the villagers. Green belt development / Plantation will be taken up in the vicinity of river banks, along the approach roads and around Govt. buildings schools.

CHAPTER -10

ENVIRONMENT MANAGEMENT PLAN

10.0 INTRODUCTION:

Environmental management plan (EMP) describes the administrative aspects of ensuring that mitigation measures are implemented and their effectiveness monitored, after grant of EC. It consists of various policies, control measures etc. for abatement of critical environmental impacts arising out of the proposed project. Mitigation measures are proposed on the basis of identified impacts. Further a suitable environment management plan will be introduced in the project to implement and practice measures to protect and enhance the quality of environment. The EMP is only as effective as its implementation. An appropriate environmental management strategy is developed and presented in the form of an EMS. It is the responsibility of the project proponents to control the utilization of resources and discharges of waste by adopting suitable control measures in the factory to avoid adverse effects of industrial activities on the environment and in turn to enhance the quality of the environment.

10.1 AIR ENVIRONMENT:

Dust is the main air pollutant generated during mining. The air-borne particulate matter generated by mining of minerals, handling of minerals and transportation. The emission of Sulphur dioxide (SO_2) and oxides of nitrogen (NOx) from diesel operated excavation/loading equipment and plying of vehicles are other set of air pollutants.

The sources of air pollution in the study area are envisaged as follows:

- Dust and gaseous emissions due to mining operation and loading of minerals.
- Dust and gaseous emissions due to movement of transport vehicle.

The nature of mining operation is such that complete elimination of dust from the mining process will not be possible. ***However, some preventive measures as given below will be taken:***

- Water sprinkler of adequate capacity will be used for water sprinkling on haul roads and the approach road. Haul road sprinkling will be continuous through the working of mine to ensure effective dust suppression.
- Proper maintenance of transport vehicles.
- Avoiding overloading and enforcing speed limits of dumpers.

10.2 WATER ENVIRONMENT:

Impact of water pollution & mitigation measures:

Water required for drinking; dust suppression & plantation is estimated as 5.0 KLD which will be sourced

through water tankers. No waste water is generated due to mining operation. Sanitary wastewater will be discharged to septic tank.

Since, no mining waste will be disposed outside the mining lease, hence there will be no impact of mining on surface water regime. Thus, there is least possibility of siltation in natural streams and reduction of vertical percolation.

Mitigation measures:

Garland drain will be made around the waste dumps and the rain water shall be collected in garland drain and allowed to settle before discharge into the natural discharge systems.

- For domestic waste water, septic tank with soak pit will be provide. Discharge from the soak pit if any will be used in plantation.

Impact of water pollution & mitigation measures:

Mining is proposed above groundwater table, thereby no intersection of groundwater. There will not be any impact on the quality & quantity of groundwater. There is sufficient gap between the proposed working upto conceptual and groundwater table & groundwater will not be encountered in the working at any stage.

Mitigation measures:

Mining is planned to above the groundwater table. The rainwater in season will settle in the bench leading to recharging of groundwater.

10.3 NOISE ENVIRONMENT:

Impact of noise pollution & mitigation measures:

Ambient noise levels in and around the mine indicate that the noise level was within the permissible limits. The proposed project may increase the work zone and the ambient noise levels to some extent. The proposed mining will be semi-mechanized open-cast mining involving excavation and transportation of minerals. The impact of mining will be mainly on the operating personnel and the persons working nearby and not much on the surrounding. The noise may also disturb the nearby fauna forcing them change their habitat. The following preventive measures will be taken:

Mitigation measures:

- Deployment of low noise equipment & machinery.
- Diesel powered machinery which is major source of noise in open -cast mining will be properly maintained.
- Protective devices such as earplugs/muffs will be provided to workers, working in the vicinity of high noise areas.

- Plantation around the lease boundary.

10.4 WASTE MANAGEMENT:

There will be generation of silty sand and top soil as mine waste. Top soil will be separately stored and used for plantation. Mine waste will be separately stored and stabilized. A parapet wall & garland drain will be constructed around the waste dump.

Mitigation measures:

- Stabilization of dump with the top soil and tree plantation.
- Garland drains around the dump shall prevent under wash of dump by hydrostatic pressure wo be developed by surface water and control wash outs and collapse.

Daily emissions from transportation:

The vehicles used for mineral transportation are evaluated to quantify the emissions from transportation on daily basis. The evaluation is based on the emissions factors for heavy diesel vehicles as prescribed by CPCB. The daily emissions are quantified from the project during operation phase is provided below:

Daily emissions from transportation during operation phase

Material Transportation in TPD	No. of trucks required per day	Distance of mining site from stone crusher (in Km)	Emissions due to transportation (Kg/day)			
114	8	3	PM	CO	NOx	HC
			0.029	0.14	0.22	0.08

- **Emission factors in g/km: PM = 1.24, CO = 6.0, NOx = 9.3 and HC = 0.37**
- **The meagre quantity of emissions will be dissipated to the atmosphere resulting in insignificant impact on air quality.**

Source: Air Quality Monitoring project - Indian Clean Air Programme (ICAP) Emission factor development for Indian Vehicles sponsored by CPCB.

10.5 OCCUPATIONAL HEALTH AND SAFETY OF WORKERS:

The major health hazards in a mining unit are dust & noise. Accidental rolling of stones along slopes could also be a hazard in the working area. Following mitigation measures will be provided:

1. Dust

- All workers will be provided Personal Protection Equipment.

- Face masks and side covered glasses will be provided to all workers.
- Frequent check-up of the workers will be done which shall, include chest X-ray, ECG & vision testing. Necessary treatment shall be provided wherever required.
- All checkups will be documented and reviewed monthly for occupation health and safetyof the workers.

2. Noise

- Since mining operations are manual. The noise in the working area is not of significant levels. However, ear plugs will be provided to all workers in the area.
- Audiometric test of the workers shall be done regularly & medical health provided wherever required.

3. Accidental Rolling Down of Stone

Since the mining is carried out by preparing 6 X 6 meters (Height X Width) benches. There is little likelihood of rolling stones coming into the mining pit. However, pits slope of 45 ℃ will be maintained.

10.6 ECOLOGICAL ENVIRONMENT:

Impacts of Ecology & Biodiversity and Mitigation Measures:

No National Park, Wildlife Sanctuary, Biosphere Reserves, Tiger Reserves or Elephant corridor etc. is present within 10 km of mine lease area.

Details of species present in 10 km buffer has been given in the report. No endemic and endangered species are present in the lease area which are expected to loss during mining operation. However, the proponent is conscious of preserving biodiversity of area and the following preventive measures will be taken.

- Transportation of minerals in covered vehicles to avoid dust generation and the periphery of lease area.
- No waste water discharge & hence no impact due to effluent discharge.
- Noise which cannot be altogether eliminated will be taken care of by undulating mining in day time only.
- Regular water sprinkling on haul roads.

10.7 SOCIO-ECONOMIC ENVIRONMENT:

The impacts are varied and may be both positive & negative:

Positive impact:

- The project does not involve rehabilitation & resettlement.
- Direct employment to locals & indirect to the region.
- Indirect benefits by way of ancillary & auxiliary works.
- Minimum burden on existing infrastructure.

Adverse impacts:

There is likelihood of adverse impact on the surrounding population due to fugitive dust emissions & noise generation. However, the mine will adapt effective control system for all the identified sources of emissions.

Mitigation measures for Socio- economic & environmental safety:

- Awareness program shall be arranged as health, hygienic & sanitation.
- Periodic health checkup camps, distribution of medicine & other medical facilities to the surrounding villagers.
- Organization of job-oriented training courses.
- Awareness campaign towards environmental protection & need for water conservation.
- Awareness of first- aid facilities at work place.
- Sufficient supply of potable water.
- Provision of sanitation facilities and their upkeep.

10.8 BUDGET ALLOCATION OF ENVIRONMENT MANAGEMENT PLAN:

Details of expenditure on environment is given in table 10.1

Table: 10.1

Expenditure on Environmental Measures

S. No.	Title	Capital Cost (Rs. In Lacs) for 5 years	Recurring Cost (Rs. In Lacs)	Time
1.	Air pollution control- Management of haulage road including water sprinkling with the help of tankers	6.0	0.50	Twice a day & as per requirement
2.	Green belt development (Cost of plantation & maintenance)	12.0	1.0	As per local Forestry Department
3.	Waste management.	--	1.0	As per approved mine plan

4.	Testing of air, water and noise parameters as per norms of HP Pollution Control Board.	----	0.80	As per EC/consent conditions
5.	Occupational health measures- Provision of PPE, first aid and other miscellaneous.	2.0	2.0	As per Factory Act
6	Retaining structures & Crate wires (176 meters in length and 1.5 meters in height and 1.0-meter width have been proposed along the entire length of lease and the same will be raised in phased manner)	15.0	1.0	As per approved mine plan
	Total	**35.0**	**6.3**	

Conclusion:

All possible environment aspects have been adequately assessed and necessary control measures have been formulated to meet statutory requirements. Thus, continuation this project will not have any appreciable negative impacts.

CHAPTER-11
SUMMARY AND CONCLUSION

11.0 INTRODUCTION:

Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher Village & P.O. Dhamandri, Tehsil & District Una, H.P. has been issued "Letter of Intent" for grant of mining lease vide letter No. Udyog- Bhu (Khani-4) Laghu- 460/2024-6084 dated 10.10.2024. for extraction/ collection of sand stone & bajri from Hill slope over an area measuring 02-47-13 Hectares bearing Khasra nos. 596 & 599 (Private Land), falling in Mauza & Mohal Sanjhot, Tehsil & District Una, State-Himachal Pradesh. Based on mining plan prepared by a registered Geologist and subsequently approved by the Industries Department.

As per MoEF, New Delhi Gazette dated 14th September 2006 and amended thereof, the proposed mining project is categorized as category 'B1'.

11.1DETAILS OF MINING PROCESS & LOCATION:

Table No 11.1: Details of Mining Process & Location

Particulars	Details
Name of the project	Extraction of stone & bajri by Sh. Bhupinder Thakur, Prop: M/s Shiva Stone Crusher
Type of project	Mining of stone & bajri
Location	Khasra nos. 596 & 599 (Private Land- Hill Slope) over an area measuring 02-47-13 Hect. situated in Mohal/Mauza Sanjhot, Tehsil & District-Una, State-Himachal Pradesh.
Lease Area Co-ordinates	**Pillar No.** / **Latitude** / **Longitude** **P1** / 31°34'25.61"N / 76°15'30.30"E **P2** / 31°34'23.67"N / 76°15'30.71"E **P3** / 31°34'23.75"N / 76°15'40.10"E **P4** / 31°34'26.05"N / 76°15'40.72"E
Elevation (Altitude at origin)	Lowest- 438 m above MSL Highest- 494 m above MSL
Land Type	Private land -Hill Slope
Total Lease Area	02-47-13 Hectares
Products	Stone and Bajri

Capacity	Approx. 32,000 MT/Year or 1,60,000 MT over a period of five years.
Bench Level	6 X 6 meters (9 nos.)
Method of mining	Manual
Working Days	280
Mine waste (Silty sand & Top Soil)	Approx. 17255 MT/year (86277 MT over a period of five years).
Water consumption	5.0 KLD
Source of water supply	Borewell at crusher site
Manpower	28-30 persons
Cost Details	
Cost of project	Rs. 25 Lakhs/-.
Cost of EMP	Rs. 35.0 Lakhs (Capital) Rs. 6.3 Lakhs (Recurring)/Annum
Environmental sensitivities of the area	
Ecological sensitive area (national parks, Wildlife sanctuaries, Biosphere reserves etc.)	None. *(Nangal Wildlife Sanctuary is located at an aerial distance of 13.40 kms from the project site).*
State/National/International boundary within 10 km radius	State boundary of Punjab
Nearest highway	NH-503 (Una-Amb Road) at (aerial distance) of 6.0 kms towards West direction
Nearest railhead/ Railway station	Panoh at a (aerial distance) of 6.3 kms towards South-West direction

11.3 PROPOSED PRODUCTION:

Total production for five-year total production of minerals shall be ***approx.*** 32,000 MT/Year or 1,60,000 MT over a period of five years.

11.4 METHOD OF MINING/CONSIDERATION DURING MINING:

The method of mining will be manual. The mining operations shall be carried out in the mining lease area after leaving 5.0- 7.5 meters buffer/safety zone.

The following conditions have been taken into consideration:

- For undertaking systematic and scientific mining, the open cast mining is proposed by forming 6m X 6m benches (09 number of benches) and maintaining 45° angle of repose to ensure
- stability of hill slope.
- The project proponent will start mining operation from top portion from 488m elevation and first bench is proposed at 440mRL level with a face height of 6 m.
- No blasting will be required /undertaken.
- For safety, crate wire/ Gabion structure will be constructed along the lower side of the applied mining lease area to stop any rolling down of debris/rocks.
- The mining operations in the lease area are confined to day light hours, from 9:00 A.M. to 6:00 P.M., taking 280 working days/annum.
- Mining will be conducted in a systematic and scientific manner, with minimal risk of landslides. A buffer zone of 5–7.5 meters is recommended to ensure the safety of adjacent areas.

11.5 PLANTATION WORK:

The plantation will be done on the exhausted/excavated benches and the applied mining lease area after leaving the safety zone fenced properly. The total cost of plantation including its maintenance shall be approx. Rs. 12,00,000 for five years. The cost includes cost of plants, mineable and other labor activities. The species to be planted are Kachnar, Drek, Amla, Sahtoot & Poplar. ***The estimated survival rate proposed to be achieved shall be 80%.***

11.6 STRATEGY FOR PROTECTION OF POINT OF PUBLIC UTILITY ETC.:

There is no point of public utility or interest that need to be protected while undertaking mining operations.

11.7 BUDGET ALLOCATION OF ENVIRONMENT MANAGEMENT PLAN:

The total budget allocated for the Environmental Management Plan (EMP) is ₹35.0 lakhs for capital costs and ₹6.3 lakhs for recurring expenses, ensuring comprehensive environmental management and sustainability measures are implemented effectively.

11.8 RECLAMATION PLAN:

Best possible terracing of hill slope: The mining is suggested in a way so that there is best possible terracing of the hill slopes.

Aesthetic: Proper mining will form terraces in the hillslopes so that they are able to bear systematic cultivation of agricultural /horticultural crops, thus enhancing the aesthetic look. The proper management of the landscape will add to the aesthetic look of the area.

11.9 PREVENTIVE RETAINING STRUCTURES:

A 176-meter-long crate wire/retaining structure, with a height of 1.5 meters and a width of 1.0 meter, is proposed along the lease boundary. The wall will be constructed in stages, with an estimated cost of ₹15,00,000/- lakhs for construction and maintenance.

11.10 USE OF MINERAL:

The boulders shall be used for the manufacturing of grit in the already established stone crusher unit and after screening/washing the stone and bajri shall be used for the manufacturing of grit and M-sand and the sand shall be sold in the open market. The material shall be used for approach road works or plantation work.

11.11 BENEFITS OF MINING:

The proposed activity shall provide raw material to stone crusher there by boosting production of construction material. This will bring overall improvement in infrastructure development and economic growth of the area. Generating useful economic resource for construction. Generating employment and improvement of socio-economic conditions of the study area.

11.12 IMPROVEMENTS IN THE PHYSICAL & SOCIAL INFRASTRUCTURE:

The proposed sand, stone and bajri mine will have numerous induced impacts on society such as growth in schools, hospitals, hotels & resorts, transport etc. It will also attract other entrepreneur to establish their venture in the region. The social infrastructure like religious places (temple, gurudwara, etc.); marriage homes, Bus stations, railway stations, play grounds will be improved.

11.13 CONCLUSION:

This Project will provide several benefits to the near villagers by a proper planning and management. This project will employ most of the worker from nearby villages. There will not be any increase in population due to the project. However, few people from other area may migrate in this area for business opportunities. During the operation of this project no adverse impact on the surrounding environment is envisaged. It is therefore concluded that project will give a boost in the economic and social upliftment of surrounding area.

CHAPTER -12

DISCLOSURE OF CONSULTANTS ENGAGED

12.0 ORGANIZATIONAL PROFILE:

M/s JMS Enviro Care and Innovative Centre was established in 2024 and has been floated by the vast experienced technical experts to provide consultancy services in the field of environment matters. The registered office of the consultancy firm is located at SCO No: 6, Motia Plaza, Baddi, District Solan, Himachal Pradesh. **The consultancy firm is accredited by QCI-NABET as Category-A under QCI-NABET scheme for accreditation of EIA consultant organization**, Version-3, for preparation of EIA/EMP reports for the 10 sectors including mining of minerals by way of using open cast/underground mining techniques, **vide certificate no. NABET/EIA/24-27/IA 0142 dated 01.10.2024.**

The consultancy firm is an **ISO 14001-2015 & ISO 9001-2015 certified**. The firm has scope to work anywhere in the country but the entrepreneurs/ project proponents on the State of Himachal Pradesh especially will have opportunity to get hassle free **'Environment Clearance and 'No Increase in Pollution Load Certificate'.**

The consultancy firm has qualified and experienced in-house and empaneled manpower.

12.1 Scope of Services:

In addition to the consultancy services for preparation of EIA/EMP Reports for which the consultancy firm is accredited by QCI-NABET, the consultancy firm is also providing services with regard to following thematic areas:

- Provide guidance and act as Environmental consultants for obtaining 'Environmental Clearance 'and' No Increase in Pollution Load Certificate' under EIA Notification
- Environmental consultants for projects for obtaining environmental clearance under EIA
- Preparation of environmental Statement Reports as required under rule 14 of the Environment (Protection) Rules,1986.
- Designing of pollution control devices/ equipment based on latest technologies
- Preparation of feasibility reports of the pollution control equipment
- Legal guidance of environmental matters
- Filing of application for obtaining statuary clearances
- Preparation of adequacy report of pollution control devices
- Guidance about implementation of cleaner technologies
- Adoption of waste minimization techniques

In order to get the samples of water/ wastewater / soil/ noise/ ambient air, the consultancy firm has executed an agreement with M/s Chandigarh Pollution Testing Laboratory Mohali. This laboratory has well equipped laboratory with modern instruments and experienced staff, and is accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL), a constituent Board of Quality Council of India. Besides, this laboratory is accredited by MoEF&CC as well as CPCB.

EIA Team Member

The work presented in this report was carried out by JMS Enviro Care and Innovative Centre, with active corporation from **M/s Shiva Stone Crusher** by involving following EIA Coordinator and FAEs:

The manner of EIA coordinator and FAE's engaged for the project has already been detailed:

Functional Areas	Name of the Expert	Task
Project Coordinator (EIA Coordinator)	Mr. Samarjit Kumar Goyal	Site visit, identification of the project, assist in identification of impacts of projects and suggestions of mitigation measures, preparation of EMP & environment Budgetary issues.
Air Pollution Prevention, Monitoring & Control (AP),	Mr. Surinder Singh Matharu TM: Mr. Jagir Singh	Finalization of monitoring locations, checking air quality data, evaluation of result of Ambient Air Quality Monitoring (AAQM) and contribution to EIA documentation.
Meteorology, Air Quality Modeling & Prediction (AQ)	Mr. Surinder Singh Matharu FAA: Ms. Nitasha Thakur	Finalization of monitoring locations, checking air quality data, evaluation of results of Ambient Air Quality Monitoring (AAQM).
Water Pollution, Prevention, Control & Prediction of Impacts (WP)	Mr. Rajiv Kumar Garg	Finalization of sampling locations for Ground water and Surface water, water balance for the project, evaluation of water pollution management, identification of impact, suggestions and finalization of mitigation measures, contribution to EIA documentation.

Risk and hazard Management (RH)	Mr. Punit Lal Mahto	Assistance in perfection of risk Assessment report and developing. and interpreting consequence analysis
Socio-Economics (SE)	Mrs. Ramandeep Kaur	Site visit, assist in identification of report and suggesting mitigation measures, preparation of EMP and environmental budgetary issue, identification of Project
Solid and Hazardous waste management (SHW)	Mr. Surinder Singh Matharu FAA: Ms. Shivani Thakur	Identification of water generation from the proposed plant, suggesting adequacy of mitigation measures and management of wastes, contribution to EIA documentation.
Ecology & Biodiversity (EB)	Mr. Durga Singh Verma FAA: Ms. Shivani Thakur	Site visit, field services, assessment of impacts of proposed project as biological environment, preparation of EIA report.
Hydrogeology (HG)	Mr. Punit Lal Mahto	Understanding and reporting Ground water conditions, finalization of Ground water sampling locations
Geology (Geo)	Mr. Punit Lal Mahto	Geology & Geomorphologic analysis based on the secondary data, Finalization of sampling locations, analysis of collected data, identification of mitigation measures.
Noise and Vibration (NV)	Mr. Jagir Singh	Site visit, checking of noise monitoring results, analysis of data, identification of impacts and mitigation measures
Land Use (LU)	Mr. Samarjit Kumar Goyal	Site visit, development of land use maps of study area using GIS, related tasks, site visit for ground truth survey, finalization of land use maps, contribution of EIA documents.
Soil Conservation (SC)	Mr. Samarjit Kumar Goyal	Site Visit, Finalization of soil sampling locations, finalization of survey findings, identification of impacts, suggestion of mitigation measures and contribution to EIA documentation

Laboratory	Chandigarh Pollution Testing Laboratory & Team	Sample analysis of water, soil and air collected from the study area as per MoEF&CC requirement.
Independently review	Mr. Samarjit Kumar Goyal	Independent review of EIA report against pre-set structure.

NABET CERTIFICATE

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL OF INDIA
QCI Creating an Ecosystem for Quality

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

JMS Enviro Care and Innovative Centre, Solan

Building No./Flat No.: SCO6, Road/Street: 2nd Floor Motia Plaza, Saraj Majra Lavan, Baddi, Solan, Himachal Pradesh-173205

*The organization is accredited as **Category-A** under the QCI-NABET **Scheme for Accreditation of EIA Consultant Organization, Version 3**: for preparing EIA/EMP reports in the following Sectors.*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast/underground mining	1	1 (a) (i)	B
2.	Mining of minerals-opencast mining only			A
3.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
4.	Cement plants	9	3 (b)	B
5.	Synthetic organic chemicals industry	21	5 (f)	A
6.	Distilleries	22	5 (g)	A
7.	Industrial estates/ parks/ complexes/areas, export processing Zones(EPZs), Special Economic Zones(SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
8.	Highways,	34	7 (f)	A
9.	Building and construction projects	38	8 (a)	B
10.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IAAC minutes dated July 12, 2024, and Supplementary Assessment minutes dated September 20, 2024 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/24/3373 dated October 1, 2024. The accreditation needs to be renewed before the expiry date by JMS Enviro Care and Innovative Centre, Solan following due process of assessment.

Issue Date
October 1, 2024

Valid up to
June 20, 2027

Mr. Ajay Kumar Jha
Sr. Director, NABET

Certificate No.
NABET/EIA/24-27/IA 0142

Prof (Dr) Varinder S Kanwar
CEO-NABET

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

NABL CERTIFICATE

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

CHANDIGARH POLLUTION TESTING LABORATORY

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

PLOT NO. E-126, PHASE-VII,INDUSTRIAL AREA, MOHALI, PUNJAB, INDIA

in the field of

TESTING

Certificate Number: TC-6728

Issue Date: 09/11/2024 Valid Until: 08/11/2028

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of thislaboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: Chandigarh Pollution Testing Laboratory

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

ANNEXURES

ANNEXURE-I

LETTER OF INTENT

No. Udyog-Bhu(Khani-4)Laghu-460/2024
Government of Himachal Pradesh,
Department of Industries
Geological Wing

Dated: Shimla-171001, the 2024

LETTER OF INTENT

Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher, Village & P.O. Dhamandri, Tehsil & Distt. Una, has applied for grant of mining lease, over an area measuring 2-47-13 hects. (Private land, hill slope), bearing khasra Nos. 596 & 599, falling in Mohal/Mauza Sanjhot of Tehsil & District Una, for the extraction of sand, stone & bajri, to meet out the requirement of existing stone crusher unit under the name and style of M/s Shiva Stone Crusher under the provisions of the Himachal Pradesh Minor Minerals (Concession) and Mineral (Prevention of illegal Mining, Transportation and Storage) Rules, 2015. The case was referred to the Joint Inspection Committee for inspection of the area applied for the grant of mining lease and the Committee after inspecting the site, recommended the area for the grant of mining lease in favour of the said applicant. Accordingly on the basis of recommendations of the Joint Inspection Committee, the 'Letter of Intent' for the grant of mining lease for extraction of sand, stone and bajri for use in stone crusher in favour of Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher, Village & P.O. Dhamandri, Tehsil & Distt. Una (Himachal Pradesh) over an area measuring 2-47-13 hects. (Private land, hill slope), bearing khasra Nos. 596 & 599, falling in Mohal/Mauza Sanjhot of Tehsil & District Una, H.P. is hereby issued subject to the following conditions:-

1. The party shall get the area demarcated from the revenue authorities and shall erect permanent boundary pillars up to the satisfaction of the Mining Officer, so as to clearly depict the letter of intent issued area. A copy of the demarcation report shall also be submitted to the Mining Officer.
2. The party shall have to submit the approved Mining Plan under Rule 35 of the Himachal Pradesh Minor Minerals (Concession) and Mineral (Prevention of illegal Mining, Transportation and Storage) Rules, 2015.
3. The party shall have to obtain Environment clearance under Environment Protection Act, 1986 and Environment Impact Assessment, notification, 2006 and amendment issued time to time in this regard from the competent authority.

4. The party shall submit a certificate from the revenue authority to the effect that Khasra Nos. 596 & 599 are free from all encumbrance and all the co-sharers of above said land have given their consent.
5. The party shall settle the dispute, if arises between him and land owners/co-sharer/right holders at his own level and shall indemnify the Govt. in this behalf.

The letter of intent is subject to any orders passed by Hon'ble Supreme Court of India/National Green Tribunal/High Court of Himachal Pradesh or other concerned Departments from time to time in this regard. This letter of intent is valid only for obtaining requisite clearance from the Competent Authority.

The grant order imposing all the conditions and stipulations relevant as per the rules shall be issued only after submission of documents as mentioned at condition No. 1 to 5 above and after completing codal formalities. This letter of intent shall be valid for a period of two years. Thereafter, extension of provisional period shall be granted only after reviewing of the progress made for fulfillment of the above said documents. The Party shall not resort to any mining activities till the execution of mining lease.

Director of Industries,
Himachal Pradesh

Sh. Bhupinder Thakur,
Prop. M/s Shiva Stone Crusher,
Village & P.O. Dhamandri,
Tehsil & Distt. Una, H.P.

Endst. No. Udyog-Bhu(Khani-4)Laghu-460/2024 6084 Dated 10-10-24

Copy to the following for information and necessary action:

1. The Mining Officer, Una, Distt. Una, H.P.
2. Guard file.

Director of Industries
Himachal Pradesh

ANNEXURE-II

APPROVAL LETTER

No. Udyog-Bhu(Khani-4)Laghu-460/2024 - 9140
Government of Himachal Pradesh
Department of Industries
"Geological Wing"

Dated; Shimla- 171001, 02/01/ 2025

To

Sh. Bhupinder Thakur,
Prop. M/s Shiva Stone Crusher,
Village & P.O. Dhamandri, Tehsil & District Una (H.P).

Subject:- **Approval of Mining Plan of area applied for the grant of mining lease for extraction of sand, stone & bajri from Khasra Nos. 596 & 599, measuring 02-47-13 hects. (Pvt. land, hill slope) falling in Mohal/Mauza Sanjhot of Tehsil & Distt. Una, H. P. for which Letter of Intent has been issued on 10.10.2024**

Dear Sir,

In exercise of powers conferred by Rule 36 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015, I hereby approve the above said Mining Plan for the purpose of obtaining Environment Clearance of the area applied for grant of mining lease for which the letter of Intent has been issued on 10.10.2024. The mining plan is approved for a period of five years from the date of execution of mining lease deed. This approval is subject to the following conditions:--

1. That the Mining Plan is approved without prejudice to any other laws applicable to the mine/area from time to time whether made by the Central/State Government or any other authority.
2. That this approval of the Mining Plan does not in any way imply the approval of Government in terms of any other provisions of the H. P. Minor Minerals (Concession) Revised Rules, 1971 now repealed as Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015 or any other laws including Forest (Conservation) Act, 1980, Environment Protection Act, 1986 and the rules made thereunder and other relevant statutes, orders and guidelines as may be applicable to lease area from time to time.
3. That the Mining Plan is approved without prejudice to any orders or directions from any court of competent jurisdiction.
4. That in case State Geologist, Geologist, any other inspecting officer/official of Geological Wing Department of Industries, after field inspection notices that proposals made and workings shown in the mining lease by the RQP need certain corrections/amendments due to change in conditions either natural or manmade, the inspecting officer can recommend necessary amendments in the said Mining Plan at any point of time in the interest of environment and mineral conservation.
5. That the lease holder shall procure Environment clearance from the Competent Authority as per Environmental Impact Assessment Notification, 2006 and amendments/notifications issued time to time in this regard.
6. That the approval of proposed mining operations is restricted to the mining lease area only.
7. That in case additional conditions are imposed by the Ministry of Environment & Forests Govt. of

India while according clearance under EIA notification dated 14.9.2006 and any condition imposed by the State Govt. while granting mining lease the same shall have to be incorporated by making necessary amendments in the Mining Plan by the lessee through R. Q. P.

8. That in case Mining lease is not granted or is terminated or working is suspended before the expiry of the lease period due to any reason, the approval of Mining Plan shall stand automatically cancelled.
9. That the lease holder shall carry out production of mineral in accordance to the production shown in Mining Plan and Environment Clearance whichever is less.
10. That no person shall undertake mining operations in any mining lease area, except in accordance with a Mining Plan approved under sub rule (2) of Rule 39 of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.
11. That the lease holder shall carry out working in the mining lease area as per Mining Plan only after obtaining permission to work in the mining lease area from the Competent Authority.
12. State Geologist, Geologist, Assistant Geologist and the Mining Officer, made order suspension of all or any of the mining operations and permit continuation of only such operations as may be necessary to restore the conditions in the mine as envisaged under the said Mining Plan.
13. That anything is found to be concealed as required under various Rules and guidelines pertaining to mining in the context of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
14. That in case of any violation of terms and conditions of the approved Mining Plan, the financial assurance deposited by the said lessee shall be liable to forfeited.

Enclosed:- Copy of approved Mining Plan.

Yours faithfully,

Geologist Zone-II
Himachal Pradesh
Dated; 2024

Endst. No. As above.
Copy for kind information to:-

1. The Mining Officer, Una, Distt. Una, H.P. alongwith a copy of Mining Plan for further necessary action. He is further directed to report any discrepancies if observed in the mining plan so that the same could be rectified accordingly.
2 Sh. Arun Dhiman, Village & P.O. Dhaloon(Panchpuli), Tehsil Nagrota Bagwan, Distt. Kangra, H.P. 176056.

Geologist Zone-II
Himachal Pradesh

ANNEXURE-III

JAMABANDI

राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 5079125425222737

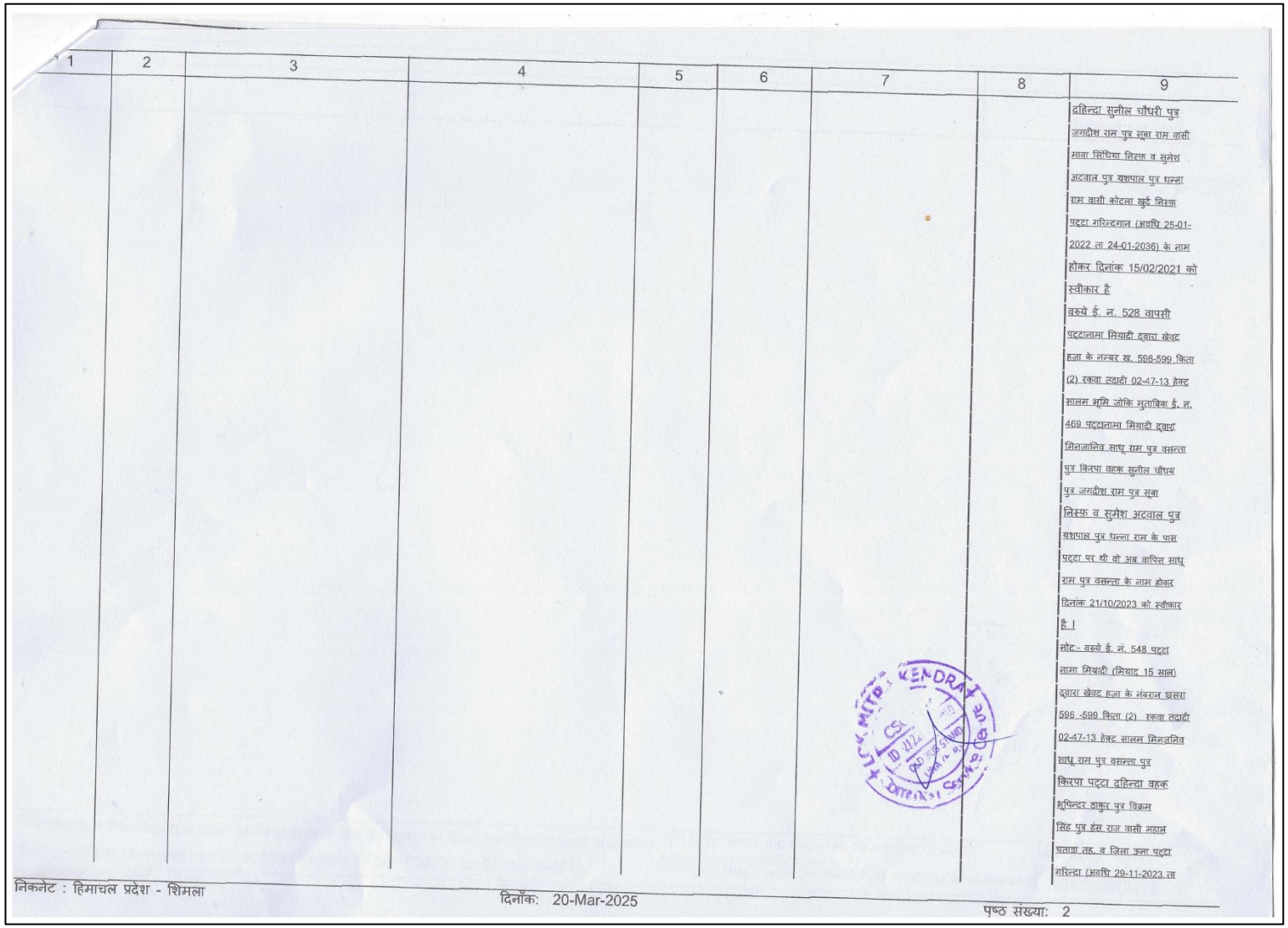
जिला : ऊना
तहसील : ऊना
कानूनगोवृत : नारी
पटवार वृत : धमान्दरी
हदबस्त न. : 445
मोहाल : संझोट
साल : 2020-2021
नाम : c
पिता/पति : c

नकल शुल्क : 1.00
सेवा शुल्क : 30
कुल शुल्क : 31

रकबा ईकाई: है-आ-सै

खेवट नं. / नाम पत्ती या तरफ मय नाम नम्बरदार / मुताबला व शरह मुआमला व हबूबं	खतौनी नं. / लगान जो मुजारा अदा करता है व तफसील शरह व तदाद	नाम मालिक व एहवाल	नाम काश्तकार व एहवाल	नाम चाह व दीगर वसायल आबपाशी	नम्बर खसरा हाल	रकबा हर खेत व मिजान खाता मय किस्म अराजी	हिस्सा या पैमाना हकीयत व तरीका बाछ	कैफियत
1	2	3	4	5	6	7	8	9
84 मिन 75 ..... बशरहा खेवट न. (1) ..... 0.00 माल 0.00 स्वाई 0.00	146 मिन 136	साधू राम पुत्र वसन्ता पुत्र किरपा स्थानिय वासी	काश्त व कब्जा स्वंय		596	01-76-02 खडैतर	कब्जा व पडता बशरह खेवट न. (1)	नोटः- वरुये रपट नं. 83 दिनांक 13-09-2009 खेवट हजा का नम्बर खसरा 2215/52,554 किता 2 रकवा 1-96-87 हैक्ट. सालम मिनजानव साधू राम पुत्र वसन्ता वदले मु. 2,50,000/-रुपये वहक स्टेट बैंक आफ इण्डया शाखा वसाल आड रहन है। 469 पट्टादारी 528 तबदील कब्जा 528 पट्टादारी 548 पट्टादारी नोटः- वरुये ई. नं. 469 पट्टा नामा मियादी 15 साल हजारा खेवट हजा के नंबरान खसरा 596 -599 किता (2) रकबा तहादी 02-47-13 हैक्ट सालम मिनजानिव साधू राम पुत्र वसन्ता पुत्र किरपा पट्टा

निकलेट : हिमाचल प्रदेश - शिमला
दिनाँक: 20-Mar-2025



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								दहिन्दा सुनील चौधरी पुत्र जगदीश राम पुत्र सूबा राम वासी मावा सिंघिया निस्फ व सुमेश अटवाल पुत्र यशपाल पुत्र धन्ना राम वासी कोटला खुर्द निस्फ पट्टा गरिन्दगान (अवधि 25-01-2022 ता 24-01-2036) के नाम होकर दिनांक 15/02/2021 को स्वीकार है वरुये ई. न. 528 वापसी पट्टानामा मियादी द्वारा खेवट हजा के नम्बर ख. 596-599 किता (2) रकबा तदादी 02-47-13 हेक्ट सालम भूमि जोकि मुताबिक ई. न. 469 पट्टानामा मियादी द्वारा मिनजानिब साधू राम पुत्र वसन्ता पुत्र किरपा वहक सुनील चौधय पुत्र जगदीश राम पुत्र सूबा निस्फ व सुमेश अटवाल पुत्र यशपाल पुत्र धन्ना राम के पास पट्टा पर थी वो अब वापिस साधू राम पुत्र वसन्ता के नाम होकर दिनांक 21/10/2023 को स्वीकार है। नोट:- वरुये ई. नं. 548 पट्टा नामा मियादी (मियाद 15 साल) द्वारा खेवट हजा के नंबरान ख्सरा 596 -599 किता (2) रकबा तदादी 02-47-13 हेक्ट सालम मिनजनिब साधू राम पुत्र वसन्ता पुत्र किरपा पट्टा दहिन्दा वहक भूपिन्दर ठाकुर पुत्र विक्रम सिंह पुत्र हंस राज वासी मोहाल घताड़ा तह. व जिला ऊना पट्टा गरिन्दा (अवधि 29-11-2023 ता

निकनेट : हिमाचल प्रदेश - शिमला दिनाँक: 20-Mar-2025 पृष्ठ संख्या: 2

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								28-11-2038) के नाम होकर दिनांक 08/02/2024 को स्वीकार है

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राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 4324112823914543

जिला : ऊना
तहसील : ऊना
कानूनगोवृत : नारी
पटवार वृत : धमान्दरी
हदबस्त न. : 445 मोहाल : संझोट

नाम : a
पिता/पति : a

साल : 2020-2021 रकबा ईकाई: है-आ-सै

नकल शुल्क : 1.00
सेवा शुल्क : 30
कुल शुल्क : 31

खेवट नं. / नाम पत्ती या तरफ मय नाम नम्बरदार / मुताबला व शरह मुआमला व हबूब	खतौनी नं. / लगान जो मुजारा अदा करता है व तफसील शरह व तदाद	नाम मालिक व एहवाल	नाम काश्तकार व एहवाल	नाम चाह व दीगर वसायल आबपाशी	नम्बर खसरा हाल	रकबा हर खेत व मिजान खाता मय किस्म अराजी	हिस्सा या पैमाना हकीयत व तरीका बाछ	कैफियत
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84 मिन 75 ..... बशरहा खेवट न. (1) ..... 0.00 माल 0.00 स्वाई 0.00	146 मिन 136	साधू राम पुत्र वसन्ता पुत्र किरपा स्थानिय वासी	काश्त व कब्जा स्वंय		599	00-71-11 खड़ैतर	कब्जा व पड़ता बशरह खेवट न. (1)	नोटः- वरुये रपट नं. 83 दिनांक 13-09-2009 खेवट हजा का नम्बर खसरा 2215/52,554 किता 2 रकवा 1-96-87 हैक्ट. सालम मिनजानव साधू राम पुत्र वसन्ता वदले मु. 2,50,000/-रुपये वहक स्टेट बैंक आफ इण्डया शाखा वसाल आड रहन है। 469 पटटादारी 528 तबदील कब्जा 528 पटटादारी वाधली 548 पटटादारी नोटः- वरुये ई. नं. 469 पटटा नामा मियादी 15 साल द्वारा खेवट हजा के नंबरान खसरा 596 -599 किता (2) रकवा तदादी 02-47-13 हैक्ट सालम मिनजनिव साधू राम पुत्र वसन्ता पुत्र किरपा पटटा

निकनेट : हिमाचल प्रदेश - शिमला दिनाँक: 19-Nov-2024 पृष्ठ संख्या: 1

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								दहिन्दा सुनील चौधरी पुत्र जगदीश राम पुत्र सुबा राम वासी मावा सिंघिया निस्फ व सुमेश अटवाल पुत्र यशपाल पुत्र धन्ना राम वासी कोटला खुर्द निस्फ पट्टा गरिन्दगान (अवधि 25-01-2022 ता 24-01-2036) के नाम होकर दिनांक 15/02/2021 को स्वीकार है वरुये ई. न. 528 वापसी पटटानामा मियादी दवारा खेवट हजा के नम्बर ख. 596-599 किता (2) रकवा तदादी 02-47-13 हेक्ट सालम भूमि जोकि मुताबिक ई. न. 469 पटटानामा मियादी दवारा मिनजानिव साधु राम पुत्र वसन्ता पुत्र किरपा वहक सुनील चौधय पुत्र जगदीश राम पुत्र सुबा निस्फ व सुमेश अटवाल पुत्र यशपाल पुत्र धन्ना राम के पास पट्टा पर थी वो अब वापिस साधु राम पुत्र वसन्ता के नाम होकर दिनांक 21/10/2023 को स्वीकार है। नोट:- वरुये ई. नं. 548 पट्टा नामा मियादी (मियाद 15 साल) दवारा खेवट हजा के नंबरान खसरा 596 -599 किता (2) रकवा तदादी 02-47-13 हेक्ट सालम मिनजानिव साधु राम पुत्र वसन्ता पुत्र किरपा पट्टा दहिन्दा वहक भूपिन्दर ठाकुर पुत्र विक्रम सिंह पुत्र हंस राज वासी महाल चताड़ा तह. व जिला ऊना पट्टा गरिन्दा (अवधि 29-11-2023 ता

निकनेट : हिमाचल प्रदेश - शिमला दिनाँक: 19-Nov-2024 पृष्ठ संख्या: 2

1	2	3	4	5	6	7	8	9
								28-11-2038) के नाम होकर दिनांक 08/02/2024 को स्वीकार है

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निकनेट : हिमाचल प्रदेश - शिमला

दिनाँक: 19-Nov-2024

पृष्ठ संख्या: 3

ANNEXURE-IV

500m DISTANCE CERTIFICATE

No. Udyog-Bhu(Khani-4)Laghu-460/2024 - 8892
Government of Himachal Pradesh
Department of Industries
"Geological Wing"
Dated, Shimla-171001, the 23/12/24 2024

To

Sh. Bhupinder Thakur,
Prop. M/s Shiva Stone Crusher,
Village & P.O. Dhamandri,
Tehsil & Distt. Una, (H.P).

Subject: Regarding distance certificate of 500 Mtrs.

Sir/Madam,

Enclosed please find herewith the distance certificate issued by the Mining Officer, Una, regarding distance from the granted/sanctioned mining lease areas/auctioned area within 500 mtrs. from the periphery of the area applied for mining lease for which Letter of Intent has been issued in favour of Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher, Village & P.O. Dhamandri, Tehsil & Distt Una, duly countersigned by the undersigned for taking further necessary action.

Yours faithfully

Encl/As above.

Geologist-Zone-II,
Himachal Pradesh,
Dated

Endst. No. Udyog-Bhu(Khani-4)Laghu-460/2024
Copy to the Mining Officer, Una, with reference to letter No. Udyog(Bhu)-UNA-Shiva Stone Crusher -2318 dated 25.11.2024 for information.

Geologist-Zone-II,
Himachal Pradesh,

Format for Certificate from Mining/Industries Department w.r.t. Mining Lease Located within 500 meters from the periphery of the area applied for.

.....

CERTIFICATE

Certified that, as per the report submitted by concerned Patwari in this office, 04 (Four) mining leases granted/applied with the department within 500 Mtr. from the periphery of the area applied for grant of mining lease by M/s Shiva Stone Crusher VPO Dhamandari, Tehsil & District Una HP, over Kh. No. 596, 599 measuring 02-47-13 Hect. in Mouza/Muhal Sanjhot, Tehsil & Distt. Una, Himachal Pradesh.

The status of mining lease is as under:

Sr. No.	Name of Mining Lease	Khasra No.	Area in Hectares	Mauza/ Mohal	Purpose	Status of EC/Mining lease whether operating or not operating
1.	M/s Shiva Stone Crusher VPO Dhamandari, Tehsil & District Una HP	2205/907/02, 919, 926, 2207/915	02-94-14 Hect.	Sanjhot	Stone Crusher	Operational
2.	M/s Sarswati Stone Crusher VPO Basal, Tehsil & District Una HP	928/1,928/2, 928/3,2209/ 929/1/1,220 9/929/2	01-48-21 Hect.	Sanjhot	Stone Crusher	Operational
3.	M/s Sarswati Stone Crusher VPO Basal, Tehsil & District Una HP	594	02-82-77 Hect	Sanjhot	Stone Crusher	Non-Operational
4.	Sh Tarun Sharma Prop Shree Ganga Stone Crusher VPO Upper Basal Tehsil & District Una (H.P.)	592,593,595, 604,636, 2256/586, 2227/586, 2228/591	02-91-57 Hect.	Sanjhot	Stone Crusher	Non-Operational

Mining Officer,
Department of Industries,
Himachal Pradesh,

Geologist (Zone-II)
Geological Wing
Deptt. of Industries Shimla-1

Geologist (Zone-II),
Geological Wing,
Department of Industries,
Himachal Pradesh

प्रमाण पत्र

प्रमाणित किया जाता है कि वाक्या महाल सन्झोट तह० व जि० – ऊना के नम्बरान खसरा 596- 599 किता (2) रकबा तदादी 02-47-13 हैक्टर वाला के लिए भुपिन्दर ठाकुर, Prop. M/s Shiva Stone Crusher, VPO-Dh[illegible] Teh & Distt Una (HP) ने Mining Lease के लिए विभाग के पास आवेदन किया है। जिसकी Joint Inspection दिनांक 06-07-2024 को हो चुकी है। जिसकी Grant Lease अभी तक स्वीकृत न हुई है। और इसके अलावा महाल सन्झोट में 500 मीटर के दायरे में स्वयं Shiva Stone Crusher की नम्बरान खसरा 2205/907/2 - 919 - 926 - 2207/915 कि० (4) रकबा तदादी 02-94-14 हैक्टर का mining lease है व इसके अलावा नम्बरान खसरा $\frac{2305}{928}$ - $\frac{2307}{928}$ - $\frac{2314}{2209/929}$ - $\frac{2306}{928}$ - 2313/22[illegible] किता (5) रकबा तदादी 02-48-21 हैक्टर पर mining lease का ~~आवेदन किया है~~ Sarswati Stone Crusher & Screening Unit V[illegible] Basal की है। इसके अतिरिक्त Sarswati Stone Crusher & Screening Unit की ही नम्बर खसरा 598 रकबा तदादी 02-82-77 हैक्टर पर भी mining lease के लिए आवेदन किया है जिसकी Joint Inspection दिनांक 10-04-23 को हो चुकी है। इसके अतिरिक्त तरुण शर्मा Prop M/s Shree Ganga Stone Crusher & Screening Unit VPO-Ugar-Basal ने भी नम्बरान खसरा 593 - 595 - 609 - 636 - $\frac{2226}{586}$ - $\frac{2227}{586}$ - $\frac{2228}{591}$ - 593 - 636 किता (11) रकबा तदादी 02-84-90 हैक्टर [illegible] के पर mining lease के लिए आवेदन किया है तथा जिसकी Joint Inspection 10-04-2023 को हो चुकी है। इसके अतिरिक्त कोई mining lease (प्रस्तावित या मन्जूरशुदा) 500 मीटर के दायरे में न है।

[signature] 19-11-2024
पटवारी
ऊना

JOINT INSPECTION REPORT

Page 1 of 11

PERFORMA FOR THE JOINT INSPECTION OF THE AREA APPLIED FOR GRANT OF MINING LEASE.

1. General

1.1 Name of the applicant		Sh. Bhupinder Thakur Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una HP
1.2 Address of the applicant	Father's Name	Sh. Vikram Singh
	Village	Chattara
	P.O.	Chattara
	Tehsil	Una
	District	Una
	Pin No	174306
1.3 Approach and location of the area	The site applied for mining lease is located in Mauza/Mohal Sanjhot Tehsil & District Una HP and is approachable from Dhamandari-Kuriyala road diverting LHS from village Sanjhot.	
1.4 Purpose for which lease is applied e.g. For setting up of stone crusher, Hollow block, Screening unit, free sale etc.	For use in Stone crusher under name & Style M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & District Una HP	
1.5 Date of Joint Inspection	06-07-2024	

1.6 Members present during joint inspection

Sr. No	Name & Designation	Particulars
1.	Sh. Vishwa Mohan Chauhan HAS S.D.O (Civil) Una, District Una	Chairman
2.	Sh. Abhinandan AE HPPWD	Representative of Executive Engineer HPPWD
3.	Sh. Ravinder Kumar AE JSV	Representative of Executive Engineer JSV
4.	Sh. Rahul Thakur, Range Forest Officer Una	Representative of Divisional Forest Officer Una
5.	Sh. Rajesh Kumar JE Flood protection	Representative of AE FPD Gagret
6.	Sh. Anil Chauhan JE, SDSCO Una	Representative Sub divisional soil conservation officer, Una
7.	Sh. Mohit Bharti JEE HPSPCB Una	Member
8.	Sh. Satish Kumar	Kanungo Una
9.	Sh. Jeevan Kumar	Halqa Patwari
10.	Sh. Neeraj Kant Mining Officer Una	Member Secretary

Officer

HK of Sh. Bhupinder Thakur Prop. M/S Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

2. Revenue Department

2.1 Status w.r.t. Demarcation of Applied for area: *The area was demarcated on 13.02.2024*

2.2 Detail of area applied

Kh. No	Area (In Hect)	Owner Govt. / private	Kism	Mohal	Mauza	Panchayat	Any other
596	01-76-02	Private	Khadetar	Sanjhot	Sanjhot	Nangal Salangari	
599	00-71-11	Private	Khadetar	Sanjhot	Sanjhot	Nangal Salangari	
	02-47-13						

Point of public utility in the area/near by (Village footpath, road, school,' residential house, hospital, cattle shed, charitable building, water channel, cemetery/ cremation ground, place of worship etc. *No habitation is present near the applied area & No Village footpath, road, school, hospital, cattle shed, charitable building, cemetery/ cremation ground, exists near the applied area.*

2.3 Consent of Gram Panchayat: *Resolution No. 07 dated 12.12.2023*

2.4 Whether marked on the location plan attached with application, if not then please mark

No

[Any special recommendation with respect to the above points]

The applied area for the mining lease does not fall within the limits of Municipal Corporation /Municipal Committee & Nagar Panchayat.

2.5 Any other observation/condition

The area was shown physically by Halqa Patwari, along with the concerned staff. As per entries of Revenue Records, the land applied for a mining lease is a private land hill slope & kism of the land is khadetar.

Recommendations: -

Since the area applied for the mining lease for collection/extraction of Stone & bajri to be used in Stone crusher unit, applied by Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una HP is a private land, Revenue department has no objection in the grant of this mining lease over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land, Hill slope) falling in Mauja & Mohal Sanjhot Tehsil & District Una H.P.

Mining Officer
Distt. Una

Patwar Circle ... Teh ... Distt. Una (H.P.)

Field Kanungo
Kanungo Circle NADI
Teh./Sub.Teh. UNA
Distt. Una (H.P.)

LOI of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

3. Forest Department

3.1 Types of land i.e. Reserve Forest/Protected Forest/Demarcated Forest/ Non Forest Government Land/ Private Land etc.	*Private land*	
3.2 Whether attract FCA,1980		*No*
If yes, then specify Kh. Nos, which attract FCA	—	

3.3 Whether there is any activity of the forest department in the area such as soil conservation works, nursery plantation, check dams, taming of nalls/stream etc, if yes please specify and mark on location plan and what precautions are required: *No soil conservation works, nursery plantation, check dams, taming of nallas/stream etc. exists near the applied area for mining lease.*

3.4 Whether there is any property of Forest Department nearby which may have direct effect if mining is allowed

No

3.5 Any other observation/condition

Recommendations: -

Since the area applied for the mining lease for collection/extraction of Stone & bajri to be used in the Stone crusher unit, applied by Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una HP (Private land/ Hill slope).Thick vegetation cover is present at the area applied for mining lease. The applicant will obtain necessary permission from competent authority for tree cutting. Forest department has no objection in grant of this mining lease over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land, Hill slope) falling in Mauja & Mohal Sanjhot Tehsil & District Una H.P. after obtaining codal formalities.

Range Officer
Forest Range
Una H.P.-174303

Case of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

4. PWD Department

4.1 Whether any road exist near area — Yes | ✓ No

If Yes then	Type of road	Distance from area	Marked on location plan as	Minimum safe distance required for mining
	NH	N.A.		75 m
	State highway			75 m
	Link road			50 m
	Village road			50 m

4.2 Whether any road exist within area — Yes | ✓ No

	Type of road	Distance from area	Marked on location plan as	Minimum safe distance required for mining
	NH		N.A.	
	State highway		N.A.	
	Link road		N.A.	
	Village road		N.A.	

4.3 Whether there exist any bridge, culvert etc within area/near area — Yes | ✓ No

If yes, than No. of bridges etc.

Whether marked on location plan — yes

Minimum safe distance required from bridge etc.	Bridge	Minimum distance required U/S	Minimum distance required D/S	If not, please mark Any special precaution required
	Bridge No.1	200m	500 m	*PWD Bridge exists at a distance of 800 m from the applied area*
	Bridge No.2			

4.4 Any other structure of PWD importance, if yes (Please mark on location plan) than specify any special precaution

No

4.5 Any other observation/condition

4.6 Is there any objection if intake point from PWD road to the leased area is used in case the lease is granted, if not, whether to allow with conditions

The project proponent will not ply the heavy vehicle carrying finished product/Machinery through village roads & will all time maintain the intake point from the PWD roads .

Recommendations: -

No public property/utility like road, bridge or structure belonging to the PWD department exists near the area applied for the mining lease for collection/extraction of Stone & bajri to be used in Stone crusher unit, applied by Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una HP (Private land/ Hill slope), PWD department has no objection in grant of this mining lease over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land, Hill slope) falling in Mauja & Mohal Sanjhot Tehsil & District Una H.P.

Asmandar
Assistant Engineer
Deru Baba Rudru
Sub.Division H.P.P.W.D.
Deru Baba Rudru (BASAL)

Mining Officer
Distt. Una

DK of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

5

5. JAL SHAKTI VIBHAG

5.1 Whether there exists any water supply scheme within/near the area			✓ No
Type of Scheme	Scheme	Minimum safe distance required	
		U/S	D/S
	Water supply tank	200 mts / 220 mts	200 mts
	Water supply bore well		
	Lift Irrigation Scheme		
	Any other source		
Whether marked on location plan		If not please mark	
Any special recommendation with respect to above schemes			

5.2 Any other important point with respect to JSV, if yes. Please mark on the location plan. Whether any special precaution is required, please specify

5.3 Any other observation/condition

Mining Officer
Distt. Una

Recommendations: -

Lift drinking water scheme & pipeline network is located at distance of 233 m hill side belonging to the JSV department near the area applied for the mining lease over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land, Hill slope) falling in Mauja & Mohal Sanjhot Tehsil & District Una H.P. for collection/extraction of Stone & bajri to be used in Stone crusher unit, applied by Sh. Bhupinder Thakur S/o Sh. Sh Vikram Singh M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una HP (Private land/ Hill slope. The applicant will obtain separate NOC from the competent authority of JSV.

In the Khasra No. 596 and 599, there are drinking water lines crossing the above land. The applicant Sh. Bhupinder Thakur agreed to take care of water pipe line while mining and take necessary action to repair and maintance at later steage if any defect occured on later stage. So the No. Objection certificate issued to applicant Sh Bhupinder Thakur for lease of Khasra No. 596 & 599/ for lease

Assistant Engineer
Jal Shakti Sub-Division
Basal, Distt. Una (H.P.)

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

6

Environment Protection & Pollution Control Board

(Summary of method for environment Protection)

The site of the applied mining lease was inspected jointly on dated 06/07/2024. HP State Pollution Control Board has no objection from a pollution point of view and the mining lease may be granted subject to the following conditions:

1. *The Mining lease area (02-47-13 Hect.) is a Hill slope area (Pvt. Land) at Mauja & Mohal Sanjhot Tehsil & District Una, so the mining shall be carried out scientifically and as per the policy of the Mining Department.*
2. *No blasting shall be carried out.*
3. *Natural Course of the river/nalla shall not be disturbed and especially steps shall be taken to control the soil erosion.*
4. *The proponent shall obtain/renew the consent to operate from the State Pollution Control Board and EC from the competent authority as per the orders of the Hon'ble Supreme Court dated 27/02/2012 and the Hon'ble High Court dated 15/06/2012 and 14/09/2012. The proponent shall not carry out any mining activity without obtaining consent from the State Board and EC from the competent authority.*
5. *Water sprinkling shall be carried out on approach roads and covering of material shall be done during transporting of the material from the mining lease area.*
6. *The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.*

Mining Officer

Jr. Env. Engg.
HPSPCB, Una
Distt. Una (H.P.)

ASSISTANT ENVIRONMENTAL ENGINEER
HP State Pollution Control Board
Una (H.P.) 174303

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

6. Industries Department		
6.1 Location of applied for area (nearest village/important features)		*The site applied for a mining lease is located in Mauja & Mohal Sanjhot Tehsil & District Una H.P. and is approachable from Dhamandari-Kariyala road diversting LHS from village Sanjhot.*
6.2 Purpose of Mining Lease.		*For the Stone crusher unit*
6.3 Overlapping of areas with any other lease/contract		✓ NO
If yes please give detail N.A		
6.4 Location of the nearest mining area/quarry		M/s Shiva Stone Crusher VPO Dhamandari Tehsil & District Una HP (Khasra No. 2205/907/2, 919, 926 & 2207/915 measuring 02-94-14 falling in Mauza/ Mohal Sanjhot Tehsil & District Una)
6.5 Average daily production anticipated in Metric Tons		*50-100 tons per day*
If yes, please mark on location plan and suggest precaution		*Attached*
6.6 Suitability of mineral as per the purpose given above (Give detail)		*The applied area is in form of Hill slope & is mostly comprised of conglomerate beds with soil matrix and is suitable to be used in a crusher.*

Mining Officer
Distt. Una

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

6.7 Feasibility of Mining

(i) Name of Mineral: *Sand, Stone & Bajri*

(ii) Type of mining Hill Slope/River Bed: *Hill slope*

(A)Hill Slope

(i)Average angle of slope: *Uniform slope angles are observed in the area. The Hill Slope has a gentle-moderately steep slope with an angle of 30° to 45° in the applied mining lease area. The conglomerate deposits, where the mining lease is applied is slightly undulating with 2-4 meters elevation from one end to other.*

***(ii) Nature of Rock:** Conglomerate beds with soil matrix.*

(iii) Scientific mine ability considering the orientation of revenue record: will be sustain in Mining Plan.

(iv) Availability of mineral w.r.t anticipated production: *The applied area comprises of conglomerate beds with a soil matrix & is suitable to be used in crusher. The usable material from the applied area is approximately 50-60-% of the total reserve.*

(v) Availability of area for disposal of waste: *The waste so generated will be backfilled for reclamation of the mined area.*

(vi) Approach to Mining Area: *The crusher site is located at a distance of 3 km from the applied mining lease.For transportation of loaded trucks/tractors to the nearest crusher site the vehicles will only pass through the Private land as well as Govt. land. Project Proponent will make necessary arrangements between the land owners and will take care of other issues on his own for the mineral transportation to the nearest road and shall indemnity of Government against claims of third parties.*

(vii) Whether the area are prone to landslides if yes Then the protection measures needed thereof: *As the mining lease area is a hill with a gentle to moderately steel slope and as the adjoining lands are almost flat with very less gradient, there is no scope for landslide in the vicinity of the applied mining lease area. The hill slope is mostly comprised of conglomerate beds with thinsoil cover in the mining lease area. The slope at places is uniform and if the mining operations would be carried out in a systematic and scientific ways, there are negligible chances of any landslide.However, for the safety of adjoining lands for buffer of 5-7.5 m is suggested.*

(B) River Bed: NA

(c) Additional information on case of Grant of Mining Lease

(i) Report under Rule 18(2)of Himachal Pradesh Minor Mineral rule:

(i)Investment for developing the area :

(ii)Investment on machinery & equipment:

(iii)Laborers Employed :

(ii) Production of mineral for the last tenure:

(iii)Violation of condition mining noticed in the tenure:

(iv) Detailed note on scientific mining w.r.t working cum Environment Management Plan in the last tenure:

Mining Officer
Distt. Una

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

6.8 Whether mining can pose threat to existing object of Public Utility or private property? If any, Give detail and precaution required

Water supply scheme of JSV & Thick vegetation cover was observed at the area applied for mining lease. The Applicant will plan the mining activity in such a manner to minimize the loss to public utility structurs.

if no, the reason thereof:

6.9 Any other special point pertaining to Industries Department

1. *The area applied for fresh mining lease for collection/extraction of Stone & Bajri to be used in stone crusher unit is a Hill slope private land comprising Khasra No. 596 & 599 measuring 02-47-13 Hactares falling in Mauja & Mohal Sanjhot Tehsil & District Una H.P.*
2. *The applied land for a mining lease is leased out by land owners in favour of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una H.P.*
3. *During the scrutiny of the revenue record it was found that the applicant has applied Khasra No 596 & 599 totalling 02-47-13 Hactares.*
4. *The google coordinates of area area 31°34'24.64" N, 76°15'43.31" E.*
5. *The area applied forms a compact block.*
6. *The proposed area falls under Gram Panchayat Nangal Salangari.*
7. *As per the revenue record kism of the applied area for the mining lease is khadetar .*
8. *The applicant will plan the mining activities keeping 5-7.5 m as a buffer zone so that the adjoining lands may not be disturbed/damaged.*
9. *The crusher site is at distance of 3 km from the applied area for mining lease.The Project Proponent will be made necessary arrangements between the land owners (Private) as well as Govt (in case) and will take care of other issues if any on his own for the mineral transportation to the nearest road and shall indemnity of Government against claims of third parties.*
10. *In order to avoid the annoyance of local habitants, the project proponent will not use narrow village roads for plying vehicles carrying finished products (grit and sand) and will use separate roads bypassing the narrow village roads.*
11. *The working in the mining lease area will be strictly as per the Himachal Pradesh Mineral policy 2024 & the provisions of The Himachal Pradesh Minor Minerals (concession) and Mineral (Prevention of illegal mining ,Transportation and Storage Rules, 2015 & stipulation of SEIAA.*
12. *The applied area was demarcated on 13.02.2024.*
13. *The applicant will start mining operations after obtaining EIA clearance from the competent authority.*
14. *The land being private (Hill slope) is with vegetation growth, Forest Department has no objection to granting a mining lease.*
15. *Water supply scheme of JSV & Thick vegetation cover was observed at the area applied for mining lease. The applicant will obtain separate NOC from department in this regard.*
16. *After ceasing mining operations, the Project proponent shall re-grass the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for the growth of fodder, flora, fauna etc.*
17. *No structure of a Flood protection department exists near the applied area for lease*
18. *Since no agricultural land exists near the applied area Subdivisional Soil conservation department has no objection in grant the area applied for a mining lease.*

Mining Officer Distt. Una

JIK of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

Additional Information in light of observation made by the Govt vide letter no Govt Ind-II(F)6-1/2014 dated 6.2.2014/ Udyog-Blu(Khani-4)Laglu-350/13-12531 12:02.2014

S.No	Information	Reply
1	Status of applied area in Survey Document	The proposed area in which mining lease is applied is Private land & Hill slope.
2	Mineral potential of the area	The applied Mining lease is located on a hilly terrain and suitable material for crushing is available in the whole of the applied mining lease area. The exact reserve calculations will be estimated during the preparation of "Mining plan" of the proposed area. The usable material from the applied area is approximately 50-60% of the total reserve.
3	Mineral analysis & Source of replenishment	The mining lease area comprises predominantly the boulders, cobbles, pebbles, bajri, with soil /Clay and silt matrix. The boulders are spotted white, greenish white pink, purple and dark green in colour. Quartzite fragments are rounded, sub-rounded and discoidal in shape having smooth surface. The size of minor mineral varies from silt to boulder. Since the applied area is private land Hill slope there are no chances of replenishment.
4	Length of river, location of proposed site w.r.t origin of the river ,Distance of existing /proposed crushers or leases from proposed mining lease are.	The applied mining lease area is private land Hill slope & the nearest mining lease belong to M/s Shiva Stone Crusher, VPO Dhamandari , Tehsil & District Una, HP in Sanjot.

Mining Officer
Distt. Una

JK of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamanaari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

Additional Information in light of observation made by the Govt vide letter no Govt Ind-II(F)6-1/2014 dated 6.2.2014/ Udyog-Blu(Khani-4)Laghu-350/13-12531 12.02.2014

S.No	Information	Reply
1	Status of applied area in Survey Document	The proposed area in which mining lease is applied is Private land & Hill slope.
2	Mineral potential of the area	The applied Mining lease is located on a hilly terrain and suitable material for crushing is available in the whole of the applied mining lease area. The exact reserve calculations will be estimated during the preparation of "Mining plan" of the proposed area. The usable material from the applied area is approximately 50-60% of the total reserve.
3	Mineral analysis & Source of replenishment	The mining lease area comprises predominantly the boulders, cobbles, pebbles, bajri, with soil /Clay and silt matrix. The boulders are spotted white, greenish white pink, purple and dark green in colour. Quartzite fragments are rounded, sub-rounded and discoidal in shape having smooth surface. The size of minor mineral varies from silt to boulder. Since the applied area is private land Hill slope there are no chances of replenishment.
4	Length of river, location of proposed site w.r.t origin of the river ,Distance of existing /proposed crushers or leases from proposed mining lease are.	The applied mining lease area is private land Hill slope & the nearest mining lease belong to M/s Shiva Stone Crusher, VPO Dhamandari , Tehsil & District Una, HP in Sanjot.

Mining Officer
Distt. Una

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamanuari Tehsil & Distt. Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

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8.Recommendations		
8.1 Whether whole of the area is being recommended for mining	*Yes*	
If no, please specify the Kh. Nos. being recommended		
Any other recommendation in addition to recommendations given at top NO		

Final recommendation of the Committee

Keeping the facts & stipulations stated above , the Committee recommends the fresh mining lease (Private land, Hill slope) for collection/extraction of Sand, Stone & Bajri for use in the stone crusher unit applied by Sh. Bhupinder Thakur S/o Sh. Vikram Singh M/s Shiva Stone Crusher village & PO Dhamandari Tehsil & Distt. Una H.P. for use in Stone crusher over khasra no.596,599 measuring 02-47-13 Hectares (Private Land) falling in Mauja & Mohal SANJHOT Tehsil & District Una H.P.

Signatures:-

Sub Divisional Magistrate Sub Divisional Magistrate, Una, District Una (H.P.)	Divisional Forest Officer Una (H.P.) Forest Range	Executive Engineer Assistant Engineer Dera Baba Rudru Sub.Division H.P.P.W.D. Dera Baba Rudru (BASAL)
Executive Engineer JSV Assistant Engineer Jal. Shakti Sub-Division Basal, Distt. Una (H.P.)	Environmental Engineer H.P.EP&PCB Jr. Env. Engg. HPSPCB, Una Distt. Una (H.P.)	Subdivisional Soil Conservation Officer Una Sub Divisional Soil Cons Office Una.District Una (H.P.)
Mining Officer Una Mining Officer Distt. Una	ASSISTANT ENVIRONMENTAL ENGINEER HP State Pollution Control Board Una (H.P.) 174303	Junior Engineer (H.Q.) O/o S.D.S.C.O.Una Distt. Una (H.P.)

JIR of Sh. Bhupinder Thakur S/o Sh. Vikram Singh Prop. M/s Shiva Stone Crusher Village & PO Dhamandari Tehsil & Distt Una, of mining lease for collection/extraction of Sand, Stone Bajri over Khasra No 596 & 599 measuring 02-47-13 Hectares (Private Land/hill slope) falling in Mauza & Mohal Sanjhot Tehsil & District Una H.P. for use in stone crusher unit conducted on 06.07.2024.

ANNEXURE-VI

DFO CERTIFICATE

HP FOREST DEPARTMENT
UNA FOREST DIVISION, UNA (HP)

To whom it may concern

As requested by Shri Bhupinder Thakur Proprietor Shiva Stone Crusher, VPO Dhamandari, Tehsil & Distt. Una (HP) the following information is hereby authenticated in respect of Khasra No. 596 & 599 area measuring 02-47-13ha. falling at Mohal Sanjot, Tehsil & Distt. Una (HP) which is under private ownership.

There is no wild life sanctuary/National park/Biosphere Reserve within 10 KM distance of the mining lease site. GPS location 31°34'24.64"N 76°15'43.31"E and the aerial distance of Shiva Stone Crusher is 13.40Km from Nangal Wildlife Sanctuary.

List of flora and fauna fast growing species, Aquatic Animal species present in the area is enclosed.

Divisional Forest Officer,
Una Forest Division Una (HP).

Endst. No. 5285-86 Dated Una, the 22-11-2024

Copy is forwarded to:-

1. Sh. Bhupinder Thakur Prop. Shiva Stone Crusher VPO Dhamandari, Tehsil & Distt. Una (HP) w.r.t. his application dated 18.11.2024.

2. R.F.O. Una for information & necessary action w.r.t. his office letter No. 1163 dated 19.11.2024.

Divisional Forest Officer,
Una Forest Division Una (HP).

Local Name	English Name	Botanical Name
Aisan Sain	Indian laurel	*Terminalia tomentosa*
Ak	Apple of Sodom, rubber bush, swallow-wort	*Calotropis procera*
Akha	Heart leaf raspberry	*Rubus paniculatus*
Am	Mango	*Mangifera indica*
Amaltas, Kaniar, Alis	Golden shower tree	*Cassia fistula*
Amla	Chinese laurel, currant tree	*Antidesma acidum*
Amla	Indian gooseberry	*Emblica officinalis*
Anar-dana	Wild pomegranate	*Punica granatum*
Arjun	Arjuna myrobalan	*Terminalia arjuna*
Badhla	Indian willow	*Salix tetrasperma*
Badrol		*Persea gamblei*
Bahankahar, Gin, agnimanth	Premna	*Premna mucronata*
Bakkar bel	Black creeper	*Ichnocarpus frutescens*
Ban	Beech-wood, goomar tree	*Gmelina arborea*
Ban Basuti	Blue-beard	*Caryopteris odorata* (syn. *C. bicolor, C. wallichiana*)
Ban Malti	Jasmine	*Jasminum multiflorum*
Bana	Five-leaved chaste tree	*Vitex negundo*
Bans Bainj, Sotha	Male bamboo	*Dendrocalamus strictus*
Bantaur		*Atylosia crassa*
Barasol Pan	Winged stalked Flemingia	*Flemingia semialta*
Barnahi,Billan	Elephant apple, wood apple, monkey fruit, curd fruit	*Limonia acidissima*
Barthua	Bridal couch tree, sage plant	*Hymenodictyon excelsum*
Basant	Yellow flax, golden-girl	*Reinwardtia indica*
Basuti	Malabar nut	*Adhatoda vasica*
Batindu		*Stephania elegans*
Behra	Belleric myrobalan	*Terminalia belerica*
Bel	Stone apple, holy fruit tree	*Aegle marmelos*
Ber	Jujube	*Zizyphus mauritiana*
Berna	Three-lived-caper	*Crataeva religiosa*
Bhabar, Bagar	Baib grass	*Eulaliopsis binata*

JIC-Talai Beat

Local Name	English Name	Botanical Name
Bhadrun		*Gymnosporia royleana*
Bhakara		*Saurauja napaulensis*
Bhang	Hemp, marijuana	*Cannabis sativa*
Bharmela		*Euonymus pendulus*
Bhirang	Shrubby deeringia	*Deeringia celosioidses*
Biul, Dhaman		*Grewia oppositifolia*
Bohar,Barh	Bengal fig, Indian fig	*Ficus bengalensis*
Burkani	Wild-berry	*Maesa indica*
Cha buti	Billygoat-weed, Chick weed, Goatweed, Whiteweed	*Ageratum conyzoides*
Chakunda	Negro coffee, coffee senna	*Cassia occidentalis*
Chamar bel	Bush Grape, fox-grape, three-leaved wild vine, threeleaf cayratia	*Cayratia trifolia*
Chamar Saman	Velvety melon feather-foil	*Glochidion velutinum*
Chamorar		*Ehretia laevis*
Charaki	Charming clematis	*Clematis grata*
Chhittar Chhun	Drooping prickly pear	*Opuntia monacantha*
Chhota Mendhru	Cape-myrtle, African box-wood	*Myrsine africana*
Chil	Chir-pine	*Pinus roxburghii*
Chilla	Downy-leaved false kamela	*Casearia elliptica*
Chirandi	Dandal	*Xylosma longifolium*
Chopar chilla		*Miliusa velutina*
Coibur,machrun		*Clematis nutans*
Dagur	Hairy fig, devil fig	*Ficus hispida*
Damani	Two-lobed cross berry	*Grewia laevigata*
Dargarhi	Himalayan mimosa	*Mimosa himalyana*
Dhakkari	Arni	*Clerodendrum phlomidis*
Dhao, Chhal	Axlewood	*Anogeissus latifolia*
Dhawin,Dhawi	Fire-flame bush	*Woodfordia floribunda*
Dholu		*Chrysopogan montana*
Dhurmalti	Jasmine	*Jasminum arborescens*
Drek, dek, beakin	Persian cedar, white lilac	*Melia azederach*
Dudh bel	Bread-flower	*Vallaris heynei*
Dudla	Willow leaved fig	*Ficus nemoralis*
Dudli	Telegraph Plant or Semaphore	*Desmodium motorium*

2

Local Name	English Name	Botanical Name
Kahi	Asian fodder cane	*Saccharum spontaneum*
Kainth	Wild Himalayan pear	*Pyrus pashia*
Kakal Ber	Jackal jujube	*Zizyphus oenoplia*
Kakrain	Zebra-wood	*Pistacia integerrima*
Kala Akha	Rough fruit-berry	*Rubus lasiocarpus*
Kala Dhao, hira harkinu	Mottled ebony	*Diospyros cordifolia*
Kalan	Kaim	*Mitragyna parvifolia*
Kali basuti	Patchouli	*Pogostemon plectranthoides*
Kamal	Monkey face tree	*Mallotus philippinensis*
Kandroi	Drooping fig	*Ficus Semicordata* (syn. *Ficus cunia*)
Kangu	Batoko's plum	*Flacourtia ramontchi*
Kante bans	Giant thorny bamboo	*Bambusa arundinacea*
Kao	Wild olive, iron tree, Indian oli	*Olea ferruginea*
Kapur mingar		*Strobilanthes auriculatus*
Karanda		*Ficus clavata*
Kararoi Tila pati		*Roylea cinerea*
Karmaru	black siris, fragrant albizia, Ceylon rosewood	*Albizzia odoratissima*
Karun	Himalayan mulberry	*Morus serrata*
Kasakuri		*Trema politora*
Kathaman		*Eugenia jambolana Var caryophyllifolia*
Kathi	Cassia indigo	*Indigofera besua* (syn. *Indigofera pulchella, Indigofera leptostachya*)
Kehmal	Indian ash tree	*Lannea coromandelica*
Kendu	Mountain persimmon	*Diospyros montana*
Keor	Bitter oleander	*Holarrhena antidysenterica*
Khair	Cutch tree	*Acacia catechu*
Khajoor	Date-sugar palm, Indian winepalm, sugar palm, wild dat palm	*Phoenix sylvestris*
Khalawa	Woolly dyeing rosebay	*Wrightia tomentosa*
Kikkar	Indian gum-arabic tree	*Acacia Nilotica spp indica*
Kinnu	Persimmon tree	*Diospyros chloroxylon*
Kumbhi		*Cordia vestita*
Kuri,HarShingar	Coral Jasmine, Tree of Sorrow,	*Nyctanthus arbor tristis*

4

Local Name	English Name	Botanical Name
	Queen of the night	
Lambh	Black spear grass	*Heteropogan contortus*
Lambi	Wire-grass, spear-grass	*Aristida depressa*
Lantana,Ukkal Buti	Spanish flag, lantana	*Lantana camara*
Lasura	Assyrian plum	*Cordia myxa*
Ligga	Daar	*Boehmeria rugulosa*
Lunji	Brown sorghum	*Sorghum nitidum*
Maggar(Cultivated)	Bamboo	*Dendrocalamus hamiltonii*
Mahua	Indian butter tree	*Madhuca indica*
Makora Gha	Indian geranium grass	*Cymobopogan martinii*
Malti	Jasmine	*Jasminum Grandi florum*
Maltiwan	Hiptage	*Hiptage madablota*
Mandhar	Florida hopbush	*Dodonaea viscosa*
Mara	Bishop wood, Java wood	*Bischoffia javanica*
Maror Phalli	East Indian Screw Tree, Nut Leaved Screw Tree	*Helicteres isora*
Masandaru		*Linoceira intermedia*
Mirgu	Thunberg kutzu vine	*Cassine glauca*
Mund Bel	Sneeze Wort, Cotton milk plant Green milkweed climber, Green wax flower, Sneezing silk	*Wattakaka volubilis*
Nargan	Orange jasmine	*Murraya paniculata*
Nim	Indian lilac	*Azadirachta indica*
Ohi	Chinese albizia, silk tree	*Albizzia chinensis*
Padal	Yellow snake tree	*Strereospermum suaveolens*
Padar	False nettle	*Boehmeria platyphylla*
Padari, pilkhan, pakur	White fig	*Ficus Virens (syn. Infectoria)*
Palakh	Rumpf's fig	*Ficus rumphii*
Pansera	Tilki	*Wendlandia heynei*
Panwar	Foetid cassia, The Sickle Senna Wild Senna	*Cassia tora*
Parand	Honey-suckel mistle-toe	*Dendrophthoe falcate (syn. Loranthus longiflorus*
Parara,Paliro	Corky coral tree, flame tree	*Erythrina glabrescens*
Paror	Laurel-leaved snail tree	*Cocculus laurifolius*
Phalai	Amritsar-gum , black sally,	*Acacia modesta*

Range Officer S/C Taka Bead

5

Local Name	English Name	Botanical Name
	blackwood	*Grewia elastica*
Phalsa	Dhaman	*Ficus religiosa*
Pippal	Sacred fig	*Drypetes roxburghii* (syn. *Putranjiva roxburghii*)
Putajen	Child-life tree, Indian Amulet Plant, Spurious Wild Olive	*Holoptelea integrifolia*
Rajain,Pardesi	Indian elm, kanju	*Caesalpinia decapetala*
Ralan, Arlu	Mysore thorn, cat's claw	*Agave americana*
Ram ban	Century plant	*Xeromphis spinosa* (syn. *Randia dumetorum*)
Rara	Emetic nut	*Abrus precatotius*
Rattak	Crab's eye	*Acacia leucophloea*
Reru, riur	White babool, Distiller's acacia	*Litsea chinensis*
Rihan, meda-lakri	Indian laurel	*Sapindus mukorossi*
Ritha	Soap-nut tree	*Ficus sarmentosa*
Rudhar		*Ficus racemesa*
Rumbal	Cluster fig	*Tectona grandis*
Sagwan	Teak	*Ehretia aspera*
Sakar		*Shorea robusta*
Sal	Yellow Balau	*Millettia extensa*
Salangan		*Pueraria tuberose*
Salod	Indian kudju	*Engelhardtia spicata var colebrookia*
Samma		*Moringa oleifera*
Sanan Suhanjua	Drum-stick tree	*Ougeinia oujeinensis*
Sandan , sanan		*Celastrus panicultus*
Sankhiran	Black-Oil tree, Climbing-staff plant	*Jusminum disparmum*
Sarain	Jasmine	*Periploca calophylla*
Sarpri		*Osyris wightiana*
Sason	Wild tea	*Asparagus racemosus*
Satmnlia,Musli	Wild asparagus	*Dalbergia sissoo*
Shisham, Tali	Bombay blackwood, Indian rosewood, sissoo	*Morus laevigata*
Siah toot	Black fruited mulberry	*Morus australis*
Sia-toot	Japanese mulberry, Korean mulberry, Small-leaved mulberry tree	*Bombax ceiba*
Simble	Silk cotton tree	

Pranit
SIC Takedhar

6

Local Name	English Name	Botanical Name
Siris,Sarin	Lebbek-tree, fry-tree, flea-tree	*Albizzia lebbek*
Sukhchain	Pongam	*Deriss Indica (syn. Pongmia pinnata)*
Tatpalanga	Broken bones plant, Indian calosanthes, Indian Trumpet,	*Oroxylum indicum*
Terni		*Tylophora hirsuta*
Thor, Choon	Royle's Spurge	*Euphorbia royleana*
Toot	White mulberry	*Morus alba*
Tor	Camel's foot climber, malu-creeper	*Bauhinia vahlii*
Tun	Indian cedar, Indian mahogany Indian toon	*Toona cilata*
Unga	Aramina Fibre, Congo Jute	*Urena lobata*

****

Local Name	English Name	Scientific Name
	MAMMALS	
Adjgar	The Viper	*Vipera Russellii*
Bagh	Leopard	*Panthera pardus*
Ban billi	Leopard cat	*Felis bangalensis*
Bejoo	The Honey Badger	*Mellivora expensis*
Chamgadar	The Bat	*Pteropus medina*
Chuchundar	The Gray Musk	*Suncus Caeruleu*
Lamab	The Common Ratsnake	*Bungarus mucosus*
Giddar	Jackal	*Canis aurenus*
Gilehri	The Squirral	*Funanbulus pennanti*
Goh	The Land Monitor Lizard	*Varanus bengalensis*
Jangli billi	Jangle cat	*Felis chaus*
Kachuha	The common Land Tortoise	*Testudo flagans*
Kakkar	Barking deer	*Muntiacus-Muntjak(vaginlis)*
Khargosh	Hare	*Lepus nigricoilis*

Local Name	English Name	Scientific Name
Kirla (Girgit)	The Indian Chamalcon	*Chameleon calcartus*
Kirli	The Common House Lizard	*Hemidactylus gleadovii*
Lal Bandar	Rhesus monkey	*Macaca mulatta*
Langoor	Langoor common	*Preshytes entellus*
Lomari	Lomari	*Vulpie bengalensis Fox*
Nag	The King Cobra	*Naja hamoh*
Nilgai	Blue bull	*Boselaphus tragocamelus*
Para	Para	*Hog deer*
Phaniar	The Common Cobra	*Naja tripudians*
Sambhar	The Sambhar	*Cervus unicoler*
Saup	The Common Warm Snake	*Typhlops braminus*
Seh	Porcupine	*Hystric indica*
Suar	Wild boar	*Sus sacrofa*
	BIRDS	
Bagla	The grey Heron	*Ardea cinera*
Bagla	The little Egret	*Egretta garzotta*
Batair	The common quail	*Cotarnix cotarnix*
Bhojanga or Hojanga	The King Crow	*Dicrurus macrocucus*
Bulbul	The redvented bulbul	*Molpastar cafer*
Chhota Falta	The Indian Spotted Dove	*Stroptapelia shinensis*
Fakta	The Indian ring dove	*Stroptapelia decaocto*
Hudhud	The Hooper	*Upapa epops*
Jangli Murga	The Jungle fowl	*Galus gonnerathi*
Jangli Murghi	The red jungle fowl	*Gallus galus*
Kabutar	The blue rock pigion	*Columberalivia*
Kaikil	The common king fisher	*Aleedo atthis*
Kala Titar	The black partridge	*Framcolinus francolinus*
Koel	The Koel	*Endynamis seolopaceus*
Maina	The Common myna	*Acrdothere tristris*
Mor	The common pea fowl	*Paro cristetus*
Murgabi	The Indian duck	*Anas poeciborhyncha*
Neel Kanth	The Blue Jay or Roller	*Coracia bengalensis*
Pahari Bulbul	The red whiskered bulbul	*Otocompsa jacosa*
Pahari Kowva	The Himalyan Jangle Crow	*Corbus bevaillonti*
Pahari Titar	The hill partridge	*Arborophila forgueola*
Safaid Bagla	The cattle Egret	*Bulbulcus ibis*
Selva kabutar	The eastern stock pigion	*Colamba oena*
Tatiri	The wattled lapuring	*Lobivanallus indicus*
Titar	The gray partridge	*F pondicrianus*

8

Local Name	English Name	Scientific Name
Tota	The large Indian Parakeet	*Psittacula eupatria*
	REPTILES	
Azgar	Python	
Goh	Monitor Lizard	
Gunther	Pit viper	
Kala Nag	King Cobra	
Lamab	Rat Snake	
Nag	Cobra	
	FISH	
Deola	Murral	
Godh	Ecl	
Karad	Backwa	
Maha-sher	----	

****

Range Forest Officer
Forest Range
Una (H.P.)-174303

9

ANNEXURE-VII

NOC FROM GRAM PANCHAYAT

कार्यालय ग्राम पंचायत नंगल सलांगडी

विकास खंड ऊना तह & जिला ऊना (हि.प्र.)

दिनांक:- 12/12/2023

प्रस्ताव सं 07

आज दिनांक 12/12/2023 को ग्राम पंचायत नंगल सलांगडी की बैठक प्रधान श्रीमती आशा देवी जी की अध्यक्षता में पूर्ण कोरम की उपस्थिति मे सम्पन्न हुई व निम्न कार्यवाही अमल में लाई गई !

बिषय:- शिवा स्टोन क्रेशर धमान्दरी (भूपिंदर ठाकुर पुत्र विक्रम सिंह वासी गाँव चताडा) को संझोट के जमीन मालिकों की जमीन से रेत,बजरी,पत्थर उठाने हेतू अनापत्ति प्रमाण-पत्र देने बारे विचार विमर्श:-

बैठक में अध्यक्ष महोदय जी द्वारा प्रस्ताव पेश हुआ कि साधू राम पुत्र वसंता पुत्र किरपा गाँव संझोट ने अपनी जमीन 02-47-13 भूमि खेवट न. 84 मिन खतोनी 146 मिन खसरा न. 596,599 किता 2 जमाबंदी साल 2020-2021 शिवा स्टोन क्रेशर धमान्दरी (भूपिंदर ठाकुर पुत्र विक्रम सिंह वासी गाँव चताडा) को 29/11/2023 से 28/11/2038 तक रेत,बजरी,पत्थर उठाने के लिए लीज पर दी है ! ग्राम पंचायत अनापत्ति प्रमाण पत्र बारे विचार करे !

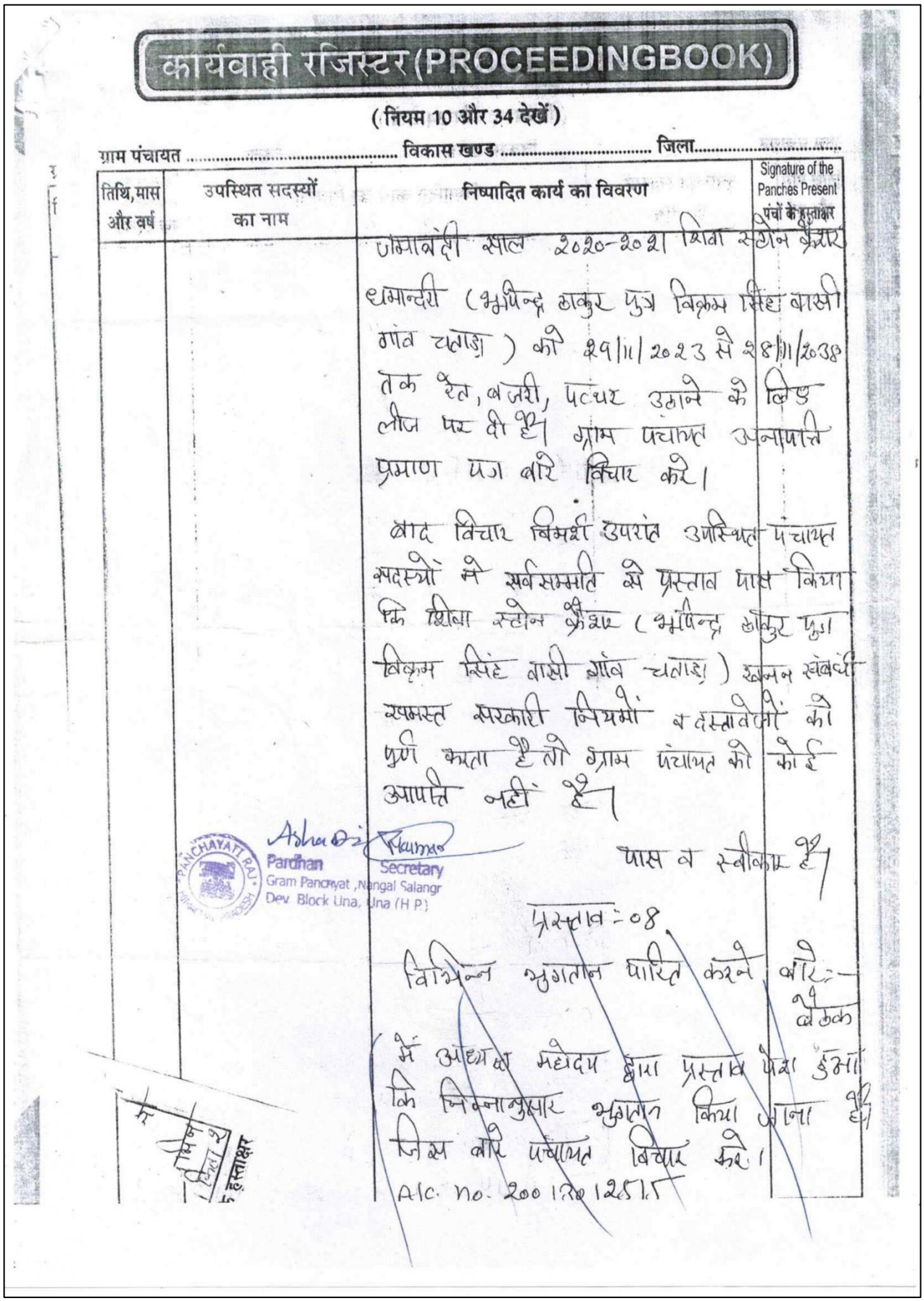
बाद विचार विमर्श उपरांत उपस्थित पंचायत सदस्यों ने सर्वसम्मति से प्रस्ताव पास किया कि शिवा स्टोन क्रेशर धमान्दरी (भूपिंदर ठाकुर पुत्र विक्रम सिंह वासी गाँव चताडा) खनन संबंधी समस्त सरकारी नियमों व दस्तावजों को पूर्ण करता है तो ग्राम पंचायत को कोई आपत्ति नहीं है !

पास व स्वीकार है !

प्रमाणित किया जाता है कि इस प्रस्ताव की प्रतिलिपि असल अनुसार सही व कार्यवाही रजिस्टर पर दर्ज है !

Pradhan Asha Devi
Gram Panch... Mangal Salangri
Teh & Distt. Una (H.P)

पंचायत सचिव
ग्राम पंचायत नंगलसलागडी
वि0 ख0 ऊना (हि0प्र0



कार्यवाही रजिस्टर (PROCEEDINGBOOK)

(नियम 10 और 34 देखें)

ग्राम पंचायत ..... विकास खण्ड ..... जिला.....

तिथि, मास और वर्ष	उपस्थित सदस्यों का नाम	निष्पादित कार्य का विवरण	Signature of the Panches Present पंचों के हस्ताक्षर

उपलब्धी साल 2020-2021 शिवा स्टोन क्रेशर धमान्दी (भूपिन्द्र ठाकुर पुत्र विक्रम सिंह वासी गांव चलाड़) को 29/11/2023 से 28/11/2038 तक रेत, बजरी, पत्थर उठाने के लिए लीज पर दी है। ग्राम पंचायत उपरोक्त प्रमाण पत्र बारे विचार करे।

बाद विचार बिमर्श उपरांत उपस्थित पंचायत सदस्यों ने सर्वसम्मति से प्रस्ताव पास किया कि शिवा स्टोन क्रेशर (भूपिन्द्र ठाकुर पुत्र विक्रम सिंह वासी गांव चलाड़) खनन संबंधी समस्त सरकारी नियमों व दस्तावेजों को पूर्ण करता है तो ग्राम पंचायत को कोई आपत्ति नहीं है।

Ashwani Kumar
Pardhan
Gram Panchayat, Nangal Salangr
Dev. Block Una, Una (H.P.)

Secretary

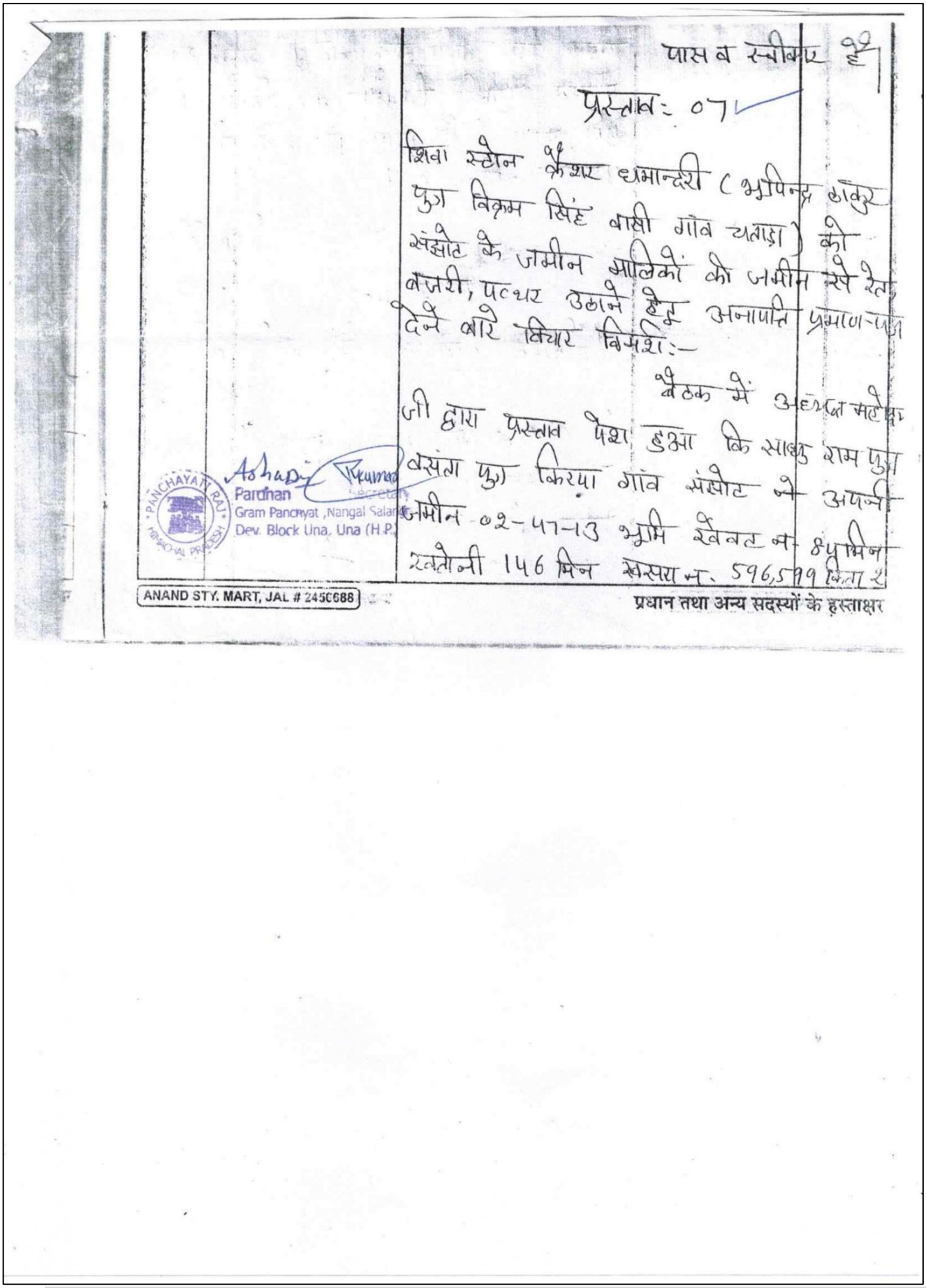
पास व स्वीकार है।

प्रस्ताव :- 08

विभिन्न भुगतान पारित करने बारे :-

मैं अध्यक्ष महोदय द्वारा प्रस्ताव पेश हुआ कि निम्नानुसार भुगतान किया जाना है जिस बारे पंचायत विचार करे।

A/c. no. 200178012515



पास व स्वीकृत है।

प्रस्ताव : 07

शिवा स्टोन क्रेशर धमान्दरी (भूपिन्द्र ठाकुर पुत्र विक्रम सिंह बासी गांव चलाड़ा) को संझोट के जमीन मालिकों की जमीन से रेत बजरी, पत्थर उठाने हेतु अनापत्ति प्रमाण-पत्र देने बारे विचार विमर्श :-

बैठक में उपस्थित महोदय जी द्वारा प्रस्ताव पेश हुआ कि साधु राम पुत्र बसंत पुत्र किरपा गांव संझोट ने अपनी जमीन 02-47-13 भूमि खेवट नं. 8 खामियन खतौनी 146 मिन खसरा नं. 596,599 किता 2

Pardhan
Gram Panchayat ,Nangal Salan
Dev. Block Una, Una (H.P.)

ANAND STY. MART, JAL # 2450688

प्रधान तथा अन्य सदस्यों के हस्ताक्षर

ANNEXURE-VIII(a)

WATER AFFIDAVIT

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Himachal Pradesh

e-Stamp

Certificate No.	:	**IN-HP33217978087470W**
Certificate Issued Date	:	13-Dec-2024 11:10 AM
Account Reference	:	NEWIMPACC (SV)/ hp19009104/ UNA/ HP-UN
Unique Doc. Reference	:	SUBIN-HPHP19009104606420490843 27W
Purchased by	:	BHUPINDER THAKUR
Description of Document	:	Article 4 Affidavit
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	BHUPINDER THAKUR
Second Party	:	Not Applicable
Stamp Duty Paid By	:	BHUPINDER THAKUR
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

S.V. UNA (H.P.) KAVITA DISTT. UNA

Please write or type below this line

IN-HP33217978087470W

NOTARY (INDIA) Dharam Singh Advocate Regd. No. 71 Sub-Divn. Una Valid upto 30/05/2027 GOVT. OF H.P.

Statutory Alert:

1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

AFFIDAVIT

I, **Bhupinder Thakur S/o Sh. Vikram Singh, aged 44 years, Prop of M/s Shiva Stone Crusher VPO Dhamandri, Tehsil & Distt. Una (H.P)-174306** do hereby solemnly affirm and declare as under:-

1. That project proponent for Mining project located at Khasra 596 & 599 land measuring 02-47-13 (Pvt. land hill slope) falling in Mauja & Mohal Sanjhot Tehsil & Distt. Una (H.P) gives this undertaking that water has been taken from own tubewell situated at Khasra 3376 Mauja & Mohal Dhamandri, Tehsil & Distt. Una (H.P),NOC from the concerned borewell department has been obtained.
2. That the above statement is true and correct.

Shiva Stone Crusher

DEPONENT

Prop.

VERIFICATION:-

I, the above named deponent further declare that the above statement is true and correct to best of my knowledge and belief and nothing has been concealed therein.

Shiva Stone Crusher

Prop.

DEPONENT

DATED:-13-Dec-2024

NOTARY * (INDIA) GOVT. OF H.P. — Dharam Singh Advocate, Regd. No. 71, Sub-Divn. Una, Valid upto 30/03/2027

Certified that this .... is presented for attestation by Sh. .... resident S/o. Sh. .... of village .... District .... and who is identified by .... or who is personally known to me as is entered at serial .... on date 13/12/2024 at .... time at ....(place)

ATTESTED NOTARY

ANNEXURE-VIII(b)

PLANTATION AFFIDAVIT

INDIA NON JUDICIAL

Government of Himachal Pradesh

सत्यमेव जयते

e-Stamp

Certificate No.	:	IN-HP42343574644225X
Certificate Issued Date	:	20-Mar-2025 01:26 PM
Account Reference	:	NEWIMPACC (SV)/ hp19009104/ UNA/ HP-UN
Unique Doc. Reference	:	SUBIN-HPHP19009104784122959511 90X
Purchased by	:	BHUPINDER THAKUR SHIVA STONE CRUSHER
Description of Document	:	Article 4 Affidavit
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	BHUPINDER THAKUR SHIVA STONE CRUSHER
Second Party	:	Not Applicable
Stamp Duty Paid By	:	BHUPINDER THAKUR SHIVA STONE CRUSHER
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

सत्यमेव जयते

S.V. UNA (H.P.) KAVITA DISTT. UNA

₹20

Please write or type below this line

GOVT. OFFICIAL NOTARY

Statutory Alert:
1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

E stamp No:IN-HP42343574644225X
Date: 20 Mar 25 Rs.20/-

AFFIDAVIT

I, Sh. Bhupinder Thakur, Prop. M/s Shiva Stone Crusher, situated at V.P.O-Dhamandari, Tehsil & District Una, H.P. do solemnly affirm and declare on oath as under:

1. That I have taken the land to carry out mining activities for the extraction/ collection of sand, stone & bajri for crusher unit falling in Khasra no. 596 and 599 measuring 02-47-13 Hectares, falling in Mauza/Mohal Sanjhot, Tehsil & District Una, H.P.
2. That I will plant an estimated 5000 native tree saplings varieties conducive to agro-climatic conditions of the area such as Kachnar, Drek, Amla, Poplar, Sahoot as a measure for reclamation of mined- out hill slope bearing Latitude 31.573645° and Longitude 76.263652° respectively.
3. That in addition to the above plantation, additional plantation will be planted along the entire length of the lease area.
4. That I will maintain the plantation to ensure its minimum 80% survival.

NOTARY GOVT. OF H.P. (INDIA)

Date: Mar 25

Deponent

Verification:

I the above-named deponent further affirm and declare that the statement in the affidavit is true and correct to the best of my knowledge and belief.

Certified ... by Sh. Bhupinder Thakur
M/s Shiva Stone Crusher
of Dhamandari District Una
Sh. Adv.
... to me as ... red
at ... 20/3/25 ... Una
time ... (place)

Deponent

ATTESTED
NOTARY

ANNEXURE-IX

LAND AGREEMENTS

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Himachal Pradesh

e-Stamp

Certificate No.	:	IN-HP08990715783504V
Certificate Issued Date	:	29-Nov-2023 11:31 AM
Account Reference	:	NONACC (BK)/ hppnbbk02/ UNA/ HP-UN
Unique Doc. Reference	:	SUBIN-HPHPPNBBK0215043084811299V
Purchased by	:	SADHU RAM
Description of Document	:	Article 35 Lease
Property Description	:	K 84 MIN K 146 MIN KH NO KITA-2 MOHAL SANJHOT T/D UNA AS PER DEED
Consideration Price (Rs.)	:	35,60,000 (Thirty Five Lakh Sixty Thousand only)
First Party	:	SADHU RAM
Second Party	:	BHUPINDER THAKUR
Stamp Duty Paid By	:	SADHU RAM
Stamp Duty Amount(Rs.)	:	26,700 (Twenty Six Thousand Seven Hundred only)

Please write or type below this line

बसोका नं० 2247
दिनांक 29-11-2023

उप-मण्डलाधिकारी
ऊना जिला ऊना

No 0379464 Himachal Government Judicial Paper

पट्टानामा मियादी 15 साल चकौता 1,00,000/- रू. प्रति साल यकमुश्त

कीमत अष्टाम 26700/-रूपये e-stamp Certificte No.IN-HP08990715783504V

Dated 29-11-2023, भूमि की दूरी अन्य सड़क से 650 मीटर है।

29-11-2023

पट्टानामा

मैं साधू राम आयु 59 साल सपुत्र श्री वसन्ता पुत्र श्री किरपा जात जट वासी गांव संझोट तह0 व जिला ऊना हि0प्र0

साधू राम

प्रथम पक्ष मालक जमीन

एवं

भूपिन्द्र ठाकुर आयु 41 साल पुत्र विक्रम सिंह पुत्र श्री हंस राज जात राजपूत वासी गांव चताड़ा तह0 व जिला ऊना हि0प्र0 प्रोप.शिवा स्टोन क्रैशर धमान्दरी तह0 व जिला ऊना हि0प्र0

द्वितीय पक्ष पट्टादार के हैं।

यह कि हम दोनों फरीकैन ने निम्नलिखित शर्तों के आधार पर मवाजी 02-47-13 भूमि खेबट न0 84 मिन खतौनी 146 मिन खसरा न0 596, 599 किता 2 वरूये नकल जमावन्दी साल 2020-2021 वाक्या महाल संझोट तह0 व जिला ऊना हि0प्र0 मलकीयत मकबूजा खुद प्रथम पक्ष वईवज मबलग 1,00,000/- रू. एक लाख रू. प्रति वर्ष यकमुश्त के हिसाब से द्वितीय पक्ष को मय जुमला हक हकूक हर किस्म सम्बन्धित भूमि पट्टा मियाद पन्द्रह साल ता तारीख 29.11.2023 ता 28.11.2038 तक वराये करने खनन पत्थर, रेत, बजरी व अन्य पट्टा पर दी है। शर्त है कि प्रथम पक्ष की जमीन खसरा न0 596, 599 किता 2 वरूये नकल जमावन्दी साल 2020-2021 वाक्या महाल संझोट तह0 व जिला ऊना हि0प्र0 में स्थित है तथा किसी भी किस्म के जर वार से बरी है। प्रथम पक्ष ने द्वितीय पक्ष को सलाना 1,00,000/- रू. (एक लाख रूपये) यकमुश्त प्रति वर्ष के लिए दी है। द्वितीय पक्ष बाद में प्रथम पक्ष उपरोक्त से यह भूमि खरीदना चाहेगा तो खरीद सकता है मगर भूमि की कीमत उस समय की शर्तों के अनुसार तय की जाएगी, लेकिन प्रथम पक्ष इस भूमि को अरसा मियाद पट्टा नामा तक किसी भी शक्ल में रैहन, वै, तबादला नहीं कर सकता है। द्वितीय पक्ष इस कारोबार में अगर किसी को अपना सांझीदार बनाना चाहेगा या इस भूमि को आगे किसी को वराये कारोबार अरसा मियाद पट्टानामा तक देने का हकदार होगा जिसवारे प्रथम पक्ष को कोई भी एतराज ना होगा। हर पांच वर्ष के बाद रकम पट्टा में 10 प्रतिशत की बृद्धि की जायेगी। कुल रकम पट्टा वराये एक वर्ष

साधू राम

बसाका नं. 2247
दिनांक 29-11-2023

उप-मण्डलाध्यक्ष
ऊना जिला ऊना

Nº 0379463 2023 **Himachal Government Judicial Paper.**

मबलग 1,00,000/- एक लाख रूपये वजरीया चैक न0 003660 आईडीबीआई बैंक वसन्त टॉवर नजदीक बस स्टैंड ऊना दिनांक 28.11.2023 द्वितीय पक्ष ने प्रथम पक्ष को अदा कर दिये हैं। जमीन मालक व द्वितीय पक्ष अरसा पट्टानामा खत्म होने के बाद इस भूमि का आईन्दा पट्टानामा तहरीर कर सकते हैं जिस वारे दोनों पक्षों को कोई एतराज ना होगा। लेकिन शर्तें उस समय के अनुसार तय की जाएगी। दौराने मियाद पट्टा प्रथम पक्ष इस भूमि में किसी भी किस्म की दखल अन्दाजी ना करेगा तथा यह पट्टानामा बदस्तूर पन्द्रह वर्ष तक कायम रहेगा। मियाद पट्टा खत्म हो जाने के बाद द्वितीय पक्ष की जिम्मेवारी होगी कि वह जमीन खाली करके हवाले प्रथम पक्ष करने का पावन्द होगा। कब्जा पट्टाशुद्धा भूमि पर आज से चकौतेदार का करा दिया है। अब चकौतेदार पट्टाशुद्धा भूमि पर हस्व मन्सा खुद खनन करे बाद होने खत्म मियाद पट्टानामा पटटेदार उपरोक्त भूमि खाली करके हवाले मालक करने का जिम्मेवार व पावन्द होगा अथवा आपस में नया पट्टानामा उस समय की शर्तों के अनुसार तहरीर कर लेंगे। अतः यह पट्टानामा मियाद पन्द्रह साल हर दो फरीकैन ने वखुशी खुद वकाईयमी होश हवास में लिख दिया है कि प्रमाण रहे। दिनांक 29.11.2023 कातिब :- [illegible] शर्मा वसीकानवीस ऊना रजिस्टर्ड नं० 215

गवाह [signature]
ASHWANI KUMAR
Numberdar Lam
Teh & Distt. Una (H.P

अलवद
श्री साधू राम
प्रथम पक्ष मालक जमीन
[signature: साधू राम]

अलवद
श्रीं भूपिन्द्र [signature]
द्वितीय पक्ष पट्टादार
[signature]

गवाह
श्री सुरेश कुमार पुत्र श्री साधू राम जात जट वासी गांव संझोट तह0 व जिला ऊना हि0प्र0
[signature: Suresh]

गवाह
[illegible]
[signature]

वसीका न0 2247
दिनांक 29-11-2023
[signature] उप-पंजीकरण अधिकारी ऊना जिला ऊना

2023/340/1/2258

Sadhu Ram(Individual)

Party No.	Party Name and Address	Finger Print	Signature
1	**Sadhu Ram** Village Sanjhot Tehsil and Distt Una HP Himachal Pradesh **PAN No.:**		
2	**Bhupinder Thakur** Village Chattara Tehsil and Distt Una HP Himachal Pradesh **PAN No.:**		

Witness:

Sr.NO	Witness Name and Address	Signature
1	**Suresh Kumar** **Address1 -** VPO Sanjhot Distt. Una HP , , , Himachal Pradesh	
2	**Ramit Sharma** **Address1 -** VPO Behdala Tehsil and Distt. Una HP , , , Himachal Pradesh	

Identifier:

Sr.NO	Identifier Name and Address	Signature
1	**Ashwani Kumar** **Address1 -** Village Lam PO Jhamber Tehsil and Distt. Una (HP) , , , Himachal Pradesh **PAN No.:**	

बसाका नं० 2247
दिनांक 29-11-2023
उप-पंजीकाध्यक्ष
ऊना जिला ऊना

CERTIFICATE OF REGISTRATION

(As per the provisions of Registration Act,1908)

The contents of Document read over and explained to the parties who understood all the contents/conditions and admit the execution to be correct. The parties and witnesses have been identified by **(Ashwani Kumar,Aadhaar Card-********1465)** . Hence, the document is here by REGISTERED.

बस्ता का नं० 2247
दिनांक 29-11-2023
Signature of Registering Officer
उप-मण्डलाधिकारी
ऊना जिला ऊना

2023/340/1/2258

Deed Endorsement

Token No :- 202300143996

District Name :Una — Una

This document is presented for registration by Sh./Smt.**Sadhu Ram** s/o/d/o/w/o **Basanta** before me today on **29-11-2023** Day of **Wednesday** at **16:19:01 PM**

बसाका नं० 2247
दिनांक 29-11-2023

Signature of Presenter

Signature of Registering Officer
उप-पंजीकार
ऊना जिला ऊना

Document Details

Book No:1 Registration No. : 2247/2023 **Registration Date :** 29-11-2023 **Description of Deed :** 35 - Lease or agreement of lease (Deed Sub Title - Where lease purports upto 100 years or exceeds) **Deed Execution Date :** 29-11-2023 **Market Value of Property :**Rs.3559000/- **Consideration Amount :**Rs.0/-
Stamp Duty :- Rs. 26700/-, **Registration Fee** :- Rs. 10680/-, **Pasting fee** :- Rs. 10/-,

Deed Pasting Detail	Annexure Pasting Detail
No.of Deed Pages:3	**No. of Annexure Pages:**14
Additional Book Volume No. : 201	**Supplementary Book Volume No. : 202**
From page : 69 **To page :** 71	**From page :** 13 **To page :** 26

Duty and Fee Details

Stamp Duty
Amount: Rs.26700/-
Payment Mode: E-STAMP
Certificate
Issued by:
Vide No.:IN-HP08990715783504V
Date:29-11-2023

Registration Fee/Pasting Fee
Amount: Rs.10/-
Payment Mode: E - Registration
Certificate
Issued by:
Vide No.:HP1167693331463
Date:29-11-2023

Amount: Rs.10680/-
Payment Mode: E - Registration
Certificate
Issued by:
Vide No.:HP1167693331463
Date:29-11-2023

बसाका नं० 2247
दिनांक 29-11-2023

Signature of Registering Officer
उप-पंजीकार
ऊना जिला ऊना

2401906257038O6

Government of Himachal Pradesh
e-Registration Fee Receipt

Receipt No	HP1167693331463
Issue Date	29-NOV-2023 11:44
ACC Reference	NONSH/PUNJAB NATIONAL BANK HIMACHAL PRADESH/UNA
ESI Certificate No	IN-HP08990715783504V
Purchased By	SADHU RAM
Registration Fees Paid By	SADHU RAM
Property Description	K 84 MIN K 146 MIN KH NO KITA-2 MOHAL SANJHOT T/D UNA AS PER DEED
Purpose	Article 35 Lease

Particulars	Amount (Rs.)
Registration Fee	₹ 10,680.00
Misc Charges	₹ 10.00
Total Amount	₹ 10,690.00

(Rupees Ten Thousand Six Hundred Ninety Only)

Signature and Stamp of Issuing Authority

Statutory Alert :

This is a receipt of fees collected and should not be treated as receipt of Registration.

The authenticity of e-Registration Fee Receipt can be be verified at website i.e. https://www.shcilestamp.com/Registration/ .

बसाका नं० 2247
दिनांक 29-11-2023

उप-पंजीकाध्यक्ष
ऊना जिला ऊना

राजस्व विभाग, हिमाचल प्रदेश - नकल जमाबंदी

एस.सी.ए रसीद संख्या: 3332115221914291

नाम : a

पिता/पति : a

नकल शुल्क : 4.00

सेवा शुल्क : 50

कुल शुल्क : 54

: ऊना

: ऊना

: नारी

: धमान्दरी

न. : 445

मोहाल : संझोट

साल : 2020-2021

रकबा ईकाई: है-आ-सै

नं. ……… नाम पत्ती या तरफ मय नाम नम्बरदार ……… मुताबला व शरह मुआमला व हबूब	खतौनी नं. ……… लगान जो मुजारा अदा करता है व तफसील शरह व तदाद	नाम मालिक व एहवाल	नाम काश्तकार व एहवाल	नाम चाह व दीगर वसायल आबपाशी	नम्बर खसरा हाल	रकबा हर खेत व मिजान खाता मय किस्म अराजी	हिस्सा या पैमाना हकीयत व तरीका बाछ	कैफियत
1	2	3	4	5	6	7	8	9
84 75 ……… बशरहा खेवट न. (1) ……… 0.00 माल 0.00 स्थाई 0.00	146 136 ………	साधू राम पुत्र वसन्ता पुत्र किरपा स्थानियें वासी	काश्त व कब्जा स्वंय	उठाऊ जल योजना	51 2215/52 294 350 [illegible] 543 551 551/1 553 554 596 599	00-01-56 बंजर कदीम 01-53-28 आबी 00-64-76 खड़काना 00-38-83 गै.मु.खड्ड 00-10-73 गै.मु.खड्ड 00-01-44 बारानी अव्वल 00-04-25 बंजर कदीम 00-41-11 बारानी अव्वल 00-01-60 खड़ैतर 00-43-59 बारानी अव्वल 01-76-02 खड़ैतर 00-71-11	कब्जा व पड़ता बशरह खेवट नं. (1)	नोटः- वरुये रपट नं. 83 दिनांक 13-09-2009 खेवट हजा का नम्बर खसरा 2215/52,554 किता 2 रकबा 1-96-87 हैक्ट. सालम मिनजानव साधू राम पुत्र वसन्ता वदले मु. 2,50,000/-रुपये वहक स्टेट बैंक आफ इण्डिया शाखा वसाल आड रहन है। 469 पट्टादारी नोट:- वरुये ई. नं. 469 पट्टा नामा मियादी 15 साल द्वारा खेवट हजा के नंबरान खसरा 596 -599 किता (2) रकबा तदादी 02-47-13 हैक्ट सालम मिनजानिब साधू राम पुत्र वसन्ता पुत्र किरपा पट्टा दहिन्दा सुनील चौधरी पुत्र जगदीश राम पुत्र सूबा राम वासी गावा सिंधिया निरफ व सुरेश

नोट:- बरूये इं० न० 528 वापसी पट्टानामा द्वारा खेवट हजा के नम्बरान खसरा 596-599 किता (2) रकबा तदादी 02-47-13 हैक्टर सालम जो कि बरूये इन्तकाल न० 469 पट्टानामा मियादी द्वारा मिनजानिब साधू राम पुत्र वसन्ता पुत्र किरपा पट्टा दहिन्दा बेहक सुनील चौधरी पुत्र जगदीश राम पुत्र सूबा राम जात-हिन्दू गुज्जर वासी [illegible] व [illegible] अग्रवाल पुत्र [illegible] जाति जट वासी कोटला [illegible] दिनांक 15-01-2021 को स्वीकार हुआ था अब बाद वापसी पट्टानामा बहक साधू राम पुत्र वसन्ता पुत्र किरपा के नाम [illegible] होकर दिनांक 20-10-23 को स्वीकार हो चुका है।

नोट न० 2 [illegible] खसरा 596-599 [illegible] 650 [illegible] रिपोर्ट [illegible] कार्यवाही हेतु [illegible] प्रेषित

वसीका नं० 2347 दिनांक 29-11-2023

उप-पंजीकाध्यक्ष ऊना जिला ऊना।

[illegible] Ward No. [illegible] Mobile No. 981[illegible]

Patwari [illegible] 28/11/2023

निकनेट : हिमाचल प्रदेश - शिमला

दिनाँक: 28-Nov-2023

Teh. [illegible] Distt. Una (पृष्ठ संख्या: 1

ANNEXURE-X

TEST REPORTS
AMBIENT AIR QUALITY

CHANDIGARH POLLUTION TESTING LABORATORY
(Environmental Monitoring, EIA, NOC, ETP, STP)

H.O. : #372, Sector 15-A, Chandigarh-160 015
Phone : 0172-4669295
Lab : E-126, Phase-VII, Indl. Area, Mohali - 160055
Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/01(A)
REPORTING DATE: 14-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	15-03-2025, 18-03-2025, 22-03-2025, 25-03-2025 31-03-2025, 02-04-2025, 05-04-2025, 08-04-2025, 12-04-2025, 15-04-2025, 21-04-2025, 22-04-2025 03-05-2025, 06-05-2025, 10-05-2025, 13-05-2025, 17-05-2025, 20-05-2025, 24-05-2025, 27-05-2025 31-05-2025, 03-06-2025, 07-06-2025, 10-06-2025
Point of Sample Collection	Project Site (31°34'24.54"N & 76°15'38.76"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/01(A)
Analysis Duration	17-03-2025 To 14-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
17-03-2025	78.8	40.4	6.2	14.0	BDL	20.2	BDL	BDL	0.51	BDL	BDL	BDL
19-03-2025	79.6	41.3	6.2	13.0	BDL	20.4	BDL	BDL	0.51	BDL	BDL	BDL
24-03-2025	81.2	38.8	6.5	12.4	BDL	20.1	BDL	BDL	0.52	BDL	BDL	BDL
26-03-2025	76.6	37.9	6.4	13.6	BDL	20.2	BDL	BDL	0.51	BDL	BDL	BDL
01-04-2025	78.8	38.8	6.3	12.0	BDL	20.3	BDL	BDL	0.52	BDL	BDL	BDL
03-04-2025	77.7	40.4	6.3	12.5	BDL	20.2	BDL	BDL	0.54	BDL	BDL	BDL
07-04-2025	78.5	42.1	6.5	12.3	BDL	20.2	BDL	BDL	0.55	BDL	BDL	BDL
09-04-2025	79.6	40.0	6.4	13.6	BDL	20.3	BDL	BDL	0.54	BDL	BDL	BDL
14-04-2025	76.5	39.6	6.1	13.4	BDL	20.1	BDL	BDL	0.52	BDL	BDL	BDL
16-04-2025	77.4	38.3	6.2	14.2	BDL	20.2	BDL	BDL	0.53	BDL	BDL	BDL
22-04-2025	78.2	41.3	6.0	13.2	BDL	20.2	BDL	BDL	0.54	BDL	BDL	BDL
23-04-2025	76.6	41.3	6.0	12.4	BDL	20.2	BDL	BDL	0.52	BDL	BDL	BDL
05-05-2025	79.5	40.4	6.1	13.4	BDL	20.3	BDL	BDL	0.51	BDL	BDL	BDL
07-05-2025	78.8	42.1	6.1	13.3	BDL	20.2	BDL	BDL	0.53	BDL	BDL	BDL
12-05-2025	80.2	43.3	6.0	12.4	BDL	20.2	BDL	BDL	0.52	BDL	BDL	BDL
14-05-2025	81.2	41.3	6.2	13.6	BDL	20.2	BDL	BDL	0.55	BDL	BDL	BDL
19-05-2025	78.8	40.0	6.3	13.2	BDL	20.1	BDL	BDL	0.53	BDL	BDL	BDL
21-05-2025	79.6	42.1	6.4	14.2	BDL	20.2	BDL	BDL	0.51	BDL	BDL	BDL
26-05-2025	78.8	43.3	6.6	13.2	BDL	20.2	BDL	BDL	0.52	BDL	BDL	BDL
28-05-2025	79.9	40.4	6.2	12.2	BDL	20.2	BDL	BDL	0.53	BDL	BDL	BDL
02-06-2025	80.2	40.8	6.2	14.2	BDL	20.2	BDL	BDL	0.54	BDL	BDL	BDL
04-06-2025	81.2	42.1	6.1	13.3	BDL	20.3	BDL	BDL	0.52	BDL	BDL	BDL
09-06-2025	80.4	38.3	6.2	12.2	BDL	20.2	BDL	BDL	0.52	BDL	BDL	BDL
11-06-2025	79.8	39.6	6.4	13.4	BDL	20.2	BDL	BDL	0.51	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 14/6/2025

(Reviewed & Authorized By)
Date: 14/6/2025

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END OF REPORT

CHANDIGARH POLLUTION TESTING LABORATORY
(Environmental Monitoring, EIA, NOC, ETP, STP)

H.O. : #372, Sector 15-A, Chandigarh-160 015
Phone : 0172-4669295
Lab : E-126, Phase-VII, Indl. Area, Mohali - 160055
Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/02(A)
REPORTING DATE: 14-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.),**
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-1
Sampling Method	CPTL/SM/01
Date of Sampling	15-03-2025, 18-03-2025, 22-03-2025, 25-03-2025 31-03-2025, 02-04-2025, 05-04-2025, 08-04-2025, 12-04-2025, 15-04-2025, 21-04-2025, 22-04-2025 03-05-2025, 06-05-2025, 10-05-2025, 13-05-2025, 17-05-2025, 20-05-2025, 24-05-2025, 27-05-2025 31-05-2025, 03-06-2025, 07-06-2025, 10-06-2025
Point of Sample Collection	Harsa Jandora (31°35'57.19"N & 76°15'31.65"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/02(A)
Analysis Duration	17-03-2025 To 14-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	NH_3 ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	BaP (ng/m^3)	CO (mg/m3)	Pb ($\mu g/m^3$)	Ni (ng/m^3)	As (ng/m^3)
17-03-2025	64.5	38.3	6.2	14.0	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
19-03-2025	66.1	36.7	6.2	13.0	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
24-03-2025	68.4	37.1	6.5	15.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
26-03-2025	64.4	38.3	6.4	14.6	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
01-04-2025	63.3	37.9	6.3	13.0	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
03-04-2025	65.1	34.2	6.3	15.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
07-04-2025	65.5	36.7	6.5	14.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
09-04-2025	64.6	38.3	6.4	15.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-04-2025	69.5	37.5	6.2	14.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
16-04-2025	64.2	38.8	6.2	14.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
22-04-2025	65.2	38.3	6.4	13.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
23-04-2025	66.2	38.8	6.4	14.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
05-05-2025	68.2	36.7	6.6	14.2	BDL	20.5	BDL	BDL	BDL	BDL	BDL	BDL
07-05-2025	67.2	37.1	6.5	15.3	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
12-05-2025	68.2	34.6	6.4	15.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-05-2025	69.5	36.3	6.5	14.7	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
19-05-2025	66.2	33.3	6.6	13.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
21-05-2025	65.2	34.2	6.6	12.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
26-05-2025	67.5	36.3	6.2	13.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
28-05-2025	68.2	35.4	6.2	14.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
02-06-2025	69.6	33.3	6.4	14.1	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
04-06-2025	68.8	36.3	6.1	14.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
09-06-2025	67.4	35.4	6.2	14.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
11-06-2025	66.6	34.2	6.3	13.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In Charge)
Date: 14/6/2025

(Reviewed & Authorized By)
Date: 14/06/2025

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Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/03(A)
REPORTING DATE: 14-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.),**
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	15-03-2025, 18-03-2025, 22-03-2025, 25-03-2025 31-03-2025, 02-04-2025, 05-04-2025, 08-04-2025, 12-04-2025, 15-04-2025, 21-04-2025, 22-04-2025 03-05-2025, 06-05-2025, 10-05-2025, 13-05-2025, 17-05-2025, 20-05-2025, 24-05-2025, 27-05-2025 31-05-2025, 03-06-2025, 07-06-2025, 10-06-2025
Point of Sample Collection	Nagar Chauki (31°34'51.19"N & 76°14'40.98"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/03(A)
Analysis Duration	17-03-2025 To 14-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
17-03-2025	66.6	40.4	6.2	14.0	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
19-03-2025	63.2	38.0	6.2	13.0	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
24-03-2025	60.2	40.4	6.5	15.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
26-03-2025	61.4	40.4	6.4	14.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
01-04-2025	62.2	40.8	6.3	13.0	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
03-04-2025	64.5	41.7	6.3	15.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
07-04-2025	63.8	42.5	6.5	14.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
09-04-2025	64.4	42.9	6.4	16.6	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
14-04-2025	65.2	36.3	6.1	15.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
16-04-2025	62.6	34.2	6.3	16.2	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
22-04-2025	63.3	32.1	6.4	15.8	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
23-04-2025	64.5	35.4	6.2	16.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
05-05-2025	65.2	33.3	6.5	16.3	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
07-05-2025	64.2	32.1	6.6	16.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
12-05-2025	66.6	31.7	6.6	14.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-05-2025	65.6	34.6	6.3	13.3	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
19-05-2025	66.3	31.7	6.2	14.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
21-05-2025	65.2	32.5	6.1	13.5	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
26-05-2025	65.8	39.0	6.6	15.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
28-05-2025	65.9	34.2	6.2	13.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
02-06-2025	64.6	35.4	6.4	15.7	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
04-06-2025	65.5	34.2	6.6	13.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
09-06-2025	64.3	33.3	6.2	14.8	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
11-06-2025	63.8	35.0	6.1	14.5	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	IS:5182 (P-23)	IS:5182 (P-24)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-25)	IS:5182 (P-9)	IS:5182 (P-11)	IS:5182 (P-12)	IS:5182 (P-10)	IS:5182 (P-22)	IS:5182 (P-26)	CPCB Manual

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 14/6/2025

(Reviewed & Authorized By)
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Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/04(A)
REPORTING DATE: 14-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.),**
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	15-03-2025, 18-03-2025, 22-03-2025, 25-03-2025 31-03-2025, 02-04-2025, 05-04-2025, 08-04-2025, 12-04-2025, 15-04-2025, 21-04-2025, 22-04-2025 03-05-2025, 06-05-2025, 10-05-2025, 13-05-2025, 17-05-2025, 20-05-2025, 24-05-2025, 27-05-2025 31-05-2025, 03-06-2025, 07-06-2025, 10-06-2025
Point of Sample Collection	Talap (31°34'50.58"N & 76°13'56.39"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/04(A)
Analysis Duration	17-03-2025 To 14-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
17-03-2025	63.2	39.0	6.3	12.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
19-03-2025	65.2	35.0	6.6	13.4	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
24-03-2025	62.4	31.3	6.4	12.8	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
26-03-2025	61.3	34.2	6.3	13.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
01-04-2025	64.4	33.3	6.2	13.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
03-04-2025	65.5	32.5	6.4	12.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
07-04-2025	63.5	33.3	6.2	13.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
09-04-2025	64.5	34.6	6.3	13.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
14-04-2025	63.3	35.4	6.3	13.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
16-04-2025	66.6	36.3	6.5	13.6	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
22-04-2025	65.3	32.1	6.5	13.5	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
23-04-2025	63.3	35.4	6.6	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
05-05-2025	65.2	33.3	6.3	12.3	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
07-05-2025	64.2	32.5	6.2	12.1	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
12-05-2025	62.2	34.2	6.3	13.8	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-05-2025	63.5	35.4	6.5	13.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
19-05-2025	64.3	32.5	6.2	13.6	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
21-05-2025	62.2	35.4	6.2	13.2	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
26-05-2025	64.2	34.6	6.1	12.8	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
28-05-2025	63.2	36.3	6.2	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
02-06-2025	61.3	35.4	6.3	12.6	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
04-06-2025	64.2	32.5	6.6	12.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
09-06-2025	63.3	34.2	6.2	12.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
11-06-2025	62.8	33.3	6.3	13.6	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 14/6/2025

(Reviewed & Authorized By)
Date: 14/06/2025

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Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/06(A)
REPORTING DATE: 19-06-2025

NAME OF INDUSTRY: Sh. BHUPINDER THAKUR (PROP.),
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	19-03-2025, 21-03-2025, 26-03-2025, 28-03-2025 04-04-2025, 09-04-2025, 11-04-2025, 16-04-2025, 18-04-2025, 23-04-2025, 25-04-2025, 26-04-2025 07-05-2025, 09-05-2025, 14-05-2025, 16-05-2025, 21-05-2025, 23-05-2025, 28-05-2025, 30-05-2025 05-06-2025, 19-06-2025, 11-06-2025, 13-06-2025
Point of Sample Collection	Khurwain (31°33'47.72"N & 76°18'1.81"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/06(A)
Analysis Duration	20-03-2025 To 19-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
20-03-2025	68.6	32.5	6.1	12.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
22-03-2025	64.5	33.3	6.2	13.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
27-03-2025	66.6	35.0	6.4	12.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
29-03-2025	65.3	34.2	6.2	13.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
05-04-2025	65.3	36.3	6.2	13.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
10-04-2025	64.2	35.0	6.2	12.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
12-04-2025	66.6	34.2	6.1	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
17-04-2025	68.6	33.3	6.3	12.3	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
19-04-2025	62.3	33.3	6.2	13.5	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
24-04-2025	64.5	31.3	6.1	12.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
26-04-2025	65.6	32.5	6.2	13.8	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
28-04-2025	66.3	32.5	6.2	13.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
08-05-2025	61.5	31.3	6.2	13.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
10-05-2025	64.6	32.5	6.2	12.6	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
15-05-2025	65.3	34.2	6.2	12.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
17-05-2025	66.6	36.3	6.0	13.6	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
22-05-2025	62.3	35.0	6.0	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
24-05-2025	63.5	34.2	6.3	13.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
29-05-2025	62.4	35.0	6.6	13.5	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
31-05-2025	64.3	34.2	6.2	12.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
05-06-2025	65.2	32.5	6.3	13.6	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
07-06-2025	64.2	35.0	6.1	13.8	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
12-06-2025	63.5	34.2	6.2	13.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-06-2025	62.2	36.3	6.3	12.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 19/6/2025

(Reviewed & Authorized By)
Date: 19/6/2025

- The results are related to test items only.
- This certificate is not to be reproduced wholly or in part and cannot be used as evidence in the court of law.
- Sample will be destroyed after retention time unless otherwise specified.

Page 1 of 1

END OF REPORT

CHANDIGARH POLLUTION TESTING LABORATORY
(Environmental Monitoring, EIA, NOC, ETP, STP)

H.O. : #372, Sector 15-A, Chandigarh-160 015
Phone : 0172-4669295
Lab : E-126, Phase-VII, Indl. Area, Mohali - 160055
Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/05(A)
REPORTING DATE: 19-06-2025

NAME OF INDUSTRY: Sh. BHUPINDER THAKUR (PROP.),
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	19-03-2025, 21-03-2025, 26-03-2025, 28-03-2025 04-04-2025, 09-04-2025, 11-04-2025, 16-04-2025, 18-04-2025, 23-04-2025, 25-04-2025, 26-04-2025 07-05-2025, 09-05-2025, 14-05-2025, 16-05-2025, 21-05-2025, 23-05-2025, 28-05-2025, 30-05-2025 05-06-2025, 19-06-2025, 11-06-2025, 13-06-2025
Point of Sample Collection	Kaint (31°34'20.41"N & 76°16'0.96"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/05(A)
Analysis Duration	20-03-2025 To 19-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
20-03-2025	63.3	38.3	6.2	14.0	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
22-03-2025	64.2	33.3	6.2	13.0	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
27-03-2025	62.2	32.5	6.5	15.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
29-03-2025	63.2	31.7	6.4	14.6	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
05-04-2025	64.4	33.3	6.3	13.0	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
10-04-2025	61.2	34.6	6.3	15.5	BDL	20.0	BDL	BDL	BDL	BDL	BDL	BDL
12-04-2025	65.6	35.0	6.5	14.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
17-04-2025	63.2	36.3	6.4	12.3	BDL	20.8	BDL	BDL	BDL	BDL	BDL	BDL
19-04-2025	64.2	35.0	6.3	13.4	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
24-04-2025	64.2	32.1	6.2	13.2	BDL	20.5	BDL	BDL	BDL	BDL	BDL	BDL
26-04-2025	62.2	34.2	6.1	13.4	BDL	20.6	BDL	BDL	BDL	BDL	BDL	BDL
28-04-2025	65.2	35.0	6.0	12.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
08-05-2025	63.5	31.3	6.3	12.1	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
10-05-2025	62.2	32.1	6.3	12.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
15-05-2025	64.2	34.6	6.2	13.5	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
17-05-2025	63.3	35.4	6.5	13.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
22-05-2025	66.2	36.3	6.4	13.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
24-05-2025	62.4	32.5	6.2	12.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
29-05-2025	63.4	32.1	6.2	13.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
31-05-2025	62.2	34.2	6.2	13.8	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
05-06-2025	64.4	33.3	6.6	12.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
07-06-2025	62.3	34.2	6.6	13.2	BDL	202	BDL	BDL	BDL	BDL	BDL	BDL
12-06-2025	64.4	36.3	6.2	13.6	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
14-06-2025	65.4	34.2	6.2	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 19/6/2025

(Reviewed & Authorized By)
Date: 19/06/2025

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END OF REPORT

CHANDIGARH POLLUTION TESTING LABORATORY
(Environmental Monitoring, EIA, NOC, ETP, STP)

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Phone : 0172-4669295
Lab : E-126, Phase-VII, Indl. Area, Mohali - 160055
Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/07(A)
REPORTING DATE: 19-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	19-03-2025, 21-03-2025, 26-03-2025, 28-03-2025 04-04-2025, 09-04-2025, 11-04-2025, 16-04-2025, 18-04-2025, 23-04-2025, 25-04-2025, 26-04-2025 07-05-2025, 09-05-2025, 14-05-2025, 16-05-2025, 21-05-2025, 23-05-2025, 28-05-2025, 30-05-2025 05-06-2025, 19-06-2025, 11-06-2025, 13-06-2025
Point of Sample Collection	Ambhera Dhiraj (31°34'4.46"N & 76°15'1.79"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/07(A)
Analysis Duration	20-03-2025 To 19-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
20-03-2025	63.2	32.5	6.3	12.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
22-03-2025	64.2	40.8	6.2	12.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
27-03-2025	63.3	34.6	6.4	13.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
29-03-2025	62.2	36.7	6.5	12.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
05-04-2025	62.2	32.5	6.6	13.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
10-04-2025	64.2	31.3	6.2	12.8	BDL	20.5	BDL	BDL	BDL	BDL	BDL	BDL
12-04-2025	61.2	32.5	6.1	12.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
17-04-2025	61.3	32.5	6.2	13.4	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
19-04-2025	62.2	34.6	6.3	13.6	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
24-04-2025	64.2	33.3	6.4	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
26-04-2025	62.1	34.2	6.5	13.5	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
28-04-2025	62.1	35.0	6.2	12.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
08-05-2025	64.2	31.7	6.2	13.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
10-05-2025	64.3	32.5	6.4	12.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
15-05-2025	62.1	32.5	6.5	14.3	BDL	20.5	BDL	BDL	BDL	BDL	BDL	BDL
17-05-2025	62.3	34.2	6.6	15.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
22-05-2025	61.2	33.3	6.6	16.5	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
24-05-2025	61.2	34.6	6.2	16.5	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
29-05-2025	61.3	35.0	6.3	14.3	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
31-05-2025	62.3	35.4	6.2	13.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
05-06-2025	64.2	34.6	6.1	12.5	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
07-06-2025	61.2	33.3	6.2	12.5	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
12-06-2025	61.3	32.5	6.3	13.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-06-2025	62.3	31.7	6.3	13.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 19/6/2025

(Reviewed & Authorized By)
Date: 19/06/2025

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END OF REPORT

CHANDIGARH POLLUTION TESTING LABORATORY
(Environmental Monitoring, EIA, NOC, ETP, STP)

H.O. : #372, Sector 15-A, Chandigarh-160 015
Phone : 0172-4669295
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Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AA)

REPORT No. CPTLE/SSC/2025/08(A)
REPORTING DATE: 19-06-2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.),**
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Type of Sample	Ambient Air
Time period for Sampling	1440 Minutes
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Date of Sampling	19-03-2025, 21-03-2025, 26-03-2025, 28-03-2025 04-04-2025, 09-04-2025, 11-04-2025, 16-04-2025, 18-04-2025, 23-04-2025, 25-04-2025, 26-04-2025 07-05-2025, 09-05-2025, 14-05-2025, 16-05-2025, 21-05-2025, 23-05-2025, 28-05-2025, 30-05-2025 05-06-2025, 19-06-2025, 11-06-2025, 13-06-2025
Point of Sample Collection	Dhamandri (31°33'17.23"N & 76°15'45.96"E)
Environmental Conditions	Normal
Sample Identification No.	CPTLE/SSC/2025/08(A)
Analysis Duration	20-03-2025 To 19-06-2025
Sample Collected By	Amrit Singh & Team

TEST RESULTS

Date of Sample Received	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	NH_3 (µg/m³)	O_3 (µg/m³)	Benzene (µg/m³)	BaP (ng/m³)	CO (mg/m3)	Pb (µg/m³)	Ni (ng/m³)	As (ng/m³)
20-03-2025	63.2	32.1	6.3	12.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
22-03-2025	64.2	34.2	6.2	10.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
27-03-2025	61.2	35.4	6.6	12.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
29-03-2025	62.2	36.7	6.3	13.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
05-04-2025	64.3	32.5	6.2	12.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
10-04-2025	63.3	32.5	6.4	12.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
12-04-2025	62.2	32.1	6.2	14.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
17-04-2025	64.2	33.3	6.3	13.2	BDL	20.4	BDL	BDL	BDL	BDL	BDL	BDL
19-04-2025	63.3	35.4	6.2	13.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
24-04-2025	62.3	34.2	6.2	14.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
26-04-2025	61.3	32.1	6.1	12.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
28-04-2025	61.2	31.3	6.4	12.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
08-05-2025	62.2	33.3	6.3	10.2	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
10-05-2025	64.2	35.4	6.6	11.2	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
15-05-2025	63.3	34.2	6.6	12.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
17-05-2025	64.2	32.5	6.3	14.3	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
22-05-2025	65.2	33.3	6.3	12.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
24-05-2025	64.2	35.4	6.4	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
29-05-2025	63.3	32.5	6.5	12.6	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
31-05-2025	62.3	36.3	6.3	13.2	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
05-06-2025	64.2	35.0	6.3	13.1	BDL	20.3	BDL	BDL	BDL	BDL	BDL	BDL
07-06-2025	62.3	33.3	6.1	12.4	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
12-06-2025	63.3	32.5	6.4	12.4	BDL	20.2	BDL	BDL	BDL	BDL	BDL	BDL
14-06-2025	62.4	31.3	6.0	12.3	BDL	20.1	BDL	BDL	BDL	BDL	BDL	BDL
Prescribed Standard	**100**	**60**	**80**	**80**	**400**	**100**	**05**	**01**	**4.0**	**1.0**	**20.0**	**06**
DL	-	-	-	-	**20.0**	-	**0.5**	**0.9**	**0.5**	**0.1**	**5.0**	**0.7**
Test Methods	**IS:5182 (P-23)**	**IS:5182 (P-24)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-25)**	**IS:5182 (P-9)**	**IS:5182 (P-11)**	**IS:5182 (P-12)**	**IS:5182 (P-10)**	**IS:5182 (P-22)**	**IS:5182 (P-26)**	**CPCB Manual**

BDL- Below Detection Limit, DL-Detection Limit

(Chemist In-Charge)
Date: 19/6/2025

(Reviewed & Authorized By)
Date: 19/06/2025

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Website : www.cptl.co.in

Format No. CPTLEIA(W)

TEST CERTIFICATE

REPORT No. CPTLE/SSC/2025/01-04(W)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Date of Sample Collection	18.03.2025
Date of Sample Received in Lab	19.03.2025
Sampling Plan Ref. No.	CPTLF7.3-1
Sampling Method	CPTL/SM/01
Type of Sample	Ground water
Sample Identification No.	CPTLE/SSC/2025/01-04(W)
Point of Sample Collection	Borewell- GW_1-Project Site (31°33'24.24"N & 76°14'49.44"E), GW_2 –Harsa Jandora(31°35'57.19"N & 76°15'31.65"E) GW_3 –Nagar Chauki (31°34'51.19"N & 76°14'40.98"E), GW_4 – Talap (31°34'50.58"N & 76°13'56.39"E)
Environmental Conditions	Normal
Quantity & Packaging	2.0 liters in plastic bottle +250ml in sterilized glass bottle each
Analysis Duration	19.03.2025 to 24.03.2025
Sample Collected By	Amrit Singh& Team
Visual Observation	Clear and colorless.

TEST RESULTS

S. N	Parameters	Results				Acceptable Limit	Permissible Limit	Test Method
		GW_1	GW_2	GW_3	GW_4			
1.	pH	7.32	7.43	7.21	7.33	6.5-8.5	No relaxation	IS:3025 (P-11): 2022
2.	Color, HU	<5	<5	<5	<5	5	15	IS:3025 (P-4): 2021
3.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025:P-5:2021
4.	Turbidity, NTU	<1	<1	<1	<1	1 Max.	5	IS:3025 (P-10): 2023
5.	Total Dissolved Solids, mg/l	284	299	308	284	500 Max.	2000	IS:3025 (P-16) :2023
6.	Total Hardness (as $CaCO_3$), mg/l	245	250	270	260	200 Max.	600	IS:3025 (P-21): 2009
7.	Calcium (as Ca^{++}), mg/l	34.0	42.0	46.0	38.0	75 Max.	200	IS:3025 (P-40): 2004
8.	Magnesium (as Mg^{++}), mg/l	15.6	16.8	19.2	18.0	30 Max.	100	IS:3025:P-46:2023
9.	Total Alkalinity (as $CaCO_3$), mg/l	225	240	250	215	200 Max.	600	IS:3025 (P-23):2023
10.	Chloride (as Cl), mg/l	17.4	19.9	12.4	22.4	250 Max.	1000	IS:3025 (P-32): 1988
11.	Sulphate (as SO_4), mg/l	24.7	32.7	28.5	26.5	200 Max.	400	IS:3025 (P-24): Sec-1:2022
12.	Iron (as Fe), mg/l	0.13	0.12	0.12	0.11	1.0 Max.	No relaxation	IS: 3025(Part-53), 2024
13.	Zinc (as Zn), mg/l	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	5 Max.	15	IS:3025 (P-49) : 1994
14.	Nitrate (as NO_3), mg/l	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	45 Max.	No relaxation	IS: 3025(Part-34) Sec-1:2023
15.	Chromium (as Cr), mg/l	ND (DL-0.005)	ND (DL-0.005)	ND (DL-0.005)	ND (DL-0.005)	0.05 Max.	No relaxation	IS:3025 (P-52): 2021
16.	Manganese (as Mn), mg/l	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	0.1 Max.	0.3	IS:3025 (P-59): 2023

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Website : www.cptl.co.in

Type of Sample	Ground water
Date of Sample Collection	18.03.2025

S. N	Parameters	Results				Acceptable Limit	Permissible Limit	Test Method
		GW_1	GW_2	GW_3	GW_4			
17.	Mercury (as Hg), mg/l	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	0.001 Max.	No relaxation	IS:3025:P-48:1994
18.	Cadmium (as Cd), mg/l	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	0.003 Max.	No relaxation	IS:3025 (P-41):2023
19.	Fluoride (as F), mg/l	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	1.0 Max.	1.5	APHA 24th Edition 4500-F (D) SPADNS Method: 2023
20.	Residual Chlorine (as Cl_2), mg/l	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	0.2	1.0	IS:3025 (P-26) :2021
21.	E.coli/100ml	Absent	Absent	Absent	Absent	Absent	Absent	IS: 15185: 2016
22.	Total Coliform, MPN/100ml	<2	<2	<2	<2	<2	<2	IS: 15185: 2016

ND- Not Detected
DL-Detection Limit

(Chemist In-Charge)
Date: 24/3/2025

(Reviewed & Authorized By)
Date: 24-3-2025

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END OF REPORT

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Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(W)

REPORT No. CPTLE/SSC/2025/05-08(W)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Date of Sample Collection	19.03.2025
Date of Sample Received in Lab	20.03.2025
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Type of Sample	Ground water
Sample Identification No.	CPTLE/SSC/2025/05-08(W)
Point of Sample Collection	Borewell- GW_5–Kaint (31°34'20.41"N & 76°16'0.96"E) , GW_6– Khurwain (31°33'47.72"N & 76°18'1.81"E), GW_7–Ambhera Dhiraj (31°35'4.46"N & 76°15'1.79"E), GW_8– Dhamandri (31°33'17.23"N & 76°15'45.96"E)
Environmental Conditions	Normal
Quantity & Packaging	2.0 liters in plastic bottle +250ml in sterilized glass bottle each
Analysis Duration	20.03.2025 to 24.03.2025
Sample Collected By	Amrit Singh& Team
Visual Observation	Clear and colorless.

TEST RESULTS

S. N	Parameters	Results				Acceptable Limit	Permissible Limit	Test Method
		GW_5	GW_6	GW_7	GW_8			
1.	pH	7.45	7.66	7.18	7.29	6.5-8.5	No relaxation	IS:3025 (P-11): 2022
2.	Color, HU	<5	<5	<5	<5	5	15	IS:3025 (P-4): 2021
3.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025:P-5:20218
4.	Turbidity, NTU	<1	<1	<1	<1	1 Max.	5	IS:3025 (P-10): 2023
5.	Total Dissolved Solids, mg/l	312	287	322	268	500 Max.	2000	IS:3025 (P-16) :2023
6.	Total Hardness (as $CaCO_3$), mg/l	260	245	310	260	200 Max.	600	IS:3025 (P-21): 2009
7.	Calcium (as Ca^{++}), mg/l	42.0	34.0	32.0	42.0	75 Max.	200	IS:3025 (P-40): 2004 (RA:2019)
8.	Magnesium (as Mg^{++}), mg/l	16.8	15.6	14.4	13.2	30 Max.	100	IS:3025:P-46:2023
9.	Total Alkalinity (as $CaCO_3$), mg/l	275	285	225	250	200 Max.	600	IS:3025 (P-23):2023
10.	Chloride (as Cl), mg/l	19.9	22.4	17.4	14.9	250 Max.	1000	IS:3025 (P-32): 1988
11.	Sulphate (as SO_4), mg/l	32.4	22.2	18.9	20.6	200 Max.	400	IS:3025 (P-24): Sec-1:2022
12.	Iron (as Fe), mg/l	0.13	0.12	0.12	0.11	1.0 Max.	No relaxation	IS: 3025(Part-53), 2024
13.	Zinc (as Zn), mg/l	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	ND (DL-0.02)	5 Max.	15	IS:3025 (P-49) : 1994
14.	Nitrate (as NO_3), mg/l	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	ND (DL-1.0)	45 Max.	No relaxation	IS: 3025(Part-34) Sec-1:2023
15.	Chromium (as Cr), mg/l	ND (DL-0.005)	ND (DL-0.005)	ND (DL-0.005)	ND (DL-0.005)	0.05 Max.	No relaxation	IS:3025 (P-52): 2021
16.	Manganese (as Mn), mg/l	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	ND (DL-0.09)	0.1 Max.	0.3	IS:3025 (P-59): 2023

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Website : www.cptl.co.in

Type of Sample	Ground water
Date of Sample Collection	19.03.2025

S. N	Parameters	Results				Acceptable Limit	Permissible Limit	Test Method
		GW_5	GW_6	GW_7	GW_8			
17.	Mercury (as Hg), mg/l	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	ND (0.0.001)	0.001 Max.	No relaxation	IS:3025:P-48:1994
18.	Cadmium (as Cd), mg/l	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	ND (DL-.001)	0.003 Max.	No relaxation	IS:3025 (P-41):2023
19.	Fluoride (as F), mg/l	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	ND (DL-0.1)	1.0 Max.	1.5	APHA 24th Edition 4500-F (D) SPADNS Method: 2023
20.	Residual Chlorine (as Cl_2), mg/l	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	ND (DL-0.003)	0.2	1.0	IS:3025 (P-26) :2021
21.	E.coli/100ml	Absent	Absent	Absent	Absent	Absent	Absent	IS: 15185: 2016
22.	Total Coliform, MPN/100ml	<2	<2	<2	<2	<2	<2	IS: 15185: 2016

ND- Not Detected
DL-Detection Limit

(Chemist In-Charge)
Date: 24/3/2025

(Reviewed & Authorized By)
Date: 24/03/2025

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TEST CERTIFICATE

Format No. CPTLEIA(S)

REPORT No. CPTLE/SSC/2025/01-04(S)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Date of Sample Collection	18.03.2025
Date of Sample Received in Lab	19.03.2025
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Type of Sample	Soil sample
Sample Identification No.	CPTLE/SSC/2025/01-04(S)
Point of Sample Collection	SQ_1-Project Site (31°34'25.27"N & 76°15'40.80"E), SQ_2–Harsa Jandora (31°35'57.19"N & 76°15'31.65"E) SQ_3–Nagar Chauki (31°34'51.19"N & 76°14'40.98"E), SQ_4–Talap (31°34'50.58"N & 76°13'56.39"E)
Environmental Conditions	Normal
Quantity & Packaging	500 gm in plastic bag each
Analysis Duration	19.03.2025 to 24.03.2025
Sample Collected By	Amrit Singh& Team

TEST RESULTS

S. N	Parameters	Unit	Results				Test Method
			SQ_1	SQ_2	SQ_3	SQ_4	
1.	pH (1:2.5)	--	7.45	7.25	7.16	7.48	IS 2720(P-26),1987
2.	Electrical Conductivity (1:2)	µmhos/cm	363	348	369	378	IS 14767,2000
3.	Texture	--	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Methods Manual for Soil Testing Govt. of India: 2011
4.	Bulk Density	(gm/cm^3)	1.45	1.36	1.45	1.24	IS 2720(P-3),1983 (RA-2021)
5.	Soil Moisture Content	%	10.4	14.6	12.2	10.4	Methods Manual for Soil Testing Govt. of India: 2011
6.	Color	--	Brown	Brown	Light Brown	Brown	Methods Manual for Soil Testing Govt. of India: 2011
7.	Available Calcium(as Ca)	(mg/kg)	40.2	32.2	52.4	50.0	Methods Manual for Soil Testing Govt. of India: 2011
8.	Available Magnesium (as Mg)	(mg/kg)	18.4	16.2	12.4	14.8	Methods Manual for Soil Testing Govt. of India: 2011
9.	Available Sodium(as Na)	Kg/hac	132	145	122	138	Methods Manual for Soil Testing Govt. of India: 2011
10.	Available Potassium (as K)	Kg/hac	32.8	54.2	22.6	30.8	Methods Manual for Soil Testing Govt. of India: 2011
11.	Available Nitrogen	(%)	1.45	1.26	1.45	2.32	Methods Manual for Soil Testing Govt. of India: 2011
12.	Organic Matter	(%)	0.51	0.55	0.52	0.50	Methods Manual for Soil Testing Govt. of India: 2011
13.	Available Phosphorus (as P)	Kg/hac	6.8	8.1	6.8	9.4	Methods Manual for Soil Testing Govt. of India: 2011
14.	Cation Exchange Capacity	(meq/100gm)	0.38	0.45	0.40	0.38	Methods Manual for Soil Testing Govt. of India: 2011
15.	Iron (as Fe)	(mg/kg)	1.45	1.32	1.15	1.45	USEPA-3050-B-1996: 1996
16.	Zinc (as Zn)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	USEPA-3050-B-1996: 1996
17.	Lead (as Pb)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996

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Website : www.cptl.co.in

Type of Sample	Soil
Date of Sample Collection	18.03.2025

S. N	Parameters	Unit	Results				Test Method
			SQ_1	SQ_2	SQ_3	SQ_4	
18.	Manganese (as Mn)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996
19.	Chromium (as Cr)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996
20.	Cadmium (as Cd)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	USEPA-3050-B-1996: 1996
21.	Copper (as Cu)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996

ND- Not Detected
DL-Detection Limit

(Chemist In-Charge)
Date: 24/3/2025

(Reviewed & Authorized By)
Date: 24-03-2025

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TEST CERTIFICATE

Format No. CPTLEIA(S)

REPORT No. CPTLE/SSC/2025/05-08(S)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Date of Sample Collection	19.03.2025
Date of Sample Received in Lab	20.03.2025
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Type of Sample	Soil sample
Sample Identification No.	CPTLE/SSC/2025/05-08(S)
Point of Sample Collection	SQ_5–Kaint (31°34'20.41"N & 76°16'0.96"E), SQ_6– Khurwain (31°34'20.41"N & 76°16'0.96"E) SQ_7– Ambhera Dhiraj (31°35'4.46"N & 76°15'1.79"E), SQ_8- Dhamandri (31°33'17.23"N & 76°15'45.96"E)
Coordinates	SQ_5–, SQ_6–SQ_7–, SQ_8-
Environmental Conditions	Normal
Quantity & Packaging	500 gm in plastic bag each
Analysis Duration	20.03.2025 to 24.03.2025
Sample Collected By	Amrit Singh& Team

TEST RESULTS

S. N	Parameters	Unit	Results				Test Method
			SQ_5	SQ_6	SQ_7	SQ_8	
1.	pH (1:2.5)	--	7.12	7.38	7.45	7.12	IS 2720(P-26),1987
2.	Electrical Conductivity (1:2)	µmhos/cm	344	326	318	289	IS 14767,2000
3.	Texture	--	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Methods Manual for Soil Testing Govt. of India: 2011
4.	Bulk Density	(gm/cm^3)	1.15	1.25	1.32	1.28	IS 2720(P-3),1983 (RA-2021)
5.	Soil Moisture Content	%	8.4	12.2	9.5	12.5	Methods Manual for Soil Testing Govt. of India: 2011
6.	Color	--	Brown	Brown	Light Brown	Brown	Methods Manual for Soil Testing Govt. of India: 2011
7.	Available Calcium(as Ca)	(mg/kg)	42.6	38.8	32.6	40.2	Methods Manual for Soil Testing Govt. of India: 2011
8.	Available Magnesium (as Mg)	(mg/kg)	12.2	14.6	10.8	12.2	Methods Manual for Soil Testing Govt. of India: 2011
9.	Available Sodium(as Na)	Kg/hac	144	120	136	126	Methods Manual for Soil Testing Govt. of India: 2011
10.	Available Potassium (as K)	Kg/hac	28.6	32.4	38.6	28.6	Methods Manual for Soil Testing Govt. of India: 2011
11.	Available Nitrogen	(%)	3.25	2.32	3.12	1.84	Methods Manual for Soil Testing Govt. of India: 2011
12.	Organic Matter	(%)	0.50	0.52	0.51	0.52	Methods Manual for Soil Testing Govt. of India: 2011
13.	Available Phosphorus (as P)	Kg/hac	8.8	12.4	10.2	8.6	Methods Manual for Soil Testing Govt. of India: 2011
14.	Cation Exchange Capacity	(meq/100gm)	0.42	0.41	0.34	0.33	Methods Manual for Soil Testing Govt. of India: 2011
15.	Iron (as Fe)	(mg/kg)	1.26	2.12	3.11	2.10	USEPA-3050-B-1996: 1996
16.	Zinc (as Zn)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	USEPA-3050-B-1996: 1996
17.	Lead (as Pb)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996

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Phone : 0172-5090312
E-mail : cptle126@gmail.com ; lab@cptl.co.in
Website : www.cptl.co.in

Type of Sample	Soil
Date of Sample Collection	19.03.2025

S. N	Parameters	Unit	Results				Test Method
			SQ_5	SQ_6	SQ_7	SQ_8	
18.	Manganese (as Mn)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996
19.	Chromium (as Cr)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996
20.	Cadmium (as Cd)	(mg/kg)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	ND (DL-0.5)	USEPA-3050-B-1996: 1996
21.	Copper (as Cu)	(mg/kg)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	ND (DL-2.0)	USEPA-3050-B-1996: 1996

ND- Not Detected
DL-Detection Limit

(Chemist In-Charge)
Date: 24/3/2025

(Reviewed & Authorized By)
Date: 24/03/2025

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END OF REPORT

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TEST CERTIFICATE

Format No. CPTLEIA(S.W)

REPORT No. CPTLE/SSC/2025/01(S.W)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.), M/s. SHIVA STONE CRUSHER, MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599, MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.**

SAMPLE PARTICULARS

Date of Sample Collection	18.03.2025
Date of Sample Received in Lab	19.03.2025
Sampling Plan Ref. No.	CPTLF7.3-I
Sampling Method	CPTL/SM/01
Type of Sample	Surface Water
Quantity & Packaging	2.0 liters in plastic bottle+250ml in sterilized glass bottle
Sample Identification No.	CPTLE/SSC/2025/01 (SW)
Point of Sample Collection	Soan River
Analysis Duration	19.03.2025 to 24.03.2025
Sample Collected By	Amrit Singh& Team
Visual Observations	Water sample with suspended & settleable solids

TEST RESULTS

S. No.	Parameters	Test Results	Test Method
1.	pH	7.52	IS:3025 (P-11): 2022
2.	Color, HU	<5	IS:3025 (P-4): 2021
3.	Odour	Agreeable	IS:3025 (P-5): 2018
4.	Turbidity, NTU	<1	IS:3025 (P-10): 2023
5.	Total Dissolved Solids, mg/l	184	IS:3025 (P-16): 2023
6.	Total Suspended Solids, mg/l	14.2	IS:3025 (P-17): 2023
7.	Total Hardness (as $CaCO_3$), mg/l	132	IS:3025 (P-21): 2009
8.	Total Alkalinity (as $CaCO_3$), mg/l	90.0	IS:3025 (P-23): 1986
9.	Chemical Oxygen Demand,mg/l	10.0	IS:3025 (P-58): 2023
10.	BOD(at 27°C) for 3 days,mg/l	3.3	IS:3025 (P-44): 2023
11.	Dissolved Oxygen,mg/l	6.4	IS:3025 (P-38): 1989
12.	Calcium(as Ca^{++}),mg/l	38.0	IS:3025 (P-40):1991:
13.	Magnesium (as Mg^{++}), mg/l	13.2	IS:3025 (P-46): 2023
14.	Sodium (as Na^{+}), mg/l	20.4	IS:3025 (P-45):1983:
15.	Potassium (as K), mg/l	12.2	IS: 3025 (P-45):1983
16.	Nitrate (as NO_3),mg/l	2.2	IS:3025 (P-34) :Sec-1:2023
17.	Chloride (as Cl), mg/l	12.4	IS:3025 (P-32): 1988
18.	Sulphate (as SO_4), mg/l	22.8	IS:3025 (P-24) : Sec-1:2022
19.	Iron (as Fe), mg/l	1.22	IS:3025 (P-53), 2024
20.	Total Chromium (as Cr), mg/l	ND (DL-0.005)	IS:3025 (P-52): 2021
21.	Zinc (as Zn), mg/l	2.10	IS:3025 (P-49) : 1994
22.	Fluoride (as F) mg/l	2.34	IS:3025 (P-60) : 2008
23.	Mercury (as Hg) mg/l	ND (DL-0.002)	IS:3025:P-48):RA-2003
24.	Boron (as B),mg/l	ND (DL-0.1)	IS:3025 (P-57): 2005
25.	Aluminum (as Al) mg/l	ND (DL-0.1)	IS:3025 (P-55):2003

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Website : www.cptl.co.in

Type of Sample	Surface Water (Sohan River)
Date of Sample Received in Lab	19.03.2025

S. No.	Parameters	Test Results	Test Method
26.	Cadmium (as Cd), mg/l	ND (DL-0.001)	IS:3025 (P-41): 1992
27.	Fecal Coliform, MPN/100 ml	77.0	IS:1622-1981
28.	Total Coliform, MPN/100 ml	108	IS:1622-1981

ND-Not Detected
DL-Detection Limit

(Chemist In-Charge)
Date: 24/3/2025

(Reviewed & Authorized By)
Date: 24/03/2025

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Website : www.cptl.co.in

TEST CERTIFICATE

Format No. CPTLEIA(AN)

REPORT No. CPTLE/SSC/2025/01-08(AN)
REPORTING DATE: 24.03.2025

NAME OF INDUSTRY: **Sh. BHUPINDER THAKUR (PROP.),**
M/s. SHIVA STONE CRUSHER,
MINING LEASE AREA 02-47-13 Ha, KHASRA No.-596 & 599,
MAUZAL MOHAL SANJHOT, TEHSIL & DISTT.- UNA, H.P.

SAMPLE PARTICULARS

Sampling Method:	CPTL/SM/01	**Type of Sample:**	Air Quality w.r.t Noise
Sampling Plan Ref. No:	CPTLF7.3-I	**Location of Monitoring:**	At different locations
Date of Monitoring:	18.03.2025 & 19.03.2025	**Environmental Conditions:**	Normal
Sample Identification No.:	CPTLE/SSC/2025/01-08(AN)	**Monitoring Done By:**	Amrit Singh& Team
Nature of Sample:	Noise Level		

TECHNICAL DATA

S. No.	Locations	Value in dB(A) (Average)		Test Method
		Day Time (1 Hour)	Night Time (1 Hour)	
01.	Project Site (31°34'23.60"N & 76°15'42.59"E)	68.9	36.1	IS 9989:1981
02.	Harsa Jandore (31°35'57.19"N & 76°15'31.65"E)	48.4	31.2	IS 9989:1981
03.	Nagar Chauki (31°34'51.19"N & 76°14'40.98"E)	47.7	32.5	IS 9989:1981
04.	Talap (31°34'50.58"N & 76°13'56.39"E)	46.8	34.4	IS 9989:1981
05.	Kaint (31°34'20.41"N & 76°16'0.96"E)	45.5	31.6	IS 9989:1981
06.	Khurwain (31°33'47.72"N & 76°18'1.81"E)	48.6	33.9	IS 9989:1981
07.	Ambhera Dhiraj (31°35'4.46"N & 76°15'1.79"E)	44.3	32.8	IS 9989:1981
08.	Dhamandri (31°33'17.23"N & 76°15'45.96"E)	46.3	34.4	IS 9989:1981

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