

No. Udyog-Bhu(Khani-4)Laghu-449/2016
 Government of Himachal Pradesh
 Department of Industries
 "Geological Wing"
 Dated: Shimla- 171001,

REGISTERED

-11004

30/11 2018

To

✓ Sh. Randeep Singh,
 S/o Sh. Gurbaksh Singh,
 Village Masruwala, P. O. Dulmana,
 Tehsil & Distt. Hanumangarh, Rajasthan.

Subject:-

Approval of Mining Plan of auctioned area on contract for extraction of sand, stone & bajri from Bhangani (Yamuna River) bearing Khasra No. 936 & 998 min over an area measuring 13-2 Bighas (01-10-40 Hect.) & 635-08 Bighas (53-56-40 Hects.) (Govt. land, River bed) falling in Mauza/Mohal Bhangani of Tehsil Paonta Sahib, Distt. Sirmour, H. P. for which letter of intent has been issued on 8.8.2016.

Dear Sir,

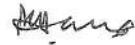
In exercise of powers conferred by Rule 36 of Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015, I hereby approve the above said Mining Plan (of the auctioned area) for the purpose of obtaining Environment Clearance for which the letter of intent has been issued on 8.8.2016. The mining plan is approved for a period of five years from the date of execution of agreement. 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 govt. or any other authority.
2. That this approval of the Mining Plan does not in any way imply the approval of Govt. in terms of any other provisions of the H. P. Minor Minerals (Concession) Revised Rules, 1971 now repealed as Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015 or any other laws including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 there under and other relevant statutes, orders and guidelines as may be applicable to auctioned 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 auctioned area 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 Mining Plan at any point of time in the interest of environment and mineral conservation.
5. That the contractor 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 auctioned 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 auctioned area the same shall have to be incorporated by making necessary amendments in the Mining Plan by the contractor through R. Q. P.
8. That in case auctioned area is not renewed or is terminated or working is suspended before the expiry of the contract period due to any reason, the approval of Mining Plan shall stand automatically cancelled.
9. That the contractor shall carry out production of mineral in accordance to the production shown in Mining Plan and Environmental Clearance which ever is less.
10. That no person shall undertake mining operations in the auctioned area, except in accordance with Mining Plan approved under sub rule (2) of Rule 39 of Himachal Pradesh Minor Mineral (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.
11. That the contractor shall carry out working in the auctioned area as per Mining Plan only after obtaining permission to work in the auctioned area from the competent authority.
12. That if the mining operations are not carried out in accordance with the approved Mining Plan the State Geologist, Geologist, Assistant Geologist and the Mining Officer, may 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 auctioned quarry as envisaged under the said Mining Plan.
13. That if any thing 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 contractor shall be liable to forfeited.

Enclosed:- Copy of approved Mining Plan.

Yours faithfully,



State Geologist
Himachal Pradesh
Shimla-171001.
Dated;

2018

Endst. No. As above.

Copy for kind information to:-

1. The Mining Officer, Sirmour at Nahan, Distt. Sirmour H. P. alongwith a copy of Mining Plan for further necessary action.
- 2 Sh. Subhash Chand Kaura (Ex. DDG, GSI), Flat No.-604, Victoria Tower, Chandigarh Enclave Zirkipur (Punjab).


State Geologist
Himachal Pradesh
Shimla-17101

**MINING PLAN
OF AUCTIONED QUARRY/AREA
IN FAVOUR OF
SH. RANDEEP SINGH,
S/O SH. GURBAKSH SINGH,
R/O VILL. MASRUWALA, P.O. DULMANA,
TEHSIL & DISTT. HANUMANGARH
RAJASTHAN**



PREPARED & SUBMITTED BY

Subhash Chand Kaura (Ex. DDG, GSI)

House No. 1114, Sector 46 B, Chandigarh, 160047

Mob. No. 9814710942, Email: sckaura@gmail.com

RQP No. RQP/D.N.N./182/2011/A

Valid upto 24-01-2021

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गामकीय शाखा
उद्योग विभाग शिमला
Geological wing
Deptt. of Industries
Shimla

APPROVED

With Condition

तर्ज के साथ अनुमोदित

Order No. *Indyog-Bdn (K Lani. 4) Lofdm-449/2016*

dated

दिनांक *30/1/18*

[Signature]

State Geologist,
Shimla District

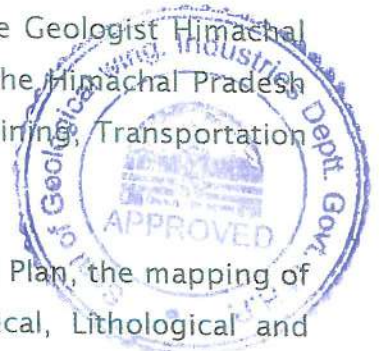
**MINING PLAN OF AUCTIONED QUARRY/AREA
IN FAVOUR OF SH. RANDEEP SINGH,
S/O SH. GURBAKSH SINGH, VILL. MASRUWALA,
P.O. DULMANA, TEHSIL & DISTT.
HANUMANGARH, RAJASTHAN**

INTRODUCTION

Sh. Randeep Singh S/o Sh. Gurabaksh Singh, R/o Vill. Masruwala, P.O. Dulmana, Teshil & District Hanumangarh, Rajasthan has been issued a letter of intent by the Department vide letter No Udyog- Bhu-(Khani-4) Laghu 449/2016-5371 dated 08-08-2016 for the grant of Auctioned Area for the extraction of Stone, Bajri and Sand over an area situated in Khasra Nos. 936, 998 Min measuring 01-10-40 & 53-56-40 Hectares (Govt. Land) respectively in Mauza and Mohal Bhangani, Tehsil Paunta Sahib, District Sirmour (H.P). The Auctions were held on 06.05.2016 & 07.05.2016 by the auction committee constituted under the Chairmanship of Additional District Magistrate, Nahan, Distt. Sirmaur. The tender for the said area in Yamuna River had the highest bid of Rs. 5.00/- crores quoted by Sh. Randeep Singh S/o Sh. Gurabaksh Singh, R/o Vill. Masruwala, P.O. Dulmana, Teshil & District Hanumangarh, Rajasthan. On the basis of the recommendation of the Auction Committee, the matter was referred to the Government and the Government vide letter No. Ind-II (F)6-5/2013 dated 12-07-2016 conveyed the approval for the issuance of Letter of Intent in favour of the highest successful bidder.

The said Contractor/bidder approached the undersigned having R.Q.P. No. H.P./ RQP/D.N.N./182/2011/A. for preparation of the Mining Plan of the site to fulfil one of the conditions of Letter of Intent which says that "the Party shall have to submit the approved Mining Plan under the rule 35(1) of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015 before the execution of Auctioned deed". The Mining Plan of the area has been prepared as per the format circulated (Form-M) by the State Geologist Himachal Pradesh and in accordance with the various provisions made in the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015.

On the request of the said Contractor to prepare the Mining Plan, the mapping of the Auctioned Area was carried out encompassing Topographical, Lithological and other features. The Mining Plan includes the systematic and scientific exploitation of minor mineral from within the Auctioned Area encompassing a phased program for afforestation and point of public utility.



Mining Plan of Auctioned Quarry

The Auctioned Area lies in the Yamuna River, located near Bhangani village and is about 21 Kms. from Paonta Sahib. Mining Auctioned Area was mapped on 1:5000 Scale, encompassing Topographical, Lithological and other features. The Mining Plan includes the systematic and scientific exploitation of minor mineral from within the Auctioned Area encompassing a phased program for afforestation and protection of point of public utility if any.

1. GENERAL

1.1 NAME AND ADDRESS OF THE CONTRACTOR

- 1.1.a Name of the Contractor Sh. Randeep Singh S/o Sh. Gurabaksh Singh.
1.1.b Address of the Contractor R/o Vill. Masruwala, P.O. Dulmana, Teshil & District Hanumangarh, Rajasthan
1.2 STATUS OF THE CONTRACTOR Private Individual

1.3 MINERAL WHICH THE CONTRACTOR INTENDS TO MINE

The Contractor/Bidder intends to mine Stone, Bajri and Sand from the Auctioned area. The extracted stone shall be used in already existing crusher for manufacturing grit and sand to be sold in the open market as per the demand.

1.4 PERIOD FOR WHICH THE MINING AUCTIONED IS TO BE GRANTED

15 Years as per the terms and conditions of Auctions under the provisions of Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules 2015.

1.5 NAME AND ADDRESS OF R.Q.P.

Subhash Chand Kaura (Ex. DDG, GSI)
House No. 1114, Sector 46 B, Chandigarh,
160047, Mob. No. 9814710942,
Email: sckaura@gmail.com
RQP No. RQP/D.N.N./182/2011/A
Valid upto 24-01-2021

1.6 NAME OF PROSPECTING AGENCY.

The area has been discovered by the Geological Wing of Department of Industries and further investigated by the R.Q.P. having vast experience in mineral exploration.

2. LOCATION AND APPROACH TO THE AREA (PLATE -1).

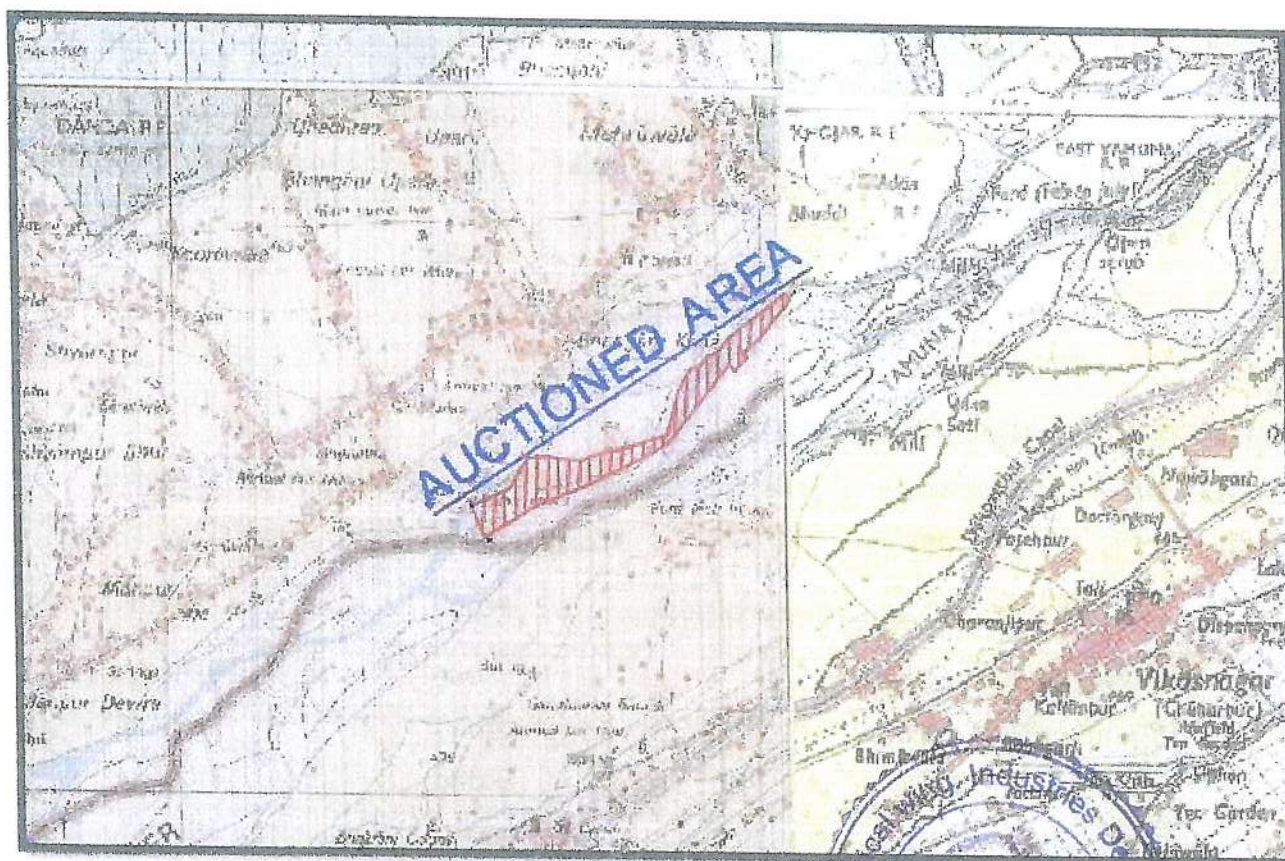
2.1 TOPOSHEET NO. 53F/11

The Auctioned Area falls by latitudes North 30° 29' 18.74": 30° 28' 17.15" and longitudes East 77° 45' 06.19": 77° 43' 35.27"

Mining Plan of Auctioned Quarry



GOOGLE MAP SHOWING THE LOCATION OF AUCTIONED QUARRY



TOPOSHEET IMAGE SHOWING THE LOCATION OF AUCTIONED QUARRY

2.2. LOCATION DETAILS OF THE AREA

Village	Bhagani
Patwar Circle	Bhagani
Post Office	Bhagani
Sub Division Office (Civil)	Paonta sahib
Sub Division (Forest)	Paonta sahib
Sub Division (IPH)	Paonta sahib
Sub Division (PWD)	Paonta sahib
Tehsil	Paonta sahib
District	Sirmaur
State	Himachal Pradesh

2.3. REVENUE DETAILS OF AREA

AUCTIONED AREA OF MAHENDER SINGH & CO.							
Sr. No.	Mauza/ Mohal	Khasra Numbers	Area in Hects.	Kisam	Status	Land owner	Panchyat
1	Bhagani	936, 998 Min	01-10-40 & 53-56-40	Gair mumkin Nadi	Kabza Swayam Van Vibhaag (HP Govt)	Sarkaar Himachal Pradesh	Bhagani
Total Area 54-66-80 Hectares.							

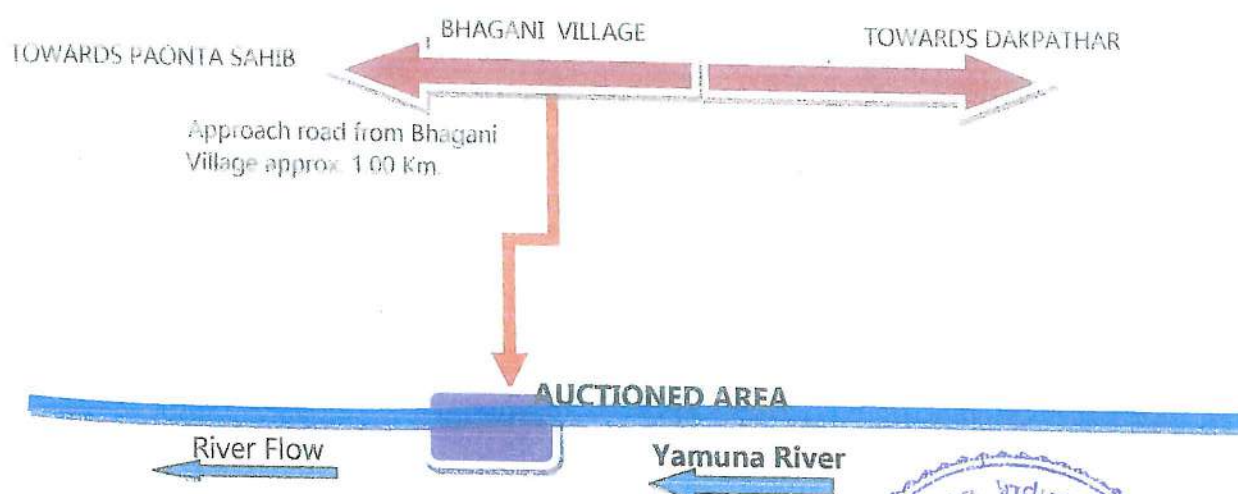
2.4. DISTANCE FROM IMPORTANT PLACES

The distances of important places from the Auctioned Area are as follows:

Sr. No.	Places	Transport Facility	Distance in Km.
1	Paonta sahib (Sub division office)	Road	22 Km
2	Shimla (State Capital)	Road	185 Km
3	Nahan District HQ	Road	65 Km
4	Ambala	Road	110 Km
5	Chandigarh	Road	135 Km
6	Saharanpur	Road	80 Km
7	Dehradun	Road	50 Km

2.5 APPROCH OF THE AREA

The proposed auctioned area is located near village Bhagani on the right bank of Yamuna River. The Auctioned Area lies in the first stream of River Yamuna. The site is approachable through an approach road originating from Paonta-Purwala-Bharli-Dakpathar road near Bhagani village about 22.0 kilometres from Paonta Sahib. The highest point of mining Auctioned Area is 434 meters above MSL and lowest point is 422 meters above MSL and average width is 550 to 650 mtrs. however; the total width of river Yamuna in this part is approximately 800 - 1000 meters.



3. PHYSIOGRAPHIC ASPECTS OF THE AREA

3.1. GENERAL PHYSIOGRAPHY

The Auctioned Area is located in the riverbed of Yamuna River. In general the area forms a part of Siwalik Range, particularly a part of Dun Valley. The area falls in the Siwalik foothill Belt. The Siwalik range extends from Pakistan in the west to India, Nepal, and Bhutan in the east. The width of this belt ranges from 6 to 90Km, generally become narrowed and steeper from west to east in a distance of 2000 Km. The tectonic activity and ongoing erosion has greatly modified the topography of the Siwalik belt. The present day morphology comprises of hogback ridges, consequent, subsequent, obsequent and resquent valleys of various orders; gullies. Choes (seasonal streams) and earth pillars, rilled earth buttresses of conglomerate formation, semicircular choe-divides, talus cone, colluvial cones, water gaps and choe terraces. The associated badland features include the lack of vegetation, steep slopes, high drainage density and rapid erosion rates.



To the south of the Siwaliks are the Indo-Gangetic plains and in the north they are bordered by the Lesser Himalayan metamorphites.

Intermittently located between the Siwaliks and Lesser Himalayas are duns, flat bottomed longitudinal structural valleys with their own drainage systems. These comprise several large Himalayan piedmont alluvial fans and terraces. The dunes consist of lacustrine, fluvial, Aeolian and swamp environment deposits ranging from Middle Pleistocene to Holocene in age. During their formative stage most of the dunes were slightly narrower and have gradually expanded over the time through the erosion of the adjacent Siwalik sediments. The monsoon rains temporarily supply seasonal streams locally known as choes, khads or nalas. These stream banks and their terraces yield sizable numbers of lithic artifacts owing to the sheared location for both water and raw material.

The district is bounded by Shimla district in the north Solan in the northwest and the state of Harayan in the south and west while the Utrakhand state is located in the eastern boundary.

Geographically the district can be divisible in three parts

1. Trans-Giri Region
2. Cis-Giri Region
3. The Plains of Kiar Da Dun

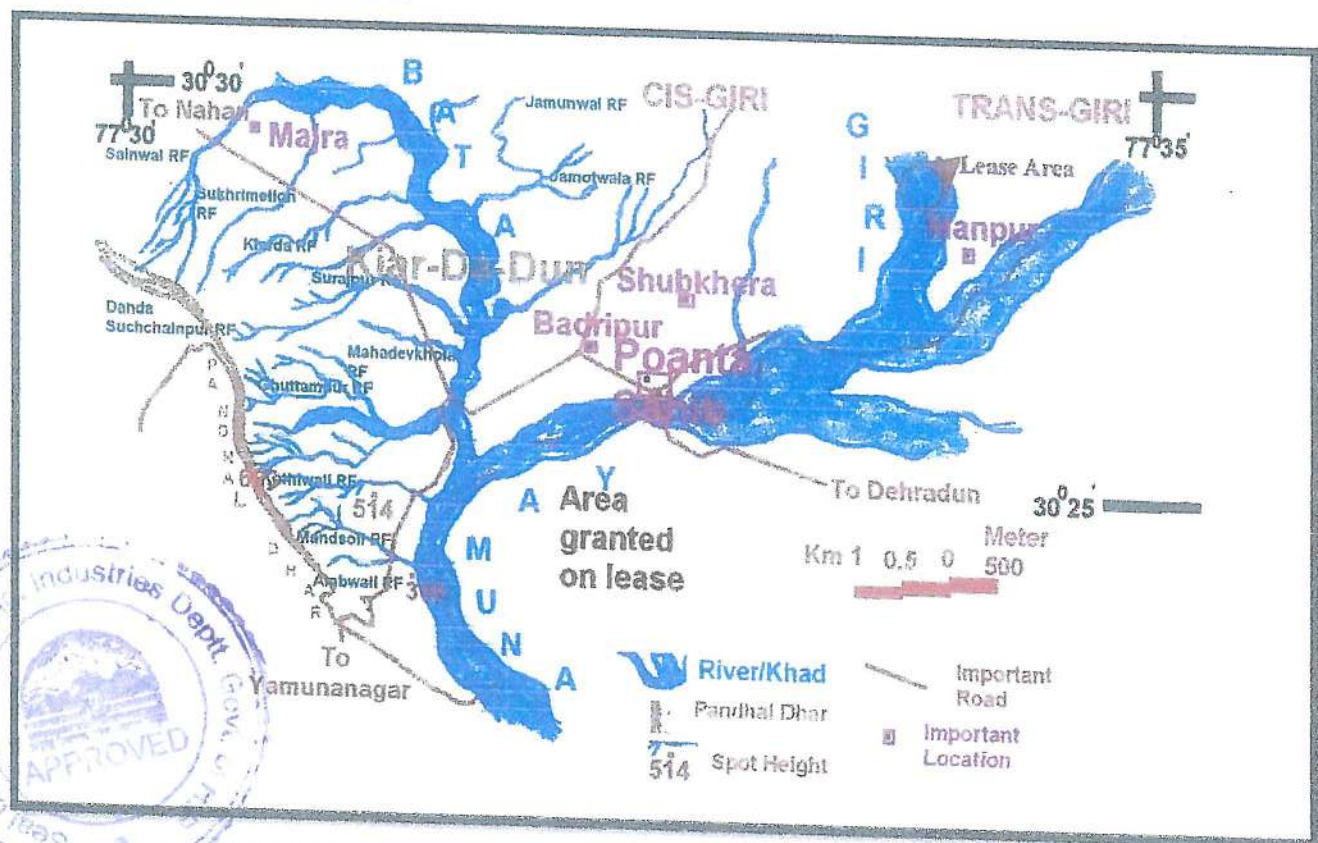


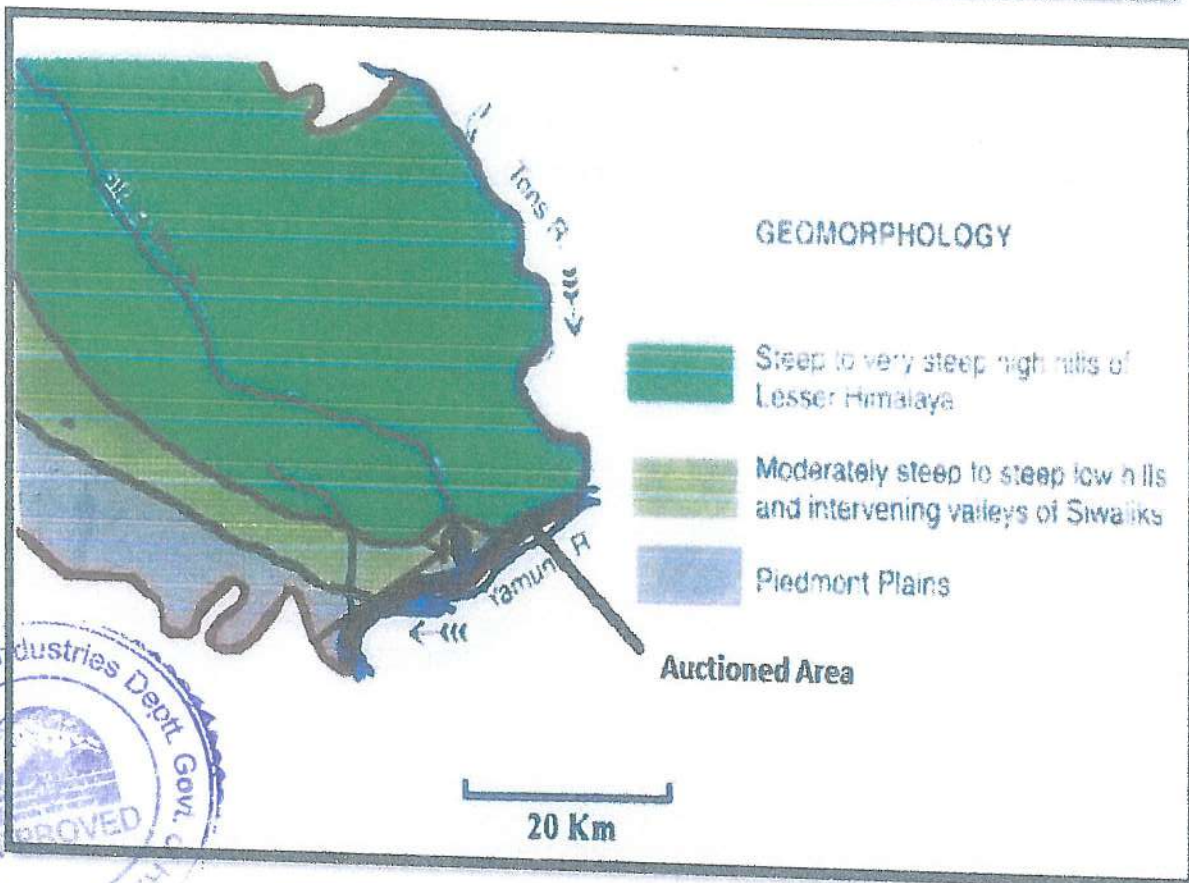
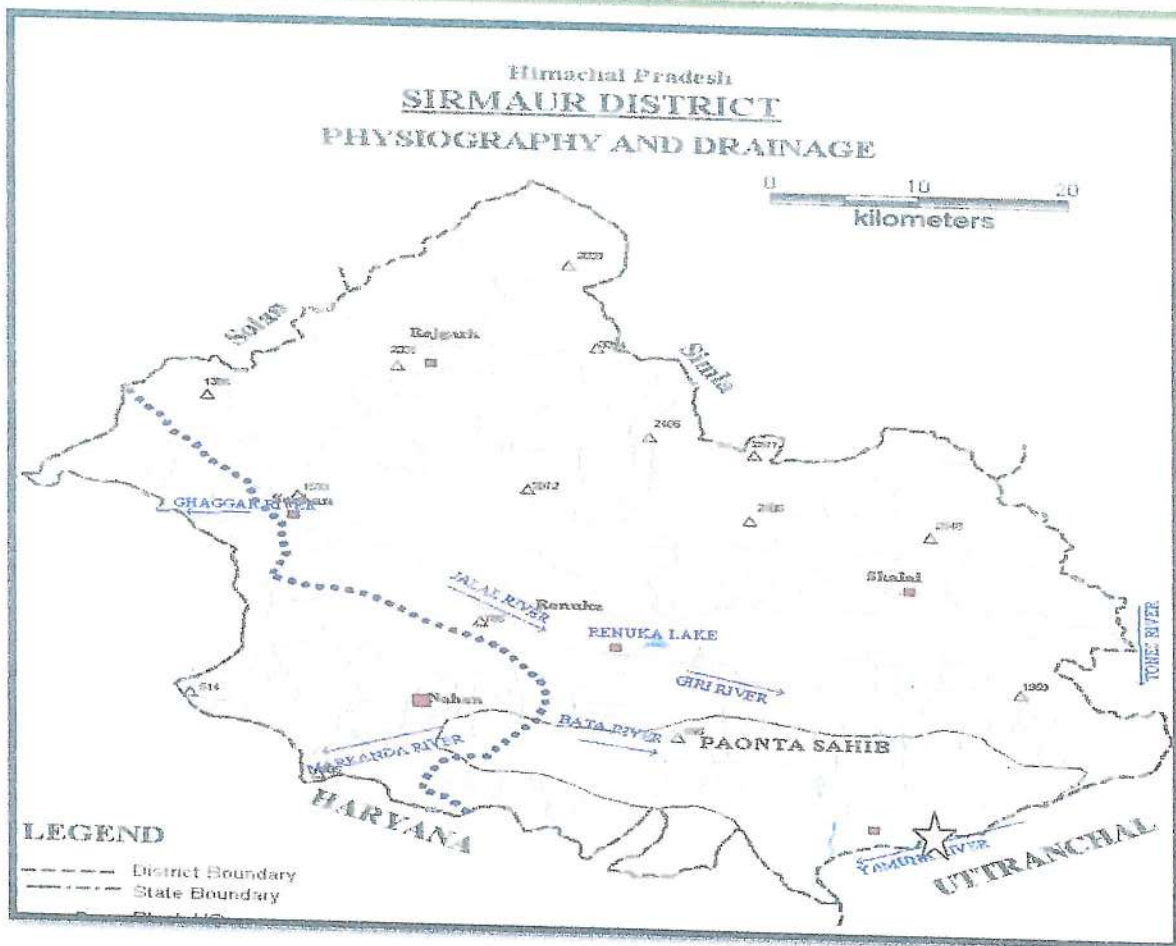
FIGURE SHOWING THE KIAR DA DUN VALLEY OF DISTRICT SIRMOUR, H.P

1. The Trans-Giri region consists of mountains culminating into the Chaur Peak which is commonly known as Chur Chandni Ki Dhar (the hill of silver bangle). It has altitude of 3647metres above MSL. From this lofty mountain run two ranges one in the north-west called the Dhar Taproli-Jadol and other Dhar Naura which run in south east direction towards Haripur Fort at an altitude 2677m it is again divided into two ranges one running in the east to the tons valley and other runs NW called Dudham Dhar which in the southwest have many spurs towards Giri river. The second range run initially in sw known As Nigali Dhar and then turns to east called Dhar Kamrau. The Shalai Dhar parallel to it and in the northern side and both of them combined forms the Valley of Nera River.

2. Cis Giri region is intersected by three main ranges which run from NW to SE is the Sain dhar run parallel to the Giri river ii) Datri Dhar between the two ranges run the Jalal river. The third is quite low Range which run from Kala Amb area to south of Nahan and forms an open valley with dhari dhar in the western part flows the Markanda river. Between the eastern extremity of Datri Dhar lies open valley known as Kiar ka Dun valley which the boarder the Yamuna and Giri river in the east and from the boundary of the district with Uttrakhand it also touches the western boarder of Nahan tehsil. This flat valley is irrigated by Bata river which flows from east to west originating from Dhari Dhar. Geomorphologically the district can be divided into three zones

1. Steep to vary steep high hills of Lesser Himalaya
2. Moderately steep to low hills and intervening valleys of Siwaliks and
3. Piedmount Plains.





GEOMORPHOLOGICAL MAP OF PART OF SIRMOUR DISTRICT

3.2 ALTITUDE, GENERAL TERRAIN DESCRIPTION, WITH MAP AND CONTOURS ENCOMPASSING THE MINE AREA

The map of the Auctioned area on 1:5000 scale with one meter contour interval is enclosed as Plate No III. Yamuna River originates at an altitude of 6387 meters above MSL and after travelling a long distance of approximately 120 km, it enters into the State of Himachal Pradesh below the Dakpathar Barrage. The highest point of the Auctioned area is 434 meters above MSL and lowest point is 422 meters above MSL.

3.3 CLIMATE OF THE AREA

The region has four distinct seasons. The area experiences severe winter from December to March followed by servers summer season lasting from April to June. The area receives rainfall under the influence of south -west monsoon from July to mid-September followed by post -monsoon season lasting up to November.

The terrain in general has profound influence on the temperatures of a region. The temperature generally rises from the beginning of March till June, which is the hottest month of the year with mean minimum and maximum temperature of 25.6°C to 44°C respectively. With the onset of monsoons by the end of the June temperature begins to fall. The drop in day temperature is much more than the drop in night temperature. The night temperature falls rapidly after the withdrawal of monsoons by mid-September. The month of January is cooler month with the mean maximum and minimum temperature being 36°C and 07°C respectively. Under the influences of western disturbance, the temperature falls appreciably during winters and it may go even below 0° C.

Humidity is generally low throughout the year. During summer season, humidity is lowest 36 %. During monsoon months, it goes as high as 80-90%. The highest levels of humidity are observed in the month of August. The average humidity during synoptic hours is 53% and 62% respectively.

Snow fall is received in the higher reaches of Churdhar ranges.

Average minimum and maximum temperature are 6°C and 36°C.

3.3.a TEMPERATURE

The monthly mean temperature minimum and maximum recorded at Nahan for district Sirmour for the year 2013 is given in table below:

Month	Jan	Feb	March	April	May	JUN	JUL	Aug	Sept	Oct	Nov	Dec
Max Tem	16.3	18.5	24.8	29.6	34.4	28.8	27.4	26.9	28.2	26.0	21.9	20.2
Min Tem	4.9	7.2	11.4	16.5	21.7	18.4	18.5	18.2	17.1	14.6	12.1	5.8

MONTHLY MAXIMUM AND MINIMUM TEMPERATURE FOR THE YEAR 2013 OF DISTRICT SIRMOUR, H.P.



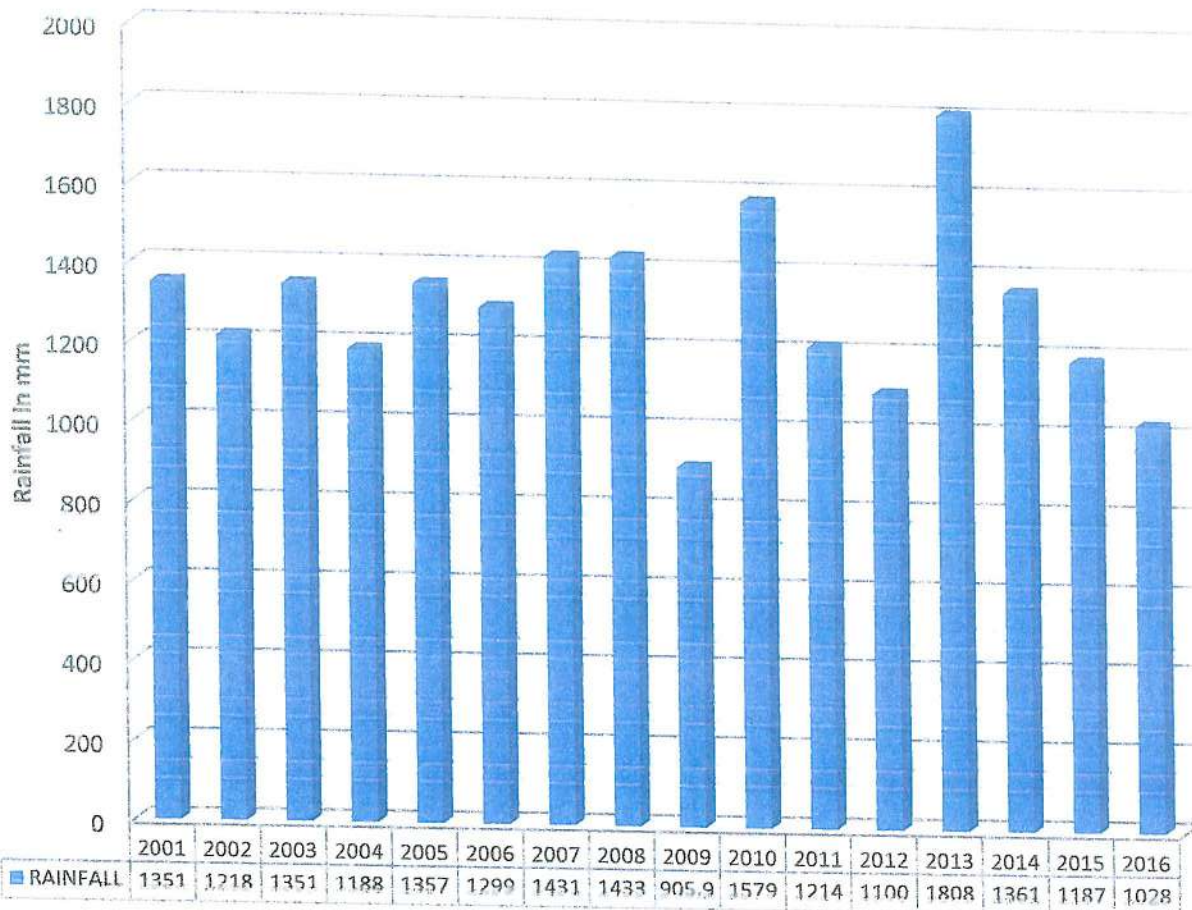
3.4 RAINFALL

The annual rainfall from 2001 to 2016.

The Figure below shows the general rainfall in the district. The annual rainfall in the district is given below:

RAINFALL DATA OF DISTRICT SIRMAUR	
YEAR	RAINFALL in mm
2001	1351.1
2002	1217.6
2003	1351.1
2004	1187.9
2005	1356.5
2006	1299.1
2007	1431
2008	1432.6
2009	905.9
2010	1578.6
2011	1213.7
2012	1099.5
2013	1807.5
2014	1360.8
2015	1186.8
2016	1028.3

RAINFALL DATA DISTRICT SIRMAUR



Graph showing annual Rainfall data of Distt. Sirmaur from Year 2001 to 2016

3.5 ANY OTHER IMPORTANT FEATURE

The Auctioned area lies in the catchment area of Yamuna River which flows from North West to south east direction. Yamuna River is glacier fed from Himalaya mountain ranges. The area in question is in the riverbed of Yamuna River near Village Bhagani towards the right bank of Yamuna river besides the Paonta-Purwala-Bharli-Dakpathar road.

3.6. DESCRIPTION OF THE AREA IN WHICH THE AUCTIONED AREA IS SITUATED

The Auctioned Area is situated near Bhagani Village and lies near the right bank of Yamuna River. The general flow of Yamuna River in this section is from North West to south east direction. The general altitude of the area varies as per the profile of River Yamuna.

PART- I

DESCRIPTION OF GEOMORPHOLOGY AND MINE DEVELOPMENT

1.1 GENERAL

The Auctioned Area lies in River Yamuna, a main tributary of Ganges River. This River is perennial in nature and it originates from the Yamunotri Glacier near Baderpoonch peaks ($38^{\circ}29' N 78^{\circ} 27'E$) at an elevation of about 6387 meters above mean sea level (MSL) in district Uttarkashi of State of Uttarakhand.

1.2 NAME OF THE RIVER/STREAM IN WHICH THE AUCTIONED AREA IS SITUATED

The mining area lies in Yamuna River which is a main tributary of Ganges River

1.3 DRAINAGE SYSTEM

It forms a part of Yamuna Drainage system.

1.4 TYPE OF DRAINAGE

Dendritic.

1.5 ORIGIN OF RIVER/STREAM

The River Yamuna originates from the Yamunotri Glacier near Baderpoonch peaks ($38^{\circ}29' N 78^{\circ} 27'E$) at an elevation of about 6387 meters above mean sea level (MSL) in district Uttarkashi of State of Uttarakhand.

1.6 ALTITUDE AT ORIGIN:

About 6387 meters above mean sea level. The highest point of the Auctioned area is 434 meters and lowest is 422 meters above mean sea level.

1.7 GEOMETRY OF THE CATCHMENT OF THE RIVER IMPACTING THE REPLENISHMENT OF DEPOSITS

Geometry of Yamuna River

Total Area of catchment	=	74208 Sq. Km.
Area of catchment up to mining site	=	20,000 Sq. Km. (Up to mining area below Dakpathar Barrage)



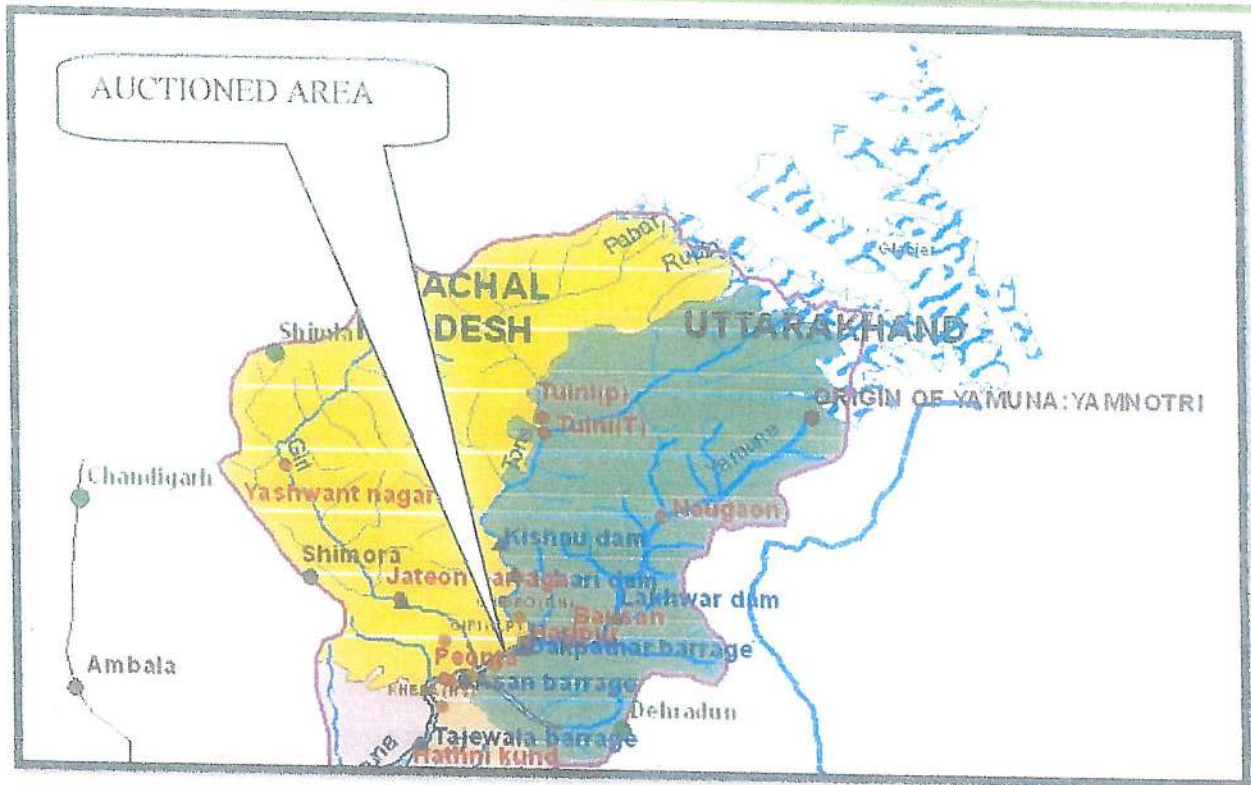


IMAGE SHOWING THE EFFECTIVE CATCHMENT OF YAMUNA UPTO AUCTIONED AREA

The following are the different ingredients of the Yamuna River

Number of tributaries on right bank	9 major and many small
Number of tributaries on left bank	5 major and many small
Stream order up to Auctioned area	3
Maximum length of water shed	120 km
Maximum breadth of water shed	62 Km

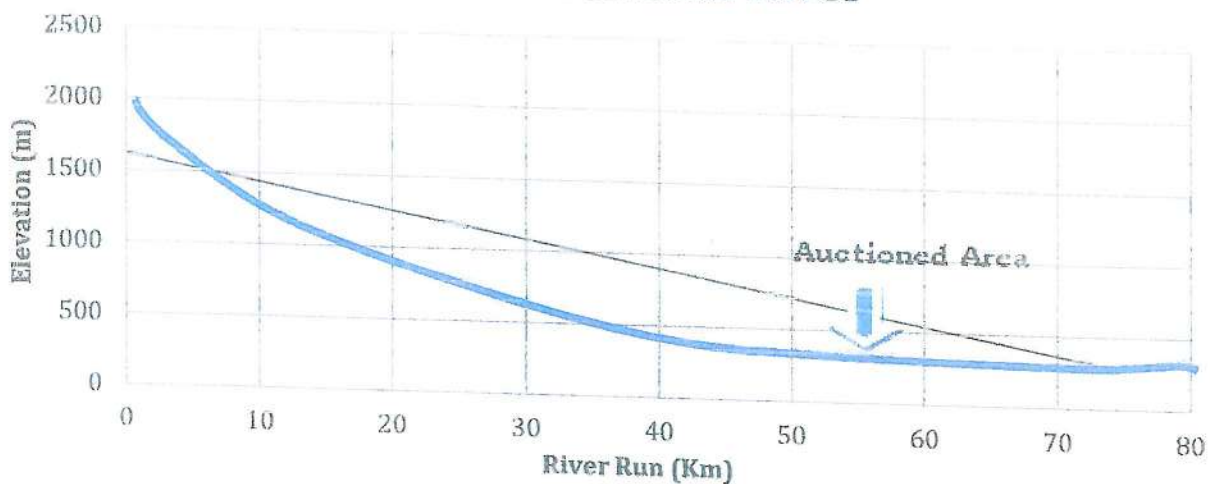
Length breadth ratio = 1.93: 1, Higher the ratio, higher is the asymmetry of water shed.

Profile of River Bed

Elevation at origin	6387 M
Elevation at Auctioned area	434 to 422M
Total length of River	137.0 Km
Cumulative Elevation Loss	5986 M
Average Slope	6.0 % i.e about 2.7°
Slope angle at Auctioned area	5.2% i.e about 2.34°



Profile of Yumuna River



Profile of River Bed

- | | | |
|--|---|-----------------------|
| 1. Elevation at origin | = | 6387 M |
| 2. Elevation at Auctioned area | = | 434 to 422M |
| 3. Total length of River upto auctioned area | = | 137.0 Km |
| 4. Total Elevation Loss upto auctioned area | = | 5986 M |
| 5. Average Slope | = | 3.2 % i.e about 1.44° |
| 6. Slope angle at Auctioned area | = | <1% i.e about 0.30° |

Cycle of erosion at Auctioned area is old.

1.8 ANNUAL DEPOSITION AT THE PLACE OF MINING:

10 to 30 cm in Auctioned Quarry.

1.9 THE COMPETENCY OF THE RIVER/STREAM AT THE MINING SITE:

The general competency of the river at the mining area is 4 to 6 kg approximate. The largest boulder varies 9 to 14cm X 8 to 12 X 7 to 12 Cm (length x breadth x height).



PHOTO SHOWING THE COMPETENCY OF YAMUNA RIVER AT AUCTIONED AREA

1.10 MEANDERING PATTERN OF THE RIVER NEAR MINING SITE

During the monsoons, flood water level raises about 2.50 mts. to 2.00 meters for a short spell of time and the river is perennial in nature. The landform being depositional the meandering thread is constantly changes during the rains depending upon the water level. The highest flood level is maximum water rise level during monsoons and the lowest flood level is riverbed level.

1.11 ALTITUDE OF THE MINING AREA

The highest contour in the mining area is 434 Mts. and the lowest is 422 Mts.

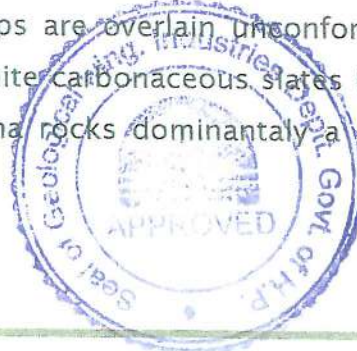
1.12 DESCRIPTION OF THE GROUND WATER TABLE IN THE MINING AREA, BEFORE AND POST MONSOON.

The area is located in the Siwalik system, which consist of boulders bed and has minimum water retention capacity. The area is a hilly terrain as such cannot have any regular water table but the percolated water comes out in the shape of spring at those places where there is non-pervious formation is available to stop the water from further percolation. After monsoon period the springs can be seen functional in number of places but the intensity of discharge start reducing after September and most of the springs goes dry after November and the major sources of water remains the course of the Yamuna River where the water is available along the course of River where the wells are developed.

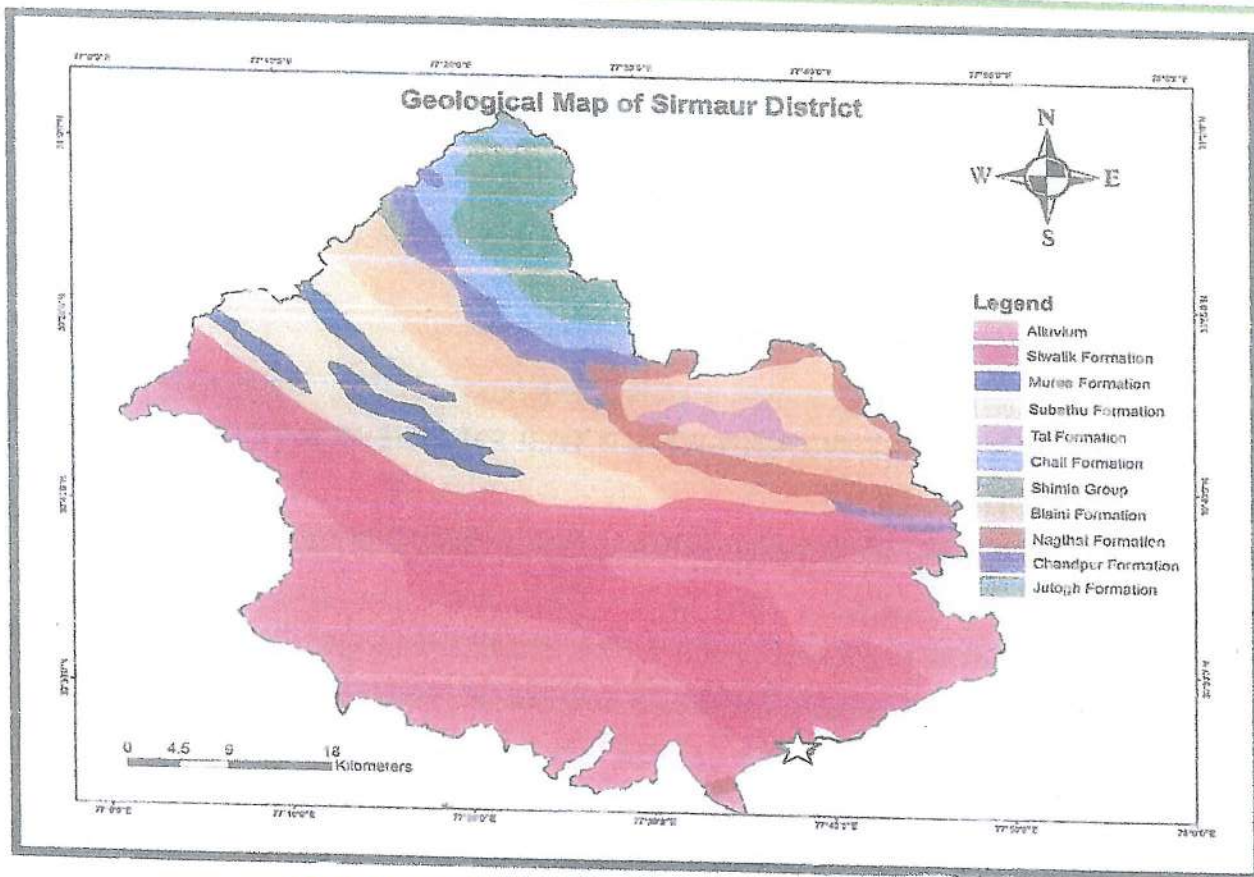
2. GEOLOGY

2.1 GENERAL

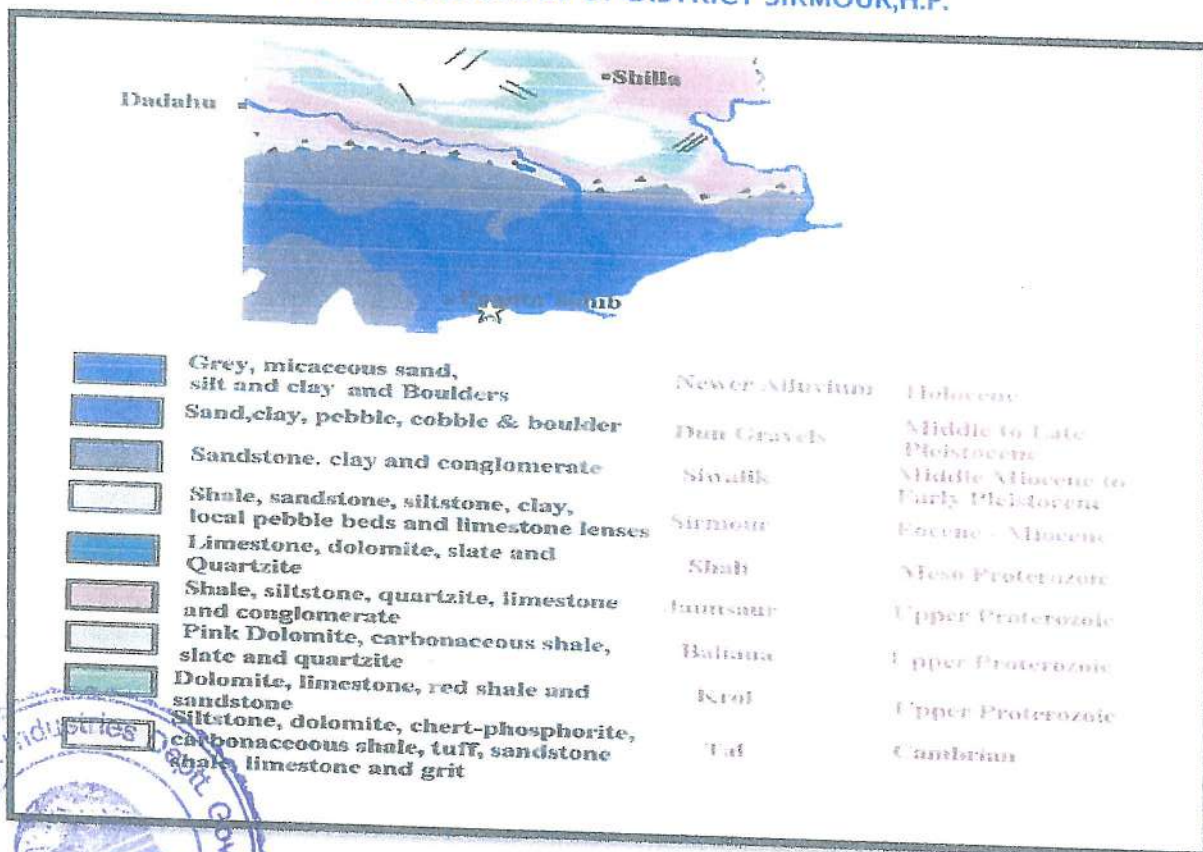
The Sirmour district is situated in the Lesser Himalayas and the Siwalik foothill comprising rocks ranging from Proterozoic to Quaternary (Fig-12). The oldest rocks exposed in the district are the Jutogh comprising the carbo. Phyllite, schist, gneisses, quartzite and marble. The Chor granotoid occur as intrusive body with in the Jutogh Group of rocks. The granite body composed of granite and minor applite. The Sundernagar Group of rocks (Meso Proterozoic age) is represented by quartzite and basic flows. The Deoban /Shali Group Meso Proterozoic consisting of dolomite, limestone slate and quartzite occur along the main boundary fault and also in the northeastern part of the district. The argillo-arenaceous sequence of Shimla /Jaunsar group The Jaunsar Group of is homotexial with Shimla group and assigned Meso-Proterozoic age Both these groups are overlain unconformably by the Baliana Group comprising diamictite pink dolomite carbonaceous slates besides quartzite bands. The krol Group overlies by the Baliana rocks dominantaly a carbonaceous sequence with minor shales and sandstone.



Mining Plan of Auctioned Quarry



REGIONAL GEOLOGY OF DISTRICT SIRMOUR, H.P.



GEOLOGICAL MAP OF THE SOUTHWESTERN PART OF SIRMOUR DISTRICT.

The Tal Group of early Cambrian age is heterolithic sequence of siltstone dolomite shale ash grey tuffs chert/ phosphorite, carbonaceous shale grit and quartz

arenite with algal structure and trilobite. Subathu formation is exposed in the window and outlier in the outer Krol belt in the Tons valley, composed of olive green shale, limestone quartzite and laterite. The Sirmour Group is represented by a thick pile of Palaeogene sediments exposed in the foothill bounded by Main Boundary Fault and Krol thrust; it consists of shale fossiliferous limestone quartz arenite siltstone clay, sandstone and pebble beds. The Siwalik Group of Mid Miocene to early Pleistocene. Composed coarse clastic fluvial deposits of sandstone clay and conglomerates. The quaternary sediments (Older and Newer Alluvium) along prominent channels consisting of sand silt clay pebble and cobble occurring in the present channels are of Mid to late Pleistocene and Holocene age.

The general trend of rocks in the area is NW-SE and E-W direction with dip varying from 10 to 40 on either side. Beside MBF, Krol, Giri, Chail and Jutogh thrusts are prominent. There are two major synformal axis, running NW-SE and passes through the Krol and Tal Group of rocks.

2.2 GEOLOGY OF THE CATCHMENT AREA:

The rocks of Yamuna catchment mainly belong to Pre Cambrian to To Siwalik Group, older alluvium, newer alluvium. The stratigraphic sequence of the effective catchment is given in the table below and in figure

Formation/Group	Lithology	Age
Newer Alluvium	Grey micaceous sand silt clay and boulders	Holocene
Dun Gravel	Sand clay pebble cobble and boulders	Mid to Late Pleistocene
Siwalik Group	Sandstone, clay and conglomerates	Mid Miocene to Early Pleistocene
Sirmour Group	Shale sandstone clay local pebble beds and limestone lenses	Eocene to Miocene
Shali Group	Limestone, dolomite slate and quartzite	Meso- Proterozoic
Jaunsar Group	Shale siltstone quartzite limestone and quartzite	Upper Proterozoic
Baliana Group	Pink dolomite, carbonaceous slate, shale and quartzite	Upper Proterozoic
Krol Group	Dolomite, limestone red shale and sandstone	Upper Proterozoic

Mining Plan of Auctioned Quarry

Tal Group	Siltstone dolomite, chert, phosphorite carb shale tuffs sandstone limestone and grit	Cambrian
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2.2a. GEOLOGY OF THE AUCTIONED AREA

The Auctioned Area forms a part of the Riverbed covered with boulders cobble pebbles, river borne bajri, sand and clay deposits of channel alluvium. The rocks along the banks are Terrace alluvium and Fan Alluvium and in the higher reaches of catchments is Upper Siwalik Formation.

GEOLOGICAL SUCCESSION OF SIRMOUR DISTRICT AROUND AUCTIONED AREA

GROUP		LITHOLOGY	AGE
Newer Alluvium	Channel Alluvium	Grey fine to coarse sand and silt along with cobble and pebbles of fans and terrace alluvium	QUARTRNARY
	Terrace Alluvium	Grey micaceous, fine to coarse grained sand, silt, clay and cobble and pebbles	
	Fan Alluvium	Brownish grey clay, sand and gravel white to grey cobble-pebble sequence	
Older Alluvium	Dun Gravels	Multicyclic sequence of brown to grey silt, clay with kankar and reddish brown to grey micaceous sand with pebble and cobbles	
Siwalik Group	Upper Siwalik	B Massive conglomerates with red clays matrix, minor sandstone and earthy buff-brown clay stone	NEOGENE
		A Sandston, ,clay and conglomerate alternations	
	Middle Siwalik	B Massive sandstone and minor conglomerate with local variegated clay stone	
		A Medium to coarse sandstone and red clay alternation subordinate pebbly clay stone with lenses of conglomerate	
	Lower Siwalik	B Fine to medium grained occasionally pebbly sandstone having calcareous cement and chocolate to maroon clay stone alternations	
		A Red clay stone with thin intercalations of medium to fine grained sandstone	



SIWALIK GROUP: The Siwalik Group composed mainly of fluvial sequences i.e. mudstone, sandstone and coarsely bedded conglomerates which were laid down in a vast basin during Middle Miocene to Upper Pleistocene time. The sediments were deposited by the rivers flowing southwards from the greater Himalayas. The sediments were uplifted through intense tectonic regimes resulting subsequently in a unique topographic entity-the Siwalik Ranges. The Siwaliks are divided into three major subgroups-Lower, Middle and Upper.

The erosion and tectonic activity has greatly affected the topography of the Siwaliks. Their present day morphology comprised valleys of various orders, gullies, earth pillars etc.

Lower Siwalik: The lower Siwaliks consists essentially of sandstone-clay alteration. The basal sequence consists of medium grained sub-greywacke interbedded with thick red clay. The upper sequence composed of sandstone which is coarser and clasts become more frequent while the clays proportion is less. The top horizon consists of conglomerate with well rounded clasts of grey quartzite possibly derived from Shali/Nagthat Formations. The total thickness is 1600m.

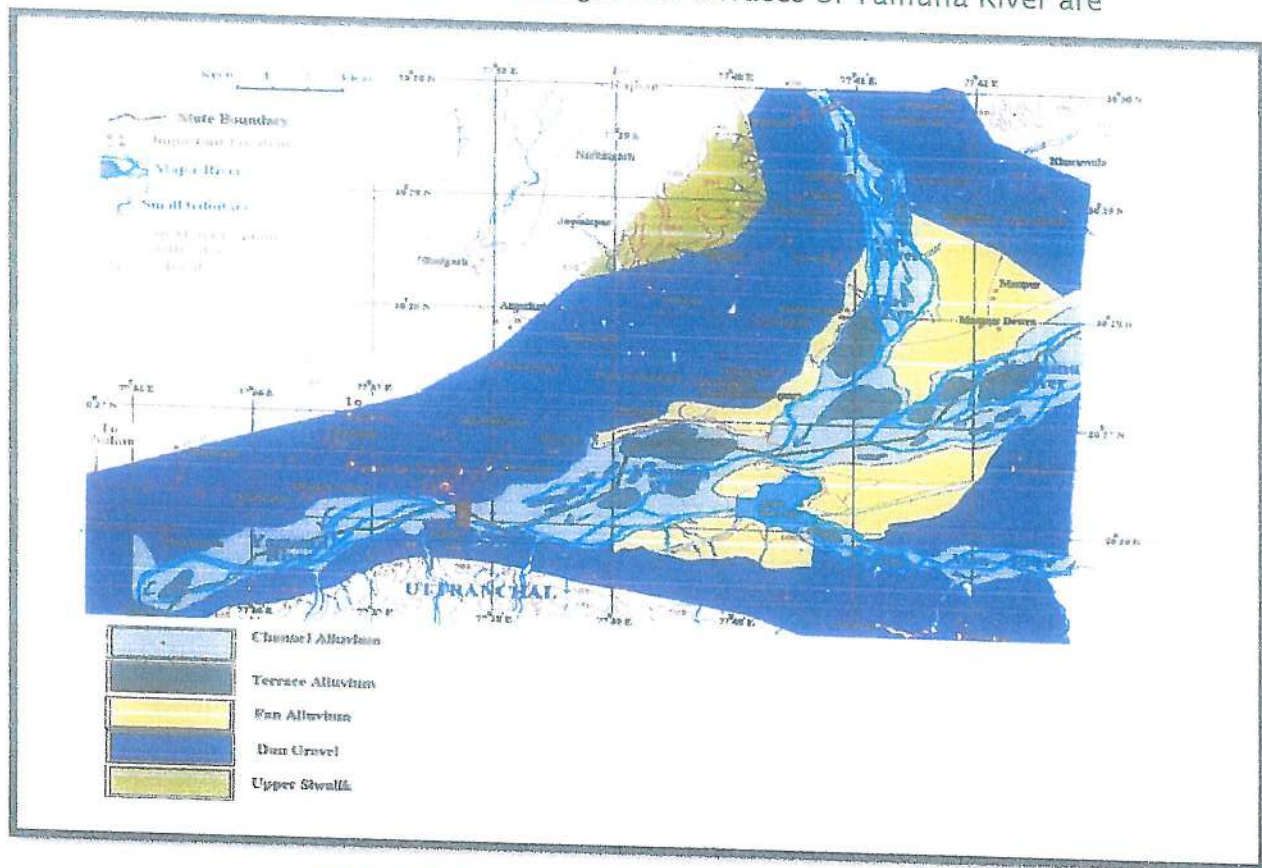
Middle Siwalik: The middle Siwaliks subgroup comprises large thickness of coarse micaceous sandstone along with some inter-beds of earthy clay and conglomerate. The sandstone is less sorted than those in the Lower Siwaliks. The clay bands are dull coloured and silty. The general thickness is 1400 to 2000m.

Upper Siwaliks: The upper Siwaliks represented mainly by sandstone interbedded with silt and conglomerates. The basal part is represented consist of soft, massive, pebbly sandstone with intercalations of conglomerates). In the upper portion the conglomerate intercalations are replaced by the clay intercalations. The thickness is about 2300m.

Older Alluvium: The older alluvium in the Dun valley is designated as Dun gravels. It is a multi-cyclic sequence of brown to grey silt, clay with kankar and radish brown to grey silt, clay with kankar and radish brown to grey micaceous sand with pebbles and cobbles.

Newer Alluvium: The newer alluvium has been subdivided into fan alluvium composing brownish grey clay, sand and gravel white to grey cobble and pebble

sequence lying unconformably over the older alluvium within a narrow zone immediately to the south of Siwalik Range. The terraces of Yamuna River are



GEOLOGICAL MAP AROUND AUCTIONED AREA

comprised of cyclic sequence of grey micaceous fine to coarse grained sand, silt, clays, cobbles, boulders and pebbles. Channel alluvium exposed as point bar/channel bars within the active channels is composed of grey, fine to coarse micaceous sand and silt along with cobbles and pebbles of the fans and terrace alluvium.

The Auctioned Area comprises predominantly the quartzite, granite boulders, sand and river born Bajri of sandstone material.

2.3 NATURE OF BOULDERS/COBBLES AND SAND

The Auctioned Area lies within the regular course of Yamuna River; it gets floods in the rainy season. The deposits consist of quartzite and sand fraction of granite, limestone and braccia fragments. The boulders are white, spotted white, greenish white, pink, purple and dark green in colour. Quartzite fragments are rounded to sub-rounded and discoidal in shape, having smooth surfaces. The size varies from gravel to boulder. The thickness of the deposit varies from one to three meters. During the monsoon season the mine pits are replenished to a large extent ascribed to erosion of Siwalik rocks due to heavy rainfall and consequent fast flowing water in the higher regions of the catchment area. The Auctioned Area being located in the gentle gradient

region there is a sudden decrease in the carrying capacity and competency of the river thus there is annual deposition of 10 to 25 cm in the Auctioned Quarry.



NATURE OF BOULDERS OCCURRING IN THE GIRI RIVER BED IN AUCTIONED AREA

2.4 NATURE OF THE ROCK ALONG THE BANK

The strata exposed along the banks belong to terrace alluvium, Dune gravel of Newer alluvium Formation consisting of clay sand and loose boulders pebble, cobbles etc.

2.5 THE DESCRIPTION OF ANNUAL DEPOSITION WITH RESPECT TO GEOLOGY OF CATCHMENT AREA.

From field experience and data collected during monsoon, it has been observed that in this type of stream, the replenishment factor is 100% of the material excavated during the year. Therefore, the material excavated up to the one meter depth shall be replenished during the raining season (i.e. Non working Season).

3 RESERVE ESTIMATE

3.1 PERCENTAGE WISE DISTRIBUTION OF STONE, GRAVEL SAND ETC.

In order to calculate the percentage of various sediments in the river bed four trial pits were dug having Length 1mX Width 1mX Depth 1m at four different locations of Auctioned Quarry, the material excavated from these pits was collected and composited and sieved first into said four categories. The total river bed material obtained is classified into the following four categories.

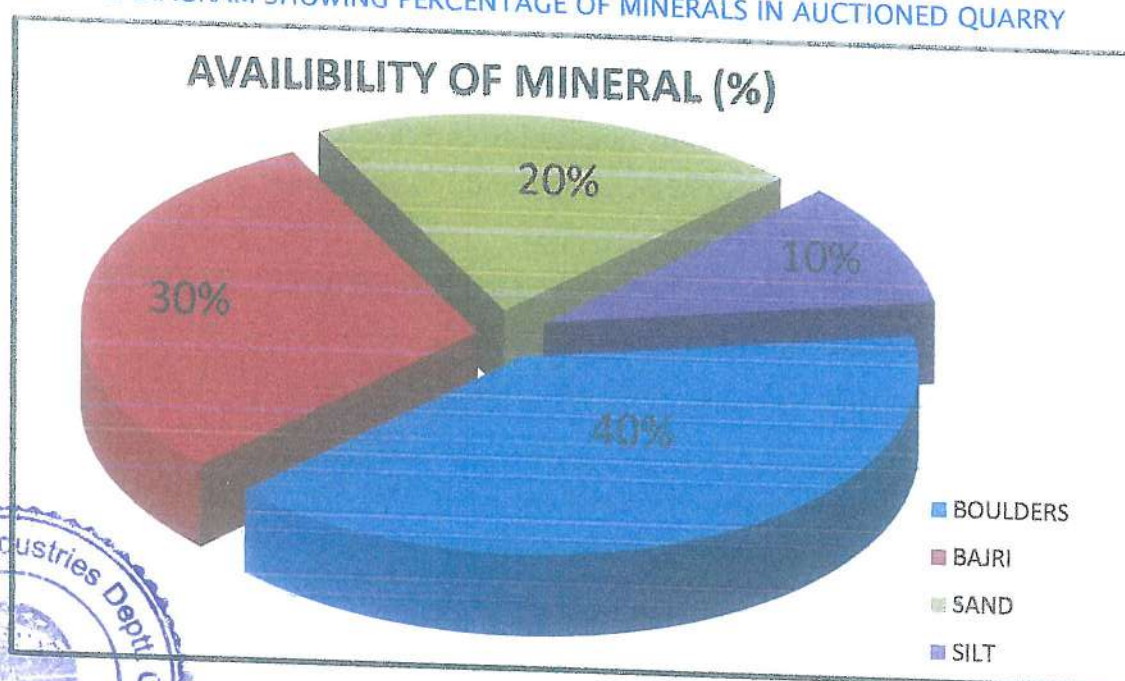
Mining Plan of Auctioned Quarry

Sr. No.	Category/mineral/ material	Size	End Use
1	Boulders	>64 mm	The material to be used in making grit
2	River born Bajri	64mm to 12mm	To be sold in the market after screening for construction work
3	Sand	12mm to 1/16mm	After screening to be sold in open market
4	Silt sand -clay mixture	>1/16mm	To be used in back filling

THE PERCENTAGE OF EACH CATEGORY IS GIVEN BELOW:

Percentage of River material in the Auctioned Area Giri river			
Category-1	Category-2	Category-3	Category-4
Boulders	River born Bajri	Sand	Silt/sand-clay mixture
40%	30%	20%	10%

PIE DIAGRAM SHOWING PERCENTAGE OF MINERALS IN AUCTIONED QUARRY



3.2 ESTIMATE OF GEOLOGICAL RESERVES

The average depth of sediments in the mining area is expected to be more than 10.00 meters in total mining area as per information gathered from Public works department and other departments like IPH involved in

construction of bridges and wells respectively, the geological reserves up to the depth of three meter are given below:

GEOLOGICAL RESERVES (METRIC TONNES) OF DIFFERENT CATEGORY MINERALS AVAILABLE IN THE 393914 SQ. M AREA/ YEAR, IN YAMUNA RIVER AT AUCTIONED AREA , UPTO A DEPTH OF THREE METER			
Category-1	Category-2	Category-3	Category-4
BOULDERS	RIVER BORN BAJRI	SAND	SILT/SAND-CLAY MIXTURE
1476036	1107027	738018	369009
TOTAL RESERVES OF DIFFERENT CATEGORY MINERALS AVAILABLE IN AUCTIONED AREA		3690090 METRIC TONNES	

3.3 ESTIMATE OF MINEABLE RESERVES OF BOULDER, BAJRI (GRAVELS) AND SAND

The average depth of sediments in the Auctioned area is expected to be more than 3.00 meters in total Auctioned Area however considering the guidelines of river bed mining policy the Mineable reserves were computed in Auctioned Area up to the one meter depth.

The Mineable reserves up to the depth of one meter are given below:

ESTIMATED MINEABLE RESERVES (METRIC TONNES) OF DIFFERENT CATEGORY MINERALS AVAILABLE IN THE 393914 SQ. M AREA/ YEAR, IN YAMUNA RIVER AT AUCTIONED AREA , UPTO A DEPTH OF ONE METER			
Category-1	Category-2	Category-3	Category-4
BOULDERS	RIVER BORN BAJRI	SAND	SILT/SAND-CLAY MIXTURE
354523	265892	177261	88631
TOTAL RESERVES OF DIFFERENT CATEGORY MINERALS AVAILABLE IN AUCTIONED AREA		886307 METRIC TONNES	
TOTAL MINEABLE RESERVES OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL AVAILABLE (CATEGORY 1 TO CATEGORY -3)		797676 METRIC TONNES	

3.4 ESTIMATE DEPOSITION OF DIFFERENT CONSTITUENTS OF MINERAL OF MINEABLE RESERVES OF BOULDER, BAJRI (GRAVELS) AND SAND

As the mineral replenishes every year, the reserves are always renewable and shall not exhaust as such geological reserves in river bed has no relevance to the production size. It has been experienced that during monsoon, in this type of stream,

the replenishment factor is 100% of the material excavated during the year. The material excavated up to one meter depth would be replenished during the raining season (i.e. Non working Season).

(4) MINE DEVELOPMENT AND PLAN OF PROGRESSIVE MINING

4.1 Development and production Programme for First Five years

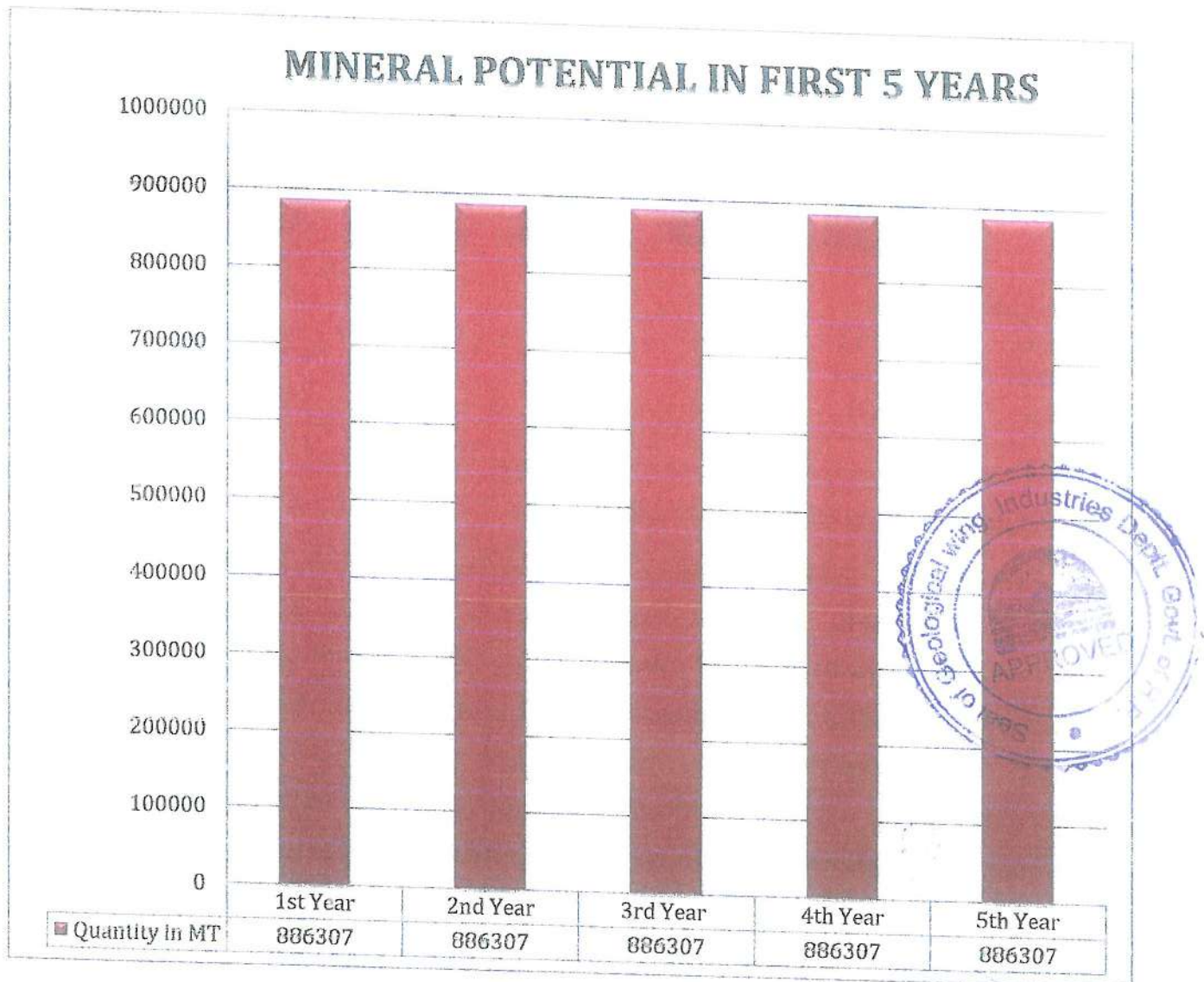
The purpose of excavated minor minerals from the auctioned area is to use the material in to be installed stone crusher unit as source of raw material for manufacturing Grit. As such, the primary raw material required for stone crusher is boulders and Bajri. The river borne material contains boulders, sand, bajri and mixture of clay/silt. The clay/silt does not have any market value and this material will be used for rehabilitation work. In order to calculate the mineable reserves, the following points are taken in to consideration.

- 1 A Geological map is prepared and main Litho-units were marked on the plan to know the surface spread of each unit.
- 2 The different constituents of river borne deposits such as boulder, bajri, sand and silt based on size classification were considered for reserve calculation. Although it is not possible to mark these units separately on the geological map as such two pits at different locations in the Auctioned area of 1x1x1 meter were got dug in the mining area and material so excavated was separated into different size and their percentage was worked out and this percentage was taken in to account during calculation of reserves.
- 3 Keeping in view of the replenishment factor, the complete mineable area shall be explored every year.
- 4 The mining shall be undertaken manually or Mechanically if permitted by the departments.
- 5 Approximately 72% of the Auctioned Area is available for the mining as per total requirement of the mineral per year.
- 6 One meter depth from the surface is considered for calculating the Mineable reserves. The mineable reserves are inexhaustible as the mined areas are getting replenished during the successive rainy season
- 7 The specific gravity of boulders and bajri is 2.65 and of sand and mixture of clay/silt is 1.85 hence the average specific gravity of 2.25 has been considered for calculation of deposit in the Auctioned Quarry.
- 8 The Mineable reserves calculated as per the production requirement have been calculated in the mineable area.

Mining Plan of Auctioned Quarry

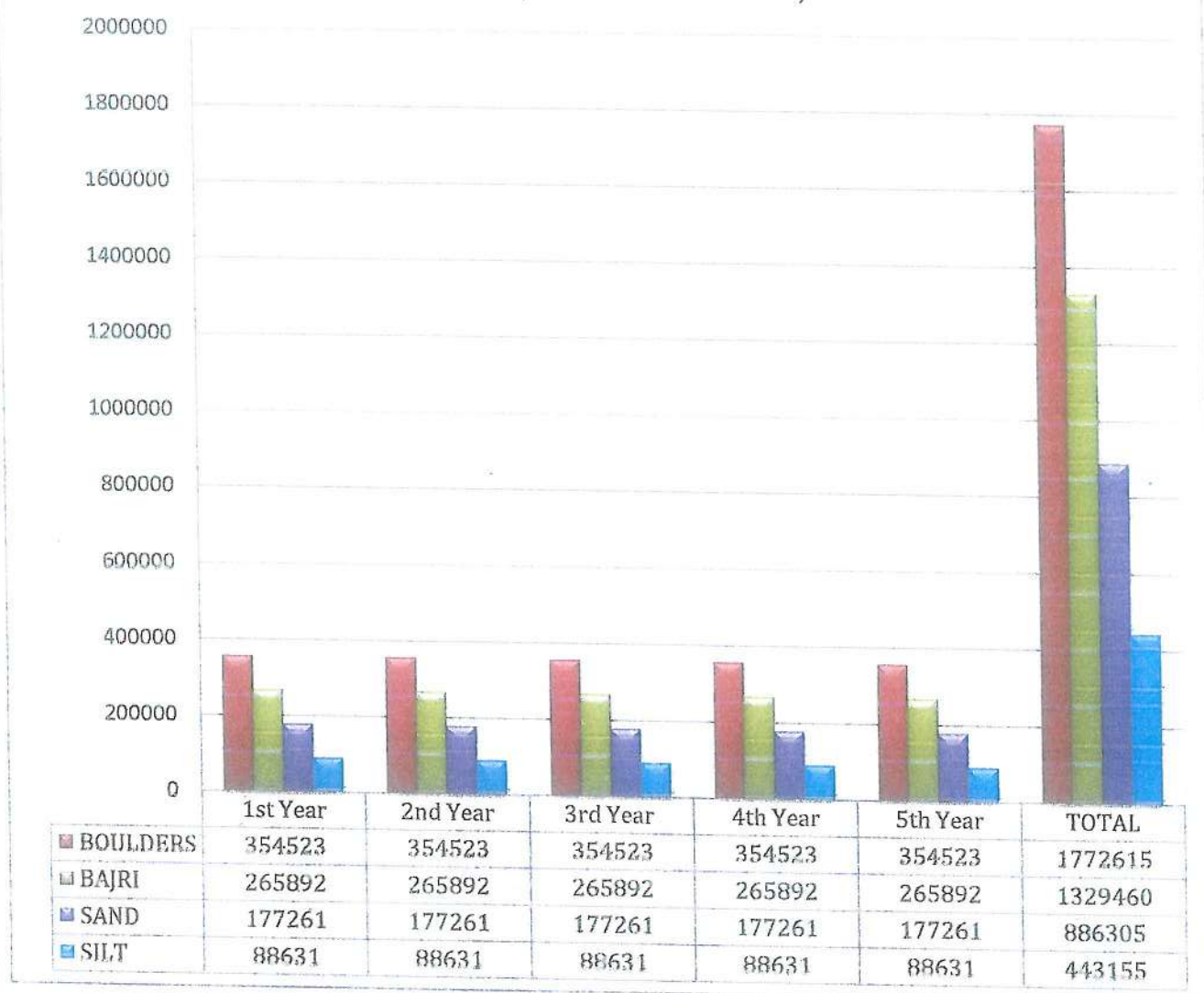
TOTAL AUCTIONED AREA	546680 Sq. m
AVAILABLE MINEABLE AREA AFTER LEAVING NO MINING ZONE	393914 Sq. m (72%)

FIVE YEAR POTENTIAL					
YEAR	BOULDERS	BAJRI	SAND	SILT/CLAY	TOTAL
1st Year	354523	265892	177261	88631	886307
2nd Year	354523	265892	177261	88631	886307
3rd Year	354523	265892	177261	88631	886307
4th Year	354523	265892	177261	88631	886307
5th Year	354523	265892	177261	88631	886307
TOTAL	1772615	1329460	886305	443155	4431535



Graph showing total mineral potential in first five years

PRODUCTION OF EACH MINERAL IN FIRST FIVE YEARS (In Metric Tonnes)



Graph showing the mineral wise proposed production in first five years

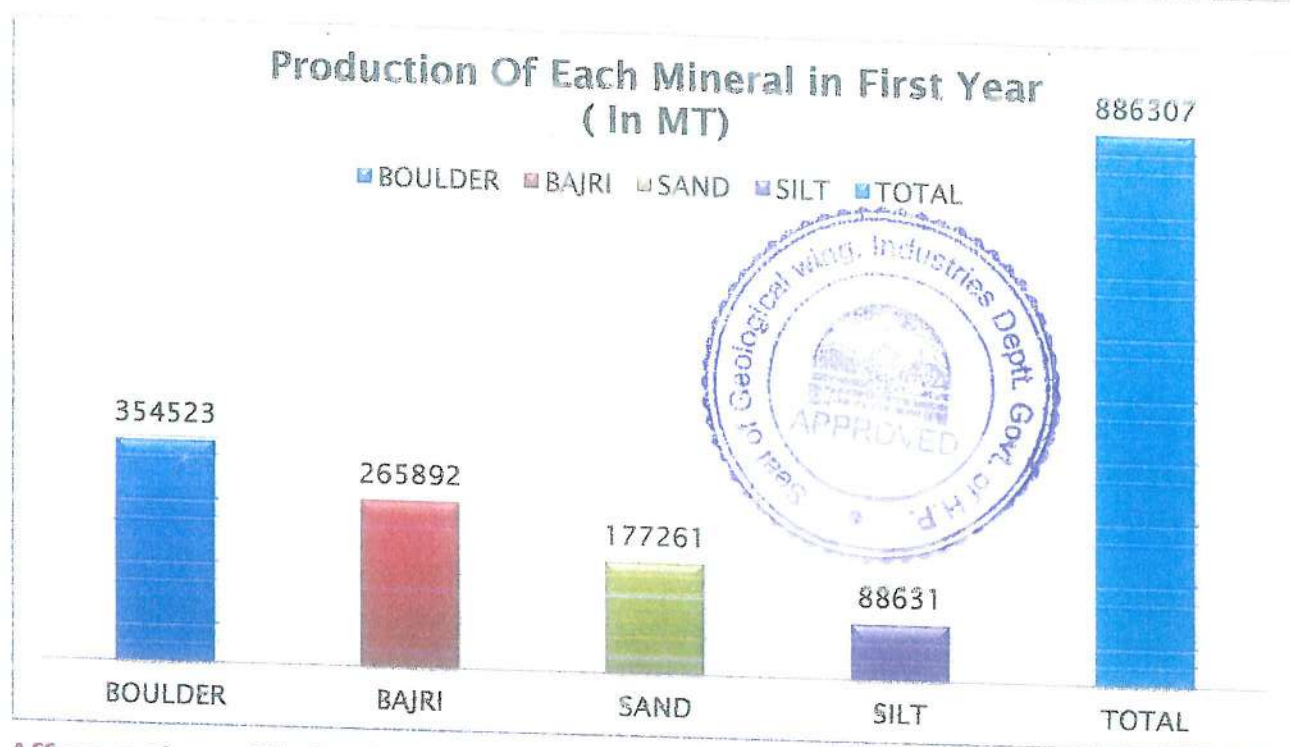
4.2 YEAR WISE PRODUCTION DETAILS

Yamuna River gets replenished during monsoon and winter rains when the river gets heavy load. The river level is raised up to 1.5 to 2.00 meters for sometimes even during the non-rainy season whenever the gates of Dakpathar Barrage are opened for de-silting purpose. The mining has been planned in full block up to the depth of 1.00 metre to give a better chance for complete replenishment. The worked out block shall get replenishment during monsoon and winter rain seasons for recharging the worked out area and the worked out area shall be fully replenished. Complete 393914 Sq. meters of area shall be available for working every year.

4.2.A PRODUCTION IN THE FIRST YEAR (Plate No. 4)

During the first year mining will be done in a block of 393914 Sq. Meters and the production of different categories of minerals will be as given in table below

Material	Boulders	River born Bajri	Sand	Silt/ sand/ clay mixture	Total Production
Production in First year (Metric Tonnes)	354523	265892	177261	88631	886307
PRODUCTION OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL I.E. BOULDERS, BAJRI AND SAND)AVAILABLE IN GIRI RIVER(CATEGORY 1 TO CATEGORY -3) IN FIRST YEAR					797676 Metric Tonnes



Afforestation - Whole of the area is within the high flood level, therefore there is no possibility of any plantation within the Auctioned Quarry. Contractor shall find out suitable place in consultation with concerned Gram Panchayat near the b and raise plantation of local species.

Protection of banks - The excavation of river bed material in the block is not likely to impact the banks in any way. Moreover the adjoining land belongs to different private individuals. Therefore no check dams are proposed along the banks in the Auctioned Quarry.

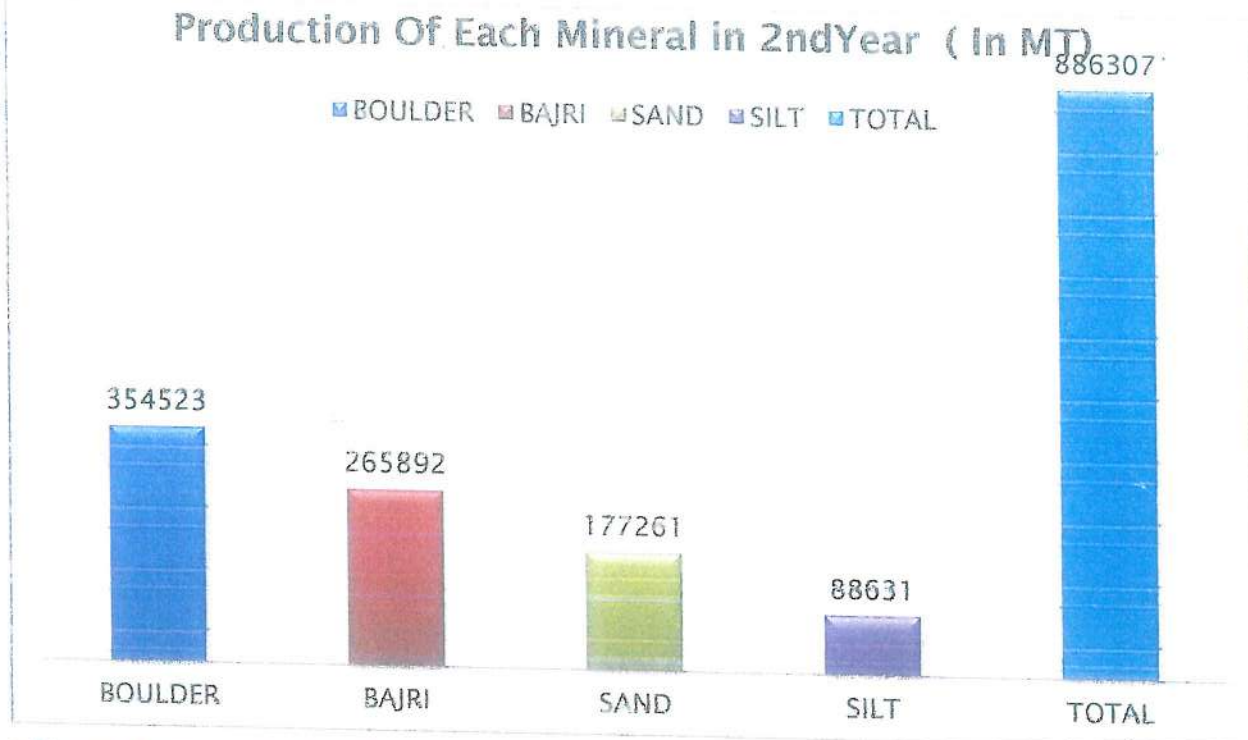
Soil dump - The material i.e. Silt/sand-clay mixture (category-4) generated during the mining process as waste shall be used for approach roads and other works and the remaining shall be dumped in consultation with the local Panchayats.

4.2.B PRODUCTION IN THE SECOND YEAR (Plate No. 4)

During the second year mining will be done in a block of 393914 Sq. Meters and the production of different categories of minerals will be as given in table below

Material	Boulders	River born Bajri	Sand	Silt/ sand/ clay mixture	Total Production
Production in Second year (Metric Tonnes)	354523	265892	177261	88631	886307
PRODUCTION OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL I.E. BOULDERS, BAJRI AND SAND)AVAILABLE IN GIRI RIVER(CATEGORY 1 TO CATEGORY -3) IN SECOND YEAR					797676 Metric Tonnes

Production Of Each Mineral in 2ndYear (In MT)



Afforestation - Whole of the area is within the high flood level, therefore there is no possibility of any plantation within the Auctioned Quarry. Contractor shall find out suitable place in consultation with concerned Gram Panchayat near the b and raise plantation of local species.

Protection of banks - The excavation of river bed material in the block is not likely to impact the banks in any way. Moreover the adjoining land belongs to different private individuals. Therefore no check dams are proposed along the banks in the Auctioned Quarry.

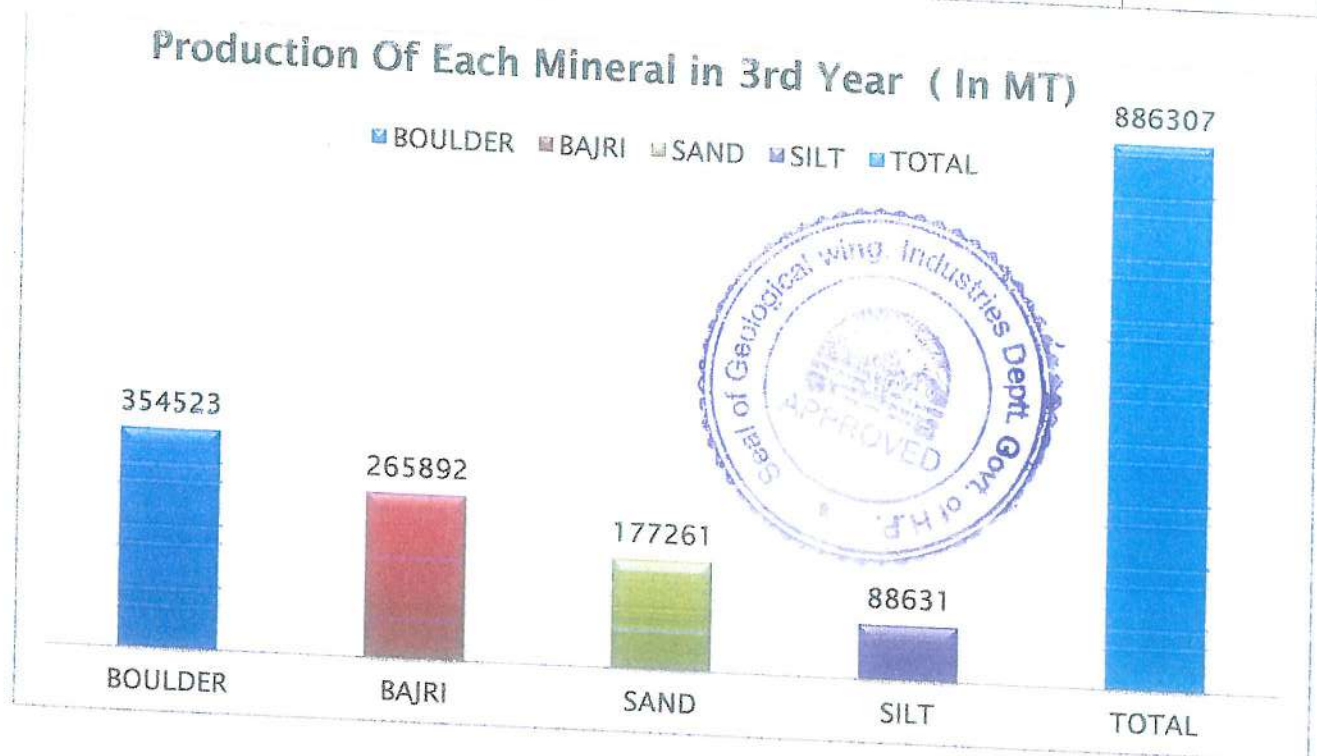
Soil dump - The material i.e. Silt/sand-clay mixture (category-4) generated during the mining process as waste shall be used for approach roads and other works and the remaining shall be dumped in consultation with the local Panchayats.

4.2.C PRODUCTION IN THE THIRD YEAR (Plate No. 4)

During the third year mining will be done in a block of 393914 Sqm. the production of different categories of minerals will be as given in table below

Material	Boulders	River born Bajri	Sand	Silt/ sand/ clay mixture	Total Production
Production in Second year (Metric Tonnes)	354523	265892	177261	88631	886307
PRODUCTION OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL I.E. BOULDERS, BAJRI AND SAND)AVAILABLE IN GIRI RIVER(CATEGORY 1 TO CATEGORY -3) IN THIRD YEAR					797676 Metric Tonnes

Production Of Each Mineral in 3rd Year (In MT)



Afforestation - Whole of the area is within the high flood level, therefore there is no possibility of any plantation within the Auctioned Quarry. Contractor shall find out suitable place in consultation with concerned Gram Panchayat near the b and raise plantation of local species.

Protection of banks - The excavation of river bed material in the block is not likely to impact the banks in any way. Moreover the adjoining land belongs to different private individuals. Therefore no check dams are proposed along the banks in the Auctioned Quarry.

Soil dump - The material i.e. Silt/sand-clay mixture (category-4) generated during the mining process as waste shall be used for approach roads and other works and the remaining shall be dumped in consultation with the local Panchayats.

4.2.D PRODUCTION IN THE FOURTH YEAR (Plate No. 4)

During the fourth year mining will be done in a block of 393914 Sqm. and the production of different categories of minerals will be as given in table below

Material	Boulders	River born Bajri	Sand	Silt/ sand/ clay mixture	Total Production
Production in Second year (Metric Tonnes)	354523	265892	177261	88631	886307
PRODUCTION OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL I.E. BOULDERS, BAJRI AND SAND)AVAILABLE IN GIRI RIVER(CATEGORY 1 TO CATEGORY -3) IN FOURTH YEAR					797676 Metric Tonnes



Afforestation - Whole of the area is within the high flood level, therefore there is no possibility of any plantation within the Auctioned Quarry. Contractor shall find out suitable place in consultation with concerned Gram Panchayat near the b and raise plantation of local species.

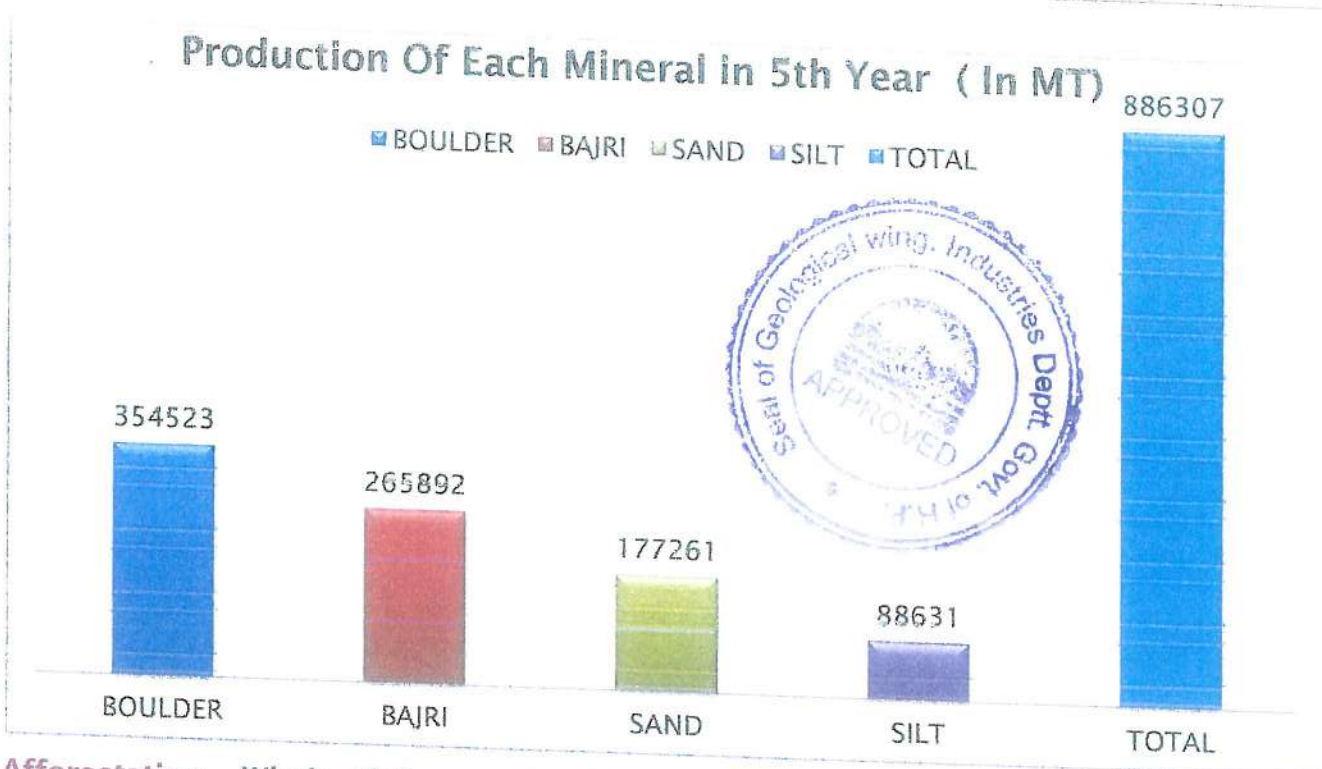
Protection of banks - The excavation of river bed material in the block is not likely to impact the banks in any way. Moreover the adjoining land belongs to different private individuals. Therefore no check dams are proposed along the banks in the Auctioned Quarry.

Soil dump - The material i.e. Silt/sand-clay mixture (category-4) generated during the mining process as waste shall be used for approach roads and other works and the remaining shall be dumped in consultation with the local Panchayats.

4.2.E PRODUCTION IN THE FIFTH YEAR (Plate No. 4)

During the Fifth year mining will be done in a block of 393914 Sqm. and the production of different categories of minerals will be as given in table below

Material	Boulders	River born Bajri	Sand	Silt/ sand/ clay mixture	Total Production
Production in Fifth year (Metric Tonnes)	354523	265892	177261	88631	886307
PRODUCTION OF MARKETABLE/ COMMERCIALY EXPLOITABLE MATERIAL I.E. BOULDERS, BAJRI AND SAND)AVAILABLE IN GIRI RIVER(CATEGORY 1 TO CATEGORY -3) IN FIFTH YEAR					797676 Metric Tonnes



Afforestation – Whole of the area is within the high flood level, therefore there is no possibility of any plantation within the Auctioned Quarry. Contractor shall find out suitable place in consultation with concerned Gram Panchayat near the Auctioned Area and raise plantation of local species.

Protection of banks – The mining Block lies almost in the centre of the river. And excavation of river bed material in the block is not likely to impact the banks in any way. Moreover the adjoining land belongs to different private individuals. Therefore no check dams are proposed along banks in the Auctioned Quarry

Soil dump – The material i.e. Silt/sand-clay mixture (category-4) generated during the mining process as waste shall be used for approach roads and other works and the remaining shall be dumped in consultation with the local Panchayats.

4.3 END USE OF MINERAL:

The extracted stone shall be used for manufacturing of grit and possibility shall also be explored to use the waste material in road construction works.

4.4 TRANSPORT OF MINERAL

The Auctioned Area is in the river bed and there is very low to no traffic from the mining Auctioned however; for the transportation of the loaded vehicles to the nearest approach road, the vehicles may pass through private as well as Govt. Lands. The project proponent shall made necessary arrangements between land owners (Pvt. & Govt.) and will take care of other issues, if any, at his own for the mineral transportation to the nearest road.

The main connectivity of this is with the Paonta-Purwala-Bharli-Dakpathar road. This road is in good condition enough to bear the additional truck/ transport created by operation of the stone crusher unit. As per proposed production of 797676 (886307-88631= 797676) metric tonnes of material shall be transported in a year by trucks. At this rate approx. 2659 metric tonnes of material shall be transported at an average per day (Total working days 300/year) for which an average 132-133 trucks with 20 metric tonnes capacity are required.



PART -II

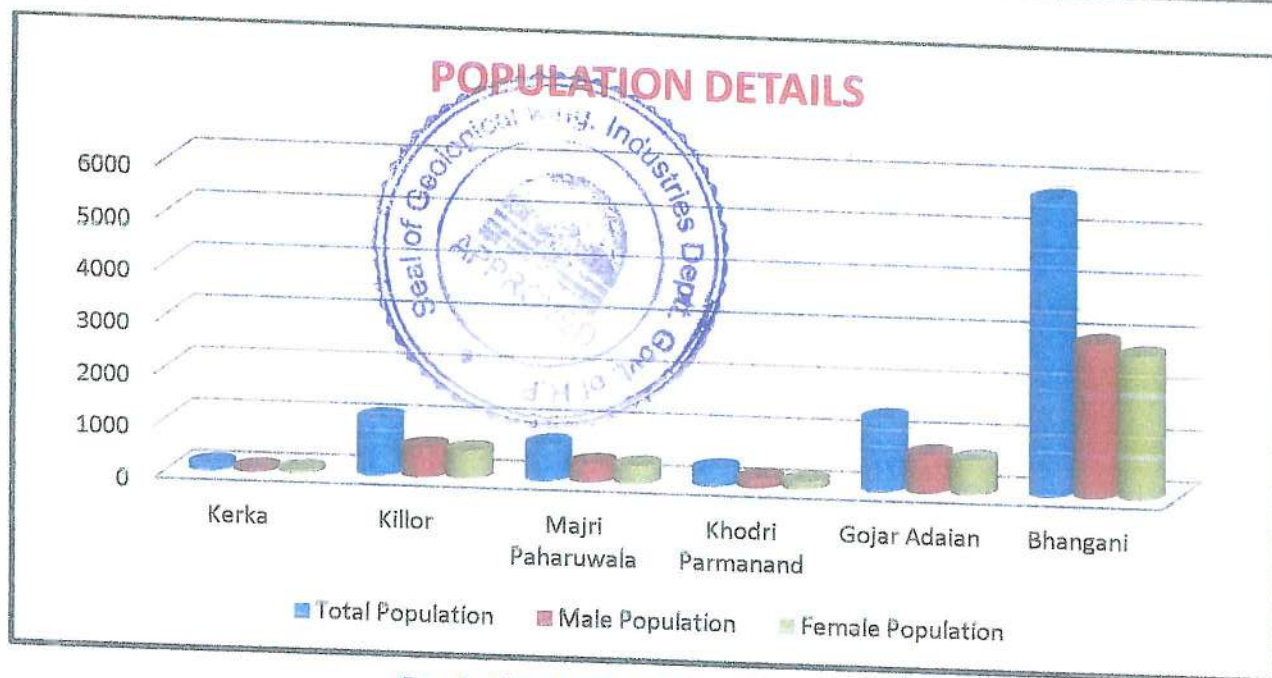
ENVIRONMENT MANAGEMENT PLAN

(I) BASE LINE DATA

1.1. Detail of Population Distribution

Table Showing Details of Population Distribution

Sr. No.	Name of Villages	Total Population	Male Population	Female Population
1	Kerka	130	64	66
2	Killor	1105	572	533
3	Majri Paharuwala	708	362	346
4	Khodri Parmanand	341	181	160
5	Gojar Adaian	1417	746	671
6	Bhagani	5757	2983	2774



Graph Showing Details of Population Distribution

1.2 SOCIO ECONOMY OF THE VILLAGE

The general economy of the village is agriculture and animal husbandry based and people go to find out job opportunities in far flung industrial area outside the state of Himachal as there is no industry in the nearby area. Therefore any job opportunity created by any entrepreneur may be of small magnitude shall add to the economy of the people. The people who are offered job in the mining as well in the stone crusher,

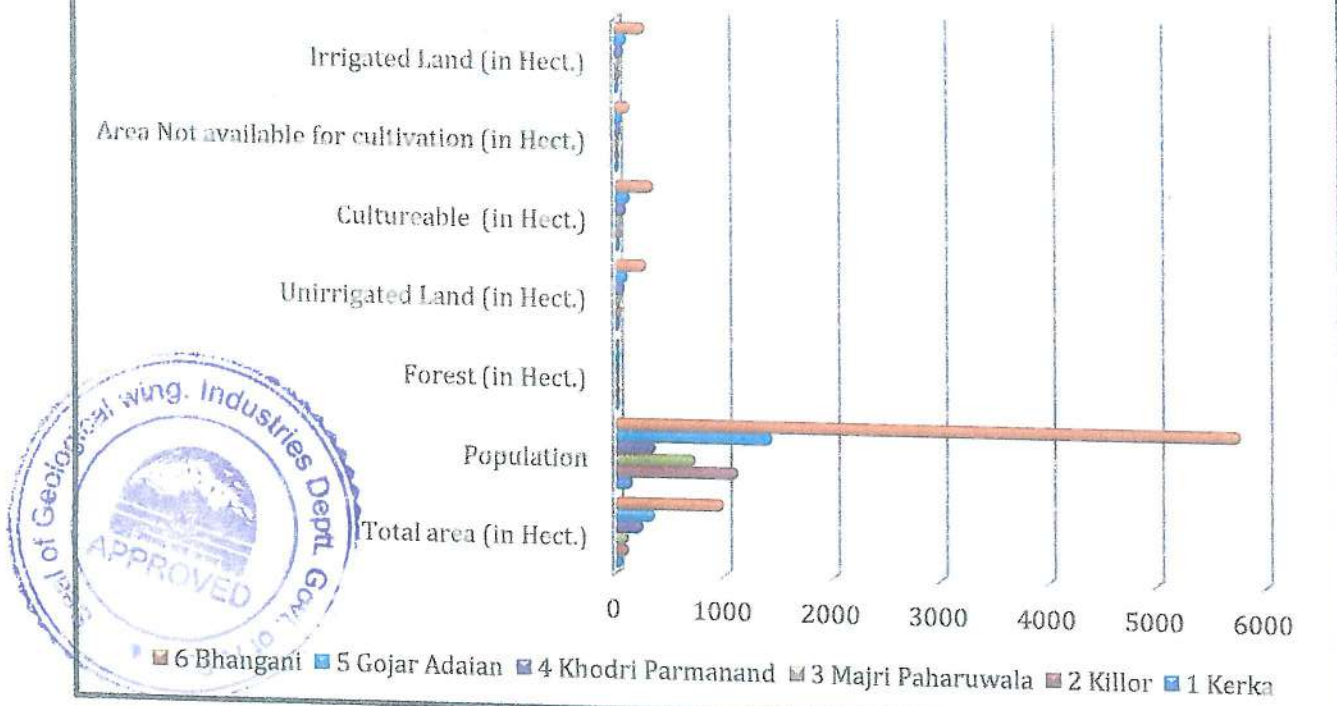
shall be a local employment at the door and such worker in the off hours, shall be able to look after their retinue agriculture and live stock.

1.3 LAND USE DETAIL WITH 5 KMS. RADIUS (ENCLOSED AS PLATE NO. - II)

Table Showing Details of Surrounding Villages

Sr. No.	Name of Villages	Total area (in Hect.)	Population	Forest (in Hect.)	Unirrigated Land (in Hect.)	Cultureable (in Hect.)	Area Not available for cultivation (in Hect.)	Irrigated Land (in Hect.)
1	Kerka	34	130	0	9.18	11.56	4.08	9.18
2	Killor	96	1105	0	25.92	32.64	11.52	25.92
3	Majri Paharuwala	93	708	0	25.11	31.62	11.16	25.11
4	Khodri Parmanand	230	341	0	62.1	78.2	27.6	62.1
5	Gojar Adaian	334	1417	0	90.18	113.56	40.08	90.18
6	Bhagani	973	5757	0	262.71	330.82	116.76	262.71

Graph Showing Details of Surrounding Villages



Graph Showing General Land Use Pattern of Surrounding Villages

1.4 AGRICULTURE

Agriculture is the main occupation of the people in the District, having different types of soil and agro-climate conditions which are quite suitable for the growing of various types of cereals vegetables, temperate and stone fruits and other crops. The major crops grown in the district are wheat, Paddy, Maize, Barley, Millet. Besides these, potato and a variety of vegetable like green-peas, cauliflower, cabbage, spinach tomatoes, etc. are also grown in the district. The economy is mostly agrarian and majority of population depend on agriculture and activities allied to it for earning their lively hood. The most of the land is un-irrigated and depends upon the rainy season. The part of the lands are irrigated and the irrigation facilities are provided by lifting water from streams, shallow Dug wells and medium to deep tube wells in the valley area. The source of water type of irrigation can be classified into following five classes.

- 1 Lift irrigation scheme
- 2 Well used for irrigation
- 3 Well use for domestic purpose
- 4 Kuhls
- 5 Tube wells

The water flows throughout the year in this khad. The land holding in the district are small and scattered. The farmers grow more than two crops in a year so as to get maximum production from the land. The crop rotation followed in the district is:

- I. Maize- Toria-Wheat
- II. Maize-Potato-Potato
- III. Maize- Toria-Wheat-BaisakhiMoong
- IV Paddy Wheat
- V Maize-Wheat

Wheat and Maize are major crops of the district. These are followed by gram, Paddy and other pulses. Besides these, Barley, Ragi, Mustered, Seasmum and Sugarcane are also grown in the district. Peas, Carrot, Cabbage, Ladyfinger, Tomato, Brinjal, Capsicum, Cauliflower, Cucumber, Pumpkin etc. Vegetables are also grown. About 95% of the total cultivable area in the district is rain fed. Hence production of the district mainly depends upon rain.

Table Showing Crop Pattern Surrounding Auctioned Area

June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Maize				Wheat				Maize			
Maize			Toria			Wheat			Maize		

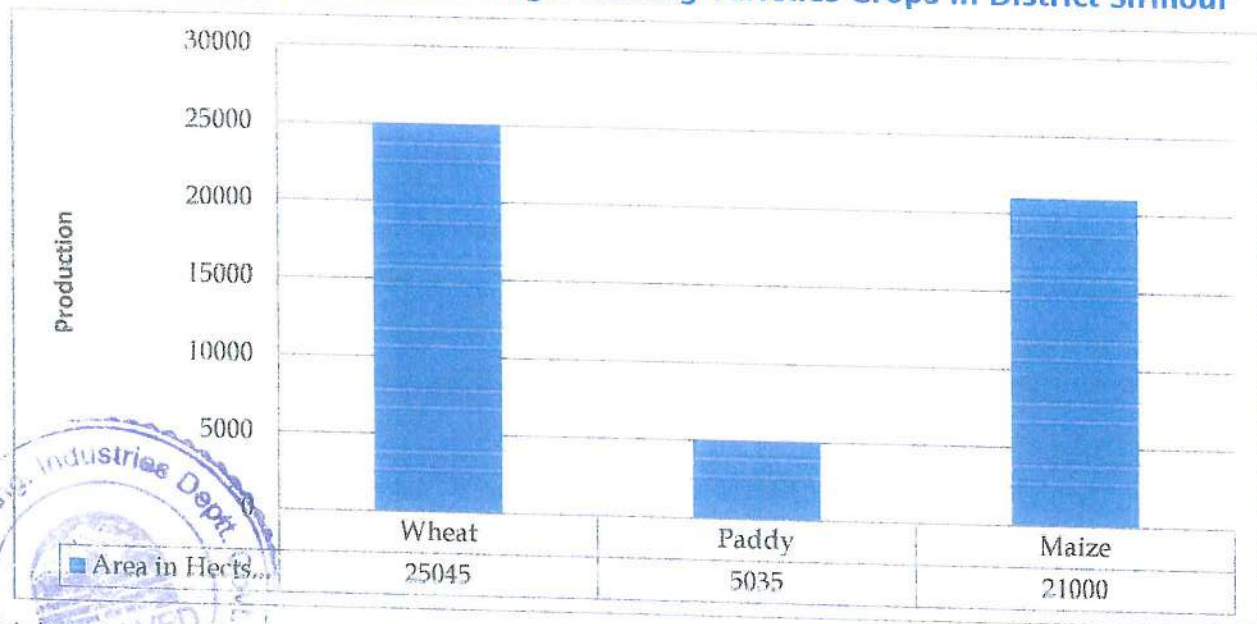
Mining Plan of Auctioned Quarry

Maize	Patato	Wheat	Maize
Maize	Potato	Potato	Maize
Bhindi	Cauliflower	French	
		Bean/Tomato/brinjal/CapsicumCucubits	
Sesame		Sarson/Raya/G Sarson	
Ginger/Caucasia/Turmeric	Potato	Wheat	Ginger
Paddy		Wheat	
Paddy		Barseem	
Paddy		Potato	
Kulthi Mash		B. Sarson/Raya/G. Sarson/Taramira(Eruca Sativa)	
Mash		Wheat	
Maize+ Mash		Wheat	
Arhar			

Table Showing Area under high yielding verities crops.

Name Crops	Area in Hects.
Wheat	25045
Paddy	5035
Maize	21000

Graph Showing Production of High Yielding Varieties Crops in District Sirmour



Adjoining to the mining areas, the terraces formed above flood plains of Yamuna river support agriculture crops. The water flows throughout the year in this River.

Production of vegetables as per the Statistical Outline of Himachal Pradesh 2015-16 for Sirmour District is as under :-

Table Showing Production of Vegetables in District Sirmour

Name Vegetables	Area in Hects.	Production in M.T.
Potato	1400	17500
Other Vegetables	5750	115000

Graph Showing Production of Vegetables in District Sirmour

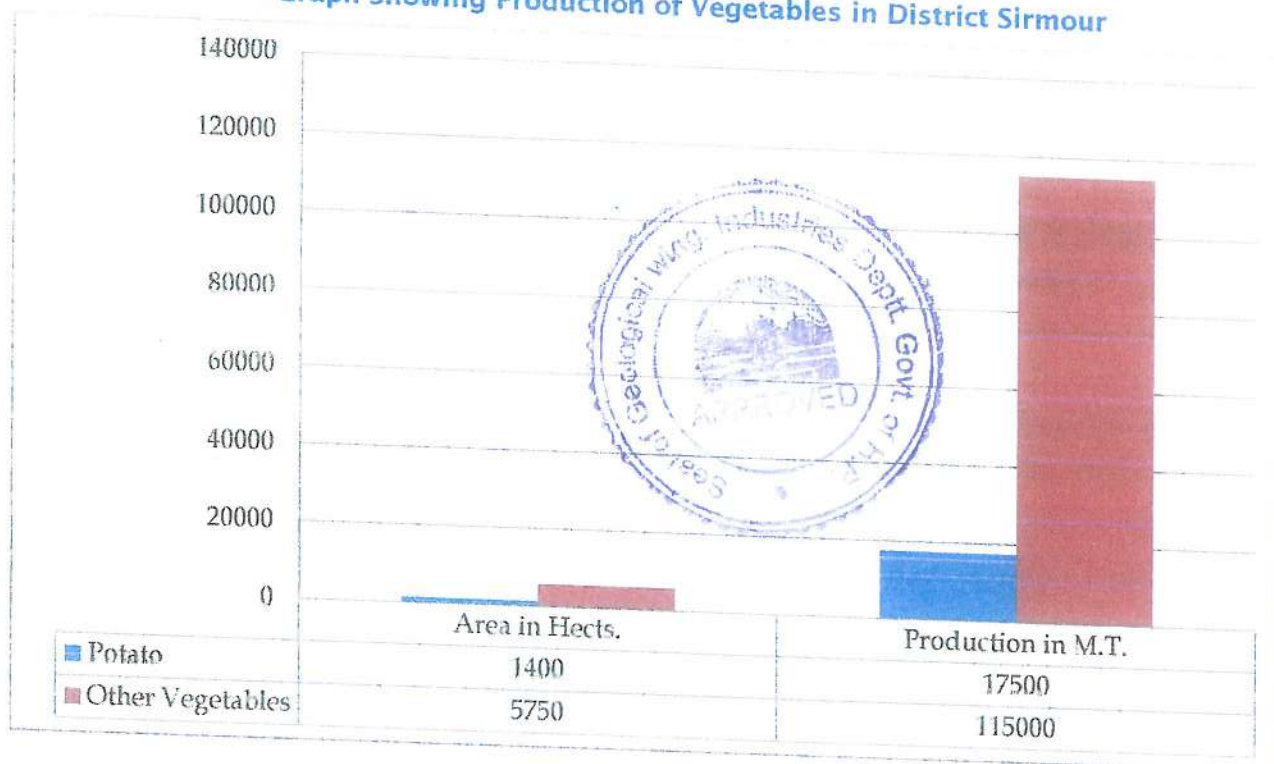
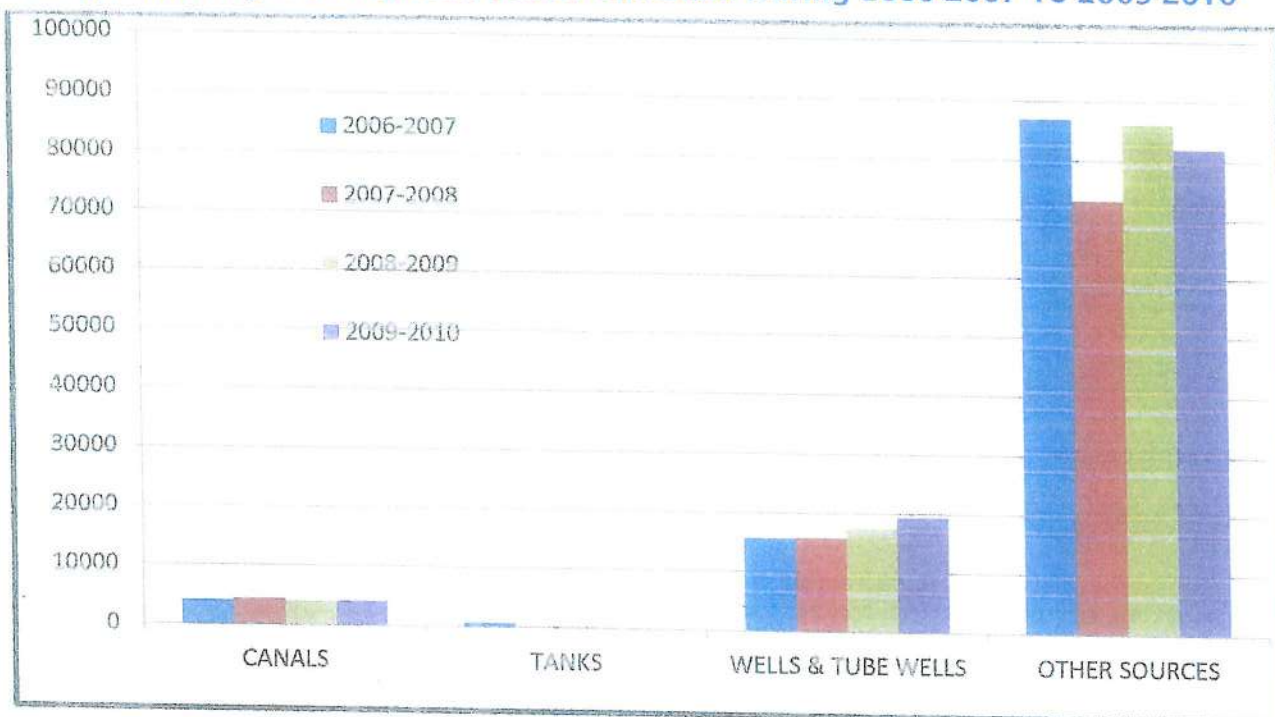


Table Showing Net Irrigated Area of the State During 2006-2007 To 2009-2010

Table Showing Net Irrigated area of the State during 2006-07 to 2009-10					
AGRICULTURAL YEAR	CANALS	TANKS	WELLS & TUBE WELLS	OTHER SOURCES	TOTAL AREA IN HECTS)
2006-2007	4107	701	15744	86997	107549
2007-2008	4390	236	15752	73172	93550
2008-2009	4046	283	17432	86091	107852
2009-2010	4104	149	19357	81966	105576

Graph Showing Net Irrigated Area of The State During 2006-2007 To 2009-2010



1.5 HORTICULTURE

The topography and agro-climatic conditions of the district are quite suitable for the productions of various fruits. The topography of the district can be grouped into three categories namely High hill areas located at the higher elevation mid hill areas and low lying valley areas. Fruits of various kinds depending upon the terrain climatic condition and soil are grown in the district. The Main horticulture produce of the area can be classified into four categories

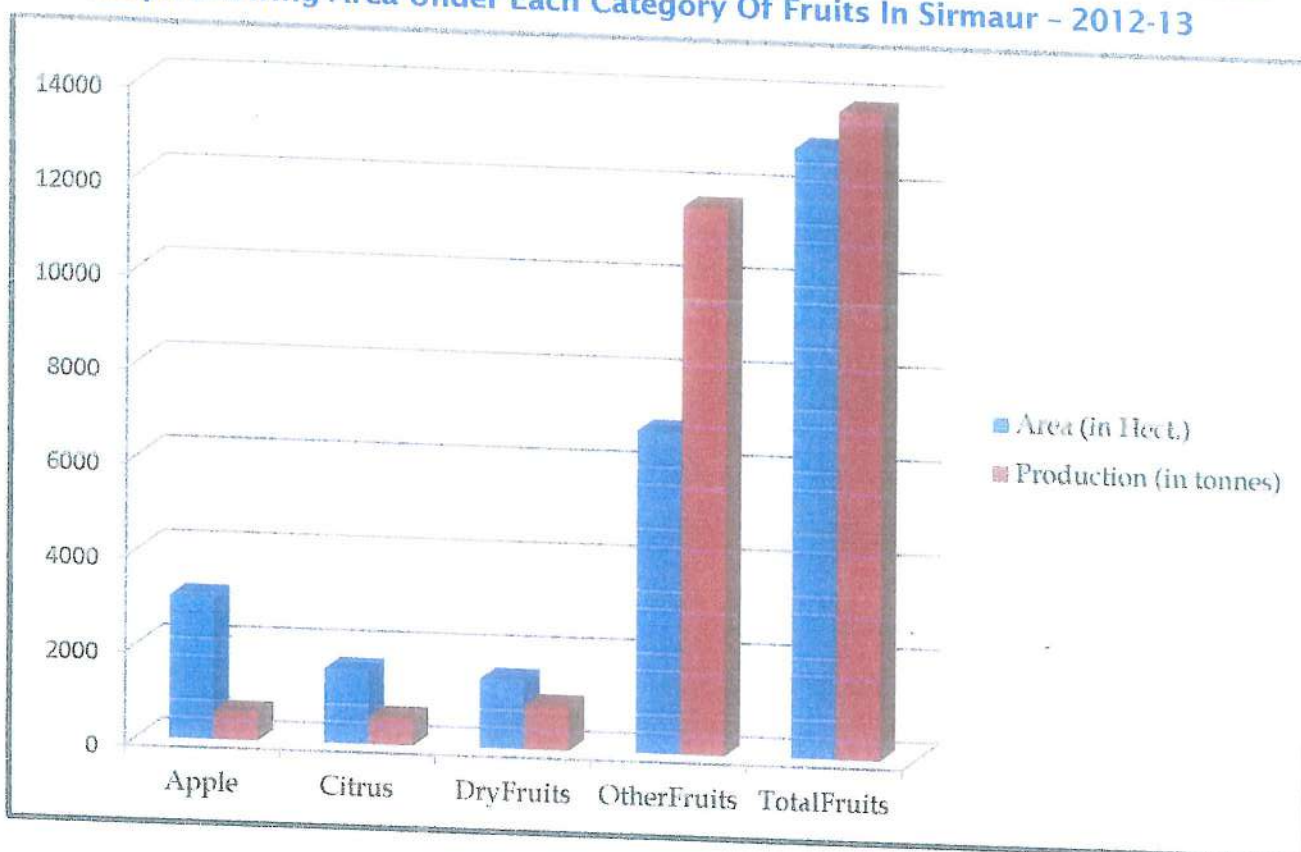
- 1 Citrus Fruits
- 2 Sub-tropical Fruits
- 3 Nuts and dry fruits
- 4 Other temperate fruits

The following table shows the area under cultivations of each fruit in district Sirmaur.

Table Showing Area under Each Category Of Fruits In Sirmaur - 2012-13

Sr. No	Fruit	Area (in Hect.)	Production (in tonnes)
1	Apple	3052	597
2	Citrus	1599	585
3	DryFruits	1485	947
4	OtherFruits	6870	11683
5	TotalFruits	13006	13812

Graph Showing Area Under Each Category Of Fruits In Sirmaur - 2012-13



1.6 ANIMAL HUSBANDRY

Livestock is the main wealth next to agriculture of the predominant population of the district. The entire terrain in the district is mountainous with high slopes and deep valleys. The development of agriculture, therefore, broadly depends upon the development of animal husbandry. Animal husbandry has several direct and indirect uses for a farmer and so it is an almost integral part of agriculture. To improve the fertility of the soil and to plough the fields, they need animals. Besides this milk and wool is also the need of the people. The people keep the following kind of animals:-

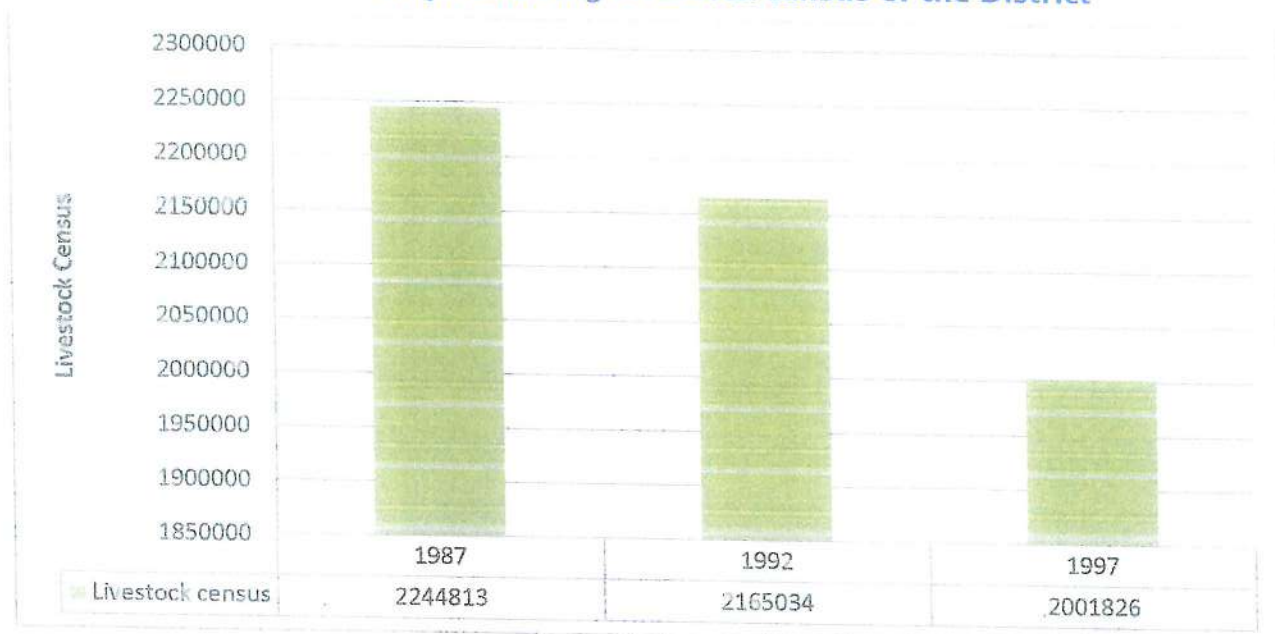
- | | |
|---------|--------------------|
| 1 Cow | 2 Buffalo |
| 3 Sheep | 4 Horse and Ponies |
| 5 Mules | 6 Donkey |
| 7 Camel | 8 Pigs |
| 9 Dogs | 10 Poultry |



Table Showing Livestock census of the District

Sr. No.	Year	Livestock census
1	1987	2244813
2	1992	2165034
3	1997	2001826

Graph Showing Livestock census of the District



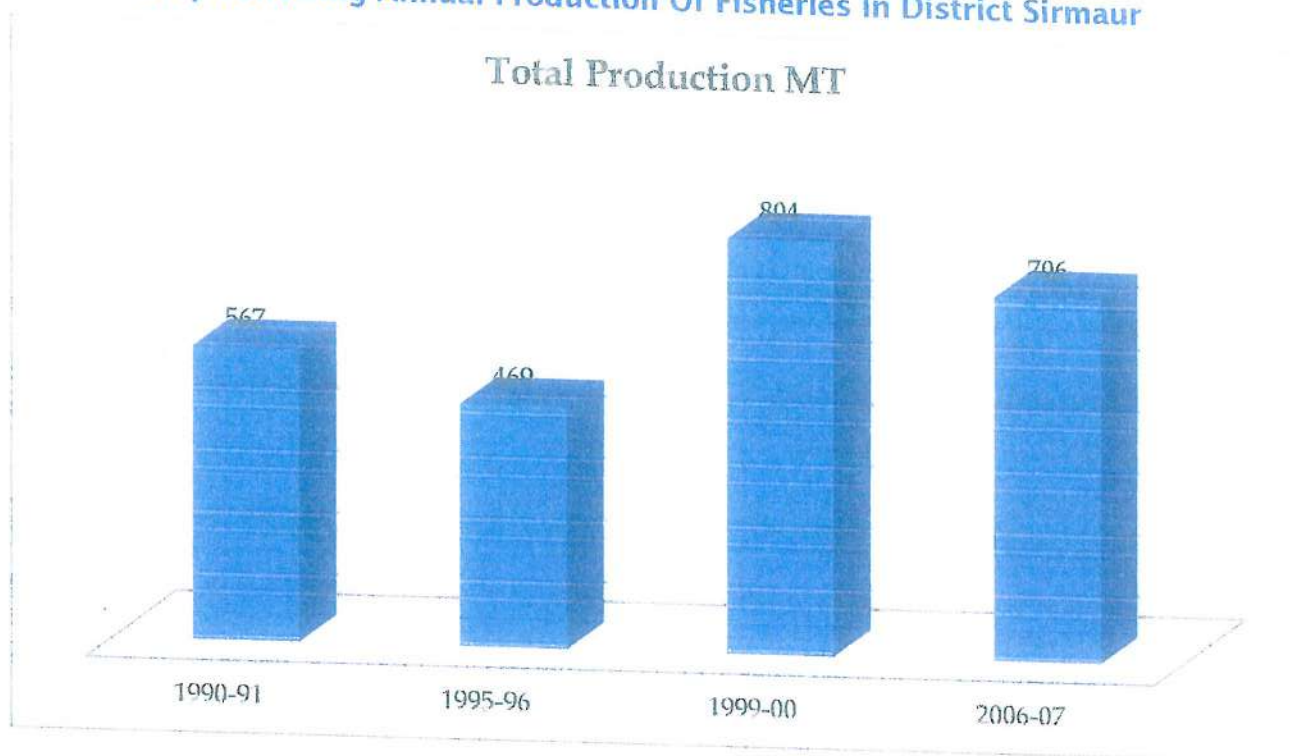
1.7 FISHERIES

Fisheries play an important role in the rural economy by augmenting food supply, generating employment and raising nutritional contents of food. There is abundance of fishes in rivers and perennial streams. The important species are Mahasheer, Rohu, singhara, Baranguli, Kali Macchi, Kala banas, Bhareli, Mrigal, and Bhunga. Fishery activities in district Sirmour include riverine fisheries and aquaculture. Department of Fisheries, Himachal Pradesh issues annual licence to the fishermen for fishing in riverine stretches using cast nets. Main rivers & their tributaries flowing through the district are Giri, Yamuna, Markanda, Roon Bata, Jalal, Nera & Tonnes. Presently 554 licensed fishermen are engaged in fishery profession catching approximately 706 metric tonnes of fish annually. Culture of fish in ponds is called aquaculture. Although pisciculture is a non- traditional activity, yet depletion of fish in rivers and increasing market demands have forced the Government as well as farmers to think on these lines. There is a vast scope of fishery development in the district. Paonta and to some extent Rajgarh areas are suitable for fish culture. There is also a good scope for running water fish culture in Shillai area.

Table Showing Annual Production Of Fisheries And Its Value Of Catch In District Sirmaur

Production of Fisheries in District Sirmaur					
Particulars	Units	1990-91	1995-96	1999-00	2006-07
Total Production	MT	567	469	804	706

Graph Showing Annual Production Of Fisheries In District Sirmaur



1.8 FLORA

The topography climate and nature of soil is mainly responsible for the growth of various types of trees and shrubs which are important for making the environment of the area most suitable for the survival of living beings. The tree and shrubs grow according to the heights. The Chil is considered the prevailing conifer up to about 1950 meter when it gives place to the Deodar and the blue pines. The forest range between shrubs sal and bamboo forest of the low hills to the fur and alpine forest of the higher elevation. Lowest point of the southern boundary of the district is less than 300 meter above mean sea level and highest range is at an elevation of 5500 meters in the north. The forests grown between these two extremes vary as the elevation. The following most prominent varieties of trees are found in the different elevation.

Mango	(Magni feraindica)
Tali	(Dalbergia sisoo))
Pipal	(Ficus religiosa)
Behul	(Grewia oppsitifolia)
Chil	(Pinus Rose burghi)
Simbal	(Bombere malabaricum)
Tuni	(Cedrcla toana)
Jamun	(Engenia jambolana)
Bamboo	



Mining Plan of Auctioned Quarry

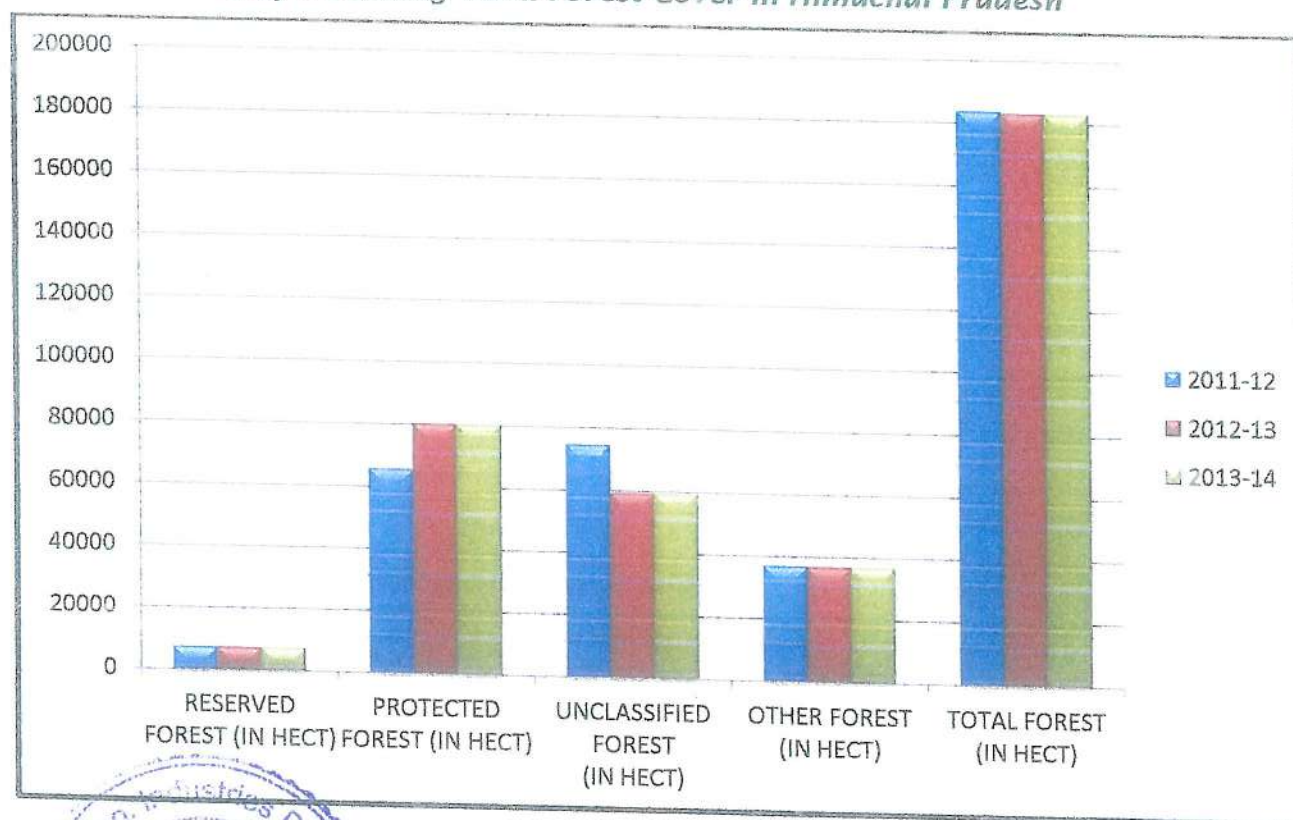
Brah	
Tos	
Broad leaf species	
Ber and other bushes	

Table Showing Total forest cover in H.P.

Table Showing Total Forest cover in Distt Kangra

YEAR	RESERVED FOREST (IN HECT)	PROTECTED FOREST (IN HECT)	UNCLASSIFIED FOREST (IN HECT)	OTHER FOREST (IN HECT)	TOTAL FOREST (IN HECT)
2011-12	7070	65435	74436	36838	183779
2012-13	7072	80093	59247	36557	182969
2013-14	7072	80093	59246	36551	182962

Graph Showing Total Forest Cover in Himachal Pradesh



Fauna

Common mammals found in the area are Fox, Hare, Jungle cat & common avifauna are crow, common pigeon, Hawk etc. Details of common mammals are given below in the table:

1	Black bear	(Selenarctos thebatanus)
2	Samber	(Cerveus unicolor)
3	Leopard	(Felis bengalensis)
4	Musk deer	(moschu mischifarus)
5	Hare	(Lepus nigricollis)
6	Fox	(Vulpes bengalensis)
7	Langoor	(Pseudoryx entellus)
8	Flying squirrel	(Hylopetes fimbriatus)
9	Bat	(Hippobos armiger)
10	Snow leopard	(Panthera unica)
11	Monkey	(Macaca mulatta)
12	Barking deer	(Muntiacus muntjak)
13	Pigeon	(Columba livia)
14	Mor	(Cuculix crissalatus)
15	Crow	(Corvus splendens)
16	Parrot	(Psittacula karneri)
17	House sparrow	(Passer domesticus)
18	Cranes	(Grus species)
19	Himalayan fly catcher	(Tersilochus paradisi)
20	Wood pecker	(Picoides Macer)



1.9 CLIMATE OF THE AREA

The region has four distinct seasons. The area experiences severe winter from December to March followed by severe summer season lasting from April to June. The area receives rain fall under the influence of south-west monsoon from July to mid-September followed by post-monsoon season lasting up to November.

The terrain in general has profound influence on the temperatures of a region. The temperature generally rises from the beginning of March till June, which is the hottest month of the year with mean minimum and maximum temperature of 25.6°C to 44°C respectively. With the onset of monsoons by the end of the June temperature begins to fall. The drop in day temperature is much more than the drop in night temperature. The night temperature falls rapidly after the withdrawal of monsoons by mid-September. The month of January is cooler month with the mean maximum and minimum temperature being 24°C and 1.7°C respectively. Under the influences of

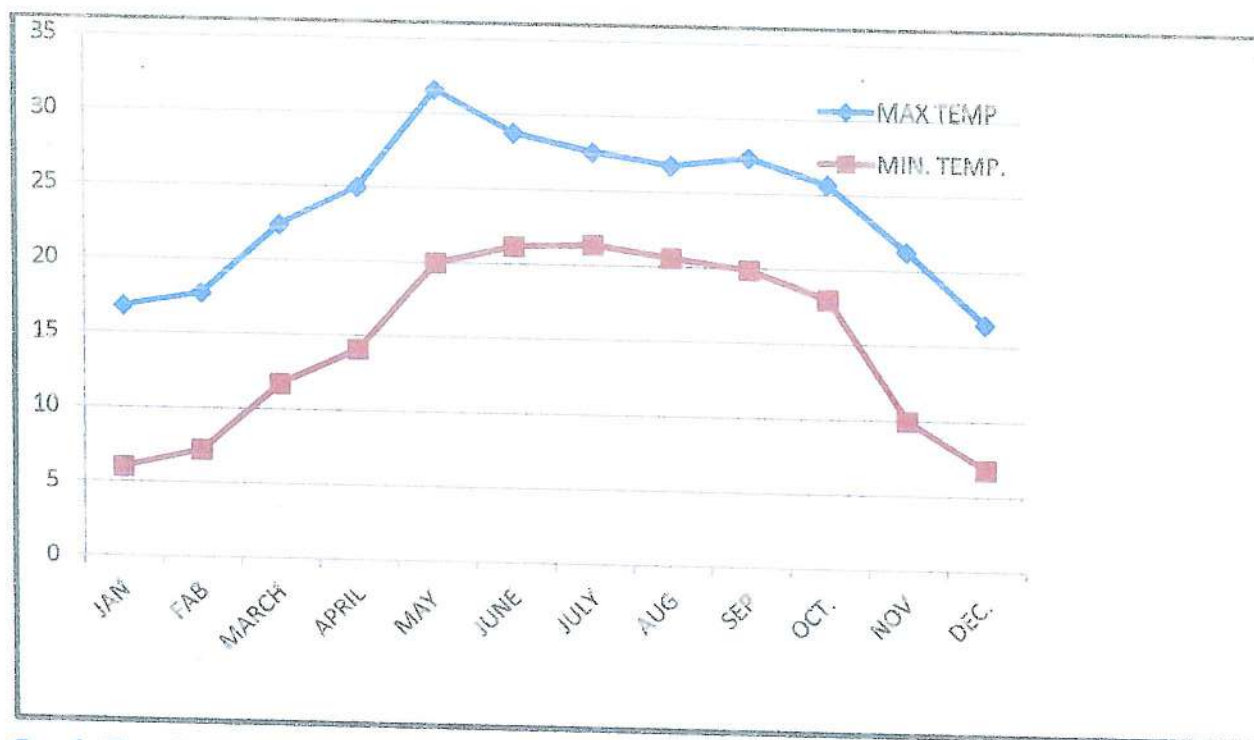
Mining Plan of Auctioned Quarry

western disturbance, the temperature falls appreciably during winters and it may go even below 0° C.

Humidity is generally low throughout the year. During summer season, humidity is lowest 36 %. During monsoon months, it goes as high as 80-90%. The highest levels of humidity are observed in the month of August. The average humidity during synoptic hours is 53% and 62% respectively.

CLIMATE OF THE AUCTIONED AREA DISTRICT SIRMAUR HIMACHAL PRADESH

CLIMATE	WINTER	SUMMER	RAINY SEASON
PERIOD	OCT.-MID MARCH	MID MARCH -JUNE	JULY-SEPTEMBER
Weather	Cool	Hot	Humid



Graph Showing Monthly Mean Maximum and Minimum Temperature data for the Year 2013

(2) ENVIRONMENT MANAGEMENT PLAN

2.1 Impact on Air

The magnitude of mining is not very high and restricted to the limited area as such there is hardly any impact other than dust emission to smaller extent which can be controlled by sprinkling water on the working face so that the dust be suppressed.

2.2 Impact on Water

There is no water source such as well or spring near the Auctioned Quarry. The Yamuna River is a perennial river. Therefore, it has no adverse impact on the flow of the

river; neither there is any intake of Kuhl within the Quarry or below the Auctioned Area which could be affected.

2.3 Impact on Noise Level

The area is away from the habitation and the noise shall be caused only by plying tractors/tippers/trucks to bring mineral to the stone crusher site, which shall be kept under control by proper lubrication and the working would only be done during day time to keep noise level below the permissible limit prescribed. No blasting operations are involved as the process is only to lift the material manually/mechanically with the help of tyre mounted excavator (if permitted) and to load in tractors/tippers/trucks hence, the noise level will not exceed the required level.

2.4 Waste Disposal Arrangement, if Any.

The waste which is silt shall generate and shall be used for the maintenance of the approach road of the crusher however; if required, it would be dumped in the adjoining private lands of the Contractor.

2.5 Socio Economic benefits

The mining shall provide employment to approx. 20 to 25 local people who are unskilled and are in need of additional source of income when they are free from agriculture engagements and shall be helpful in raising additional source of income.

2.6 Transport of Mineral

The Auctioned Area is in the river bed and there is very low to no traffic from the mining Auctioned however; for the transportation of the loaded vehicles to the nearest approach road, the vehicles may pass through private as well as Govt. Lands. The project proponent shall made necessary arrangements between land owners (Pvt. & Govt.) and will take care of other issues, if any, at his own for the mineral transportation to the nearest road.

The main connectivity of this is with the Paonta-Purwala-Bharli-Dakpathar road. This road is in good condition enough to bear the additional truck/ transport created by operation of the stone crusher unit. As per proposed production of 797676 (886307-88631= 797676) metric tonnes of material shall be transported in a year by trucks. At this rate approx. 2659 meteric tonnes of material shall be tranported at an average per day (Total working days 300/year) for which an average 132-133 trucks with 20 metric tonnes capacity are required.

PART-III

PROGRESSIVE MINE CLOSURE PLAN/ RECLAMATION PLAN

I. RECLAMATION PLAN

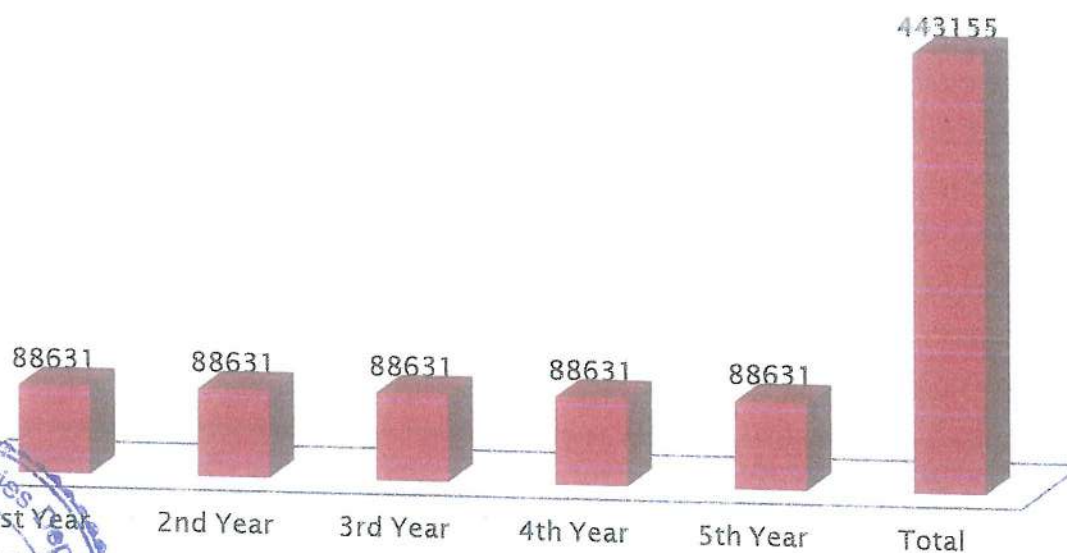
1.1 MINE WASTE DISPOSAL

The following type of waste will be generated during the course of mining in the area in the form of Silty sand and clay mixture. The quantity of waste generated (Fig-40) is as follows:

WASTAGE IN MT	
	SILT/CLAY
1st Year	88631
2nd Year	88631
3rd Year	88631
4th Year	88631
5th Year	88631
TOTAL	443135

Silt/Clay Generation in Five Years (In MT)

■ Silt



Most of the waste shall be used for the maintenance the approach roads and possibility shall also be explored to dump the wastage in the area outside the HFL in consultation with the local Panchayats.

Cost of Mine Waste Disposal

The material shall be brought to the dump site manually and it shall add little addition to the mining cost around Rs. 10/- per tonnes of waste. The total waste production in 5 years is 443135 tonnes. The total cost of dumping shall be around Rs 44,31,350/- in 5 years.

1.2 TOP SOIL ARRANGEMENT

There is no top soil available in the river bed.

1.3 PREVENTIVE RETAINING STRUCTURES

No check dams in the Auctioned Area are proposed as the adjoining land belongs to different private individuals. Moreover, the mining operations shall have no impact on the banks in any way.

1.4 PLANTATION WORK

The afforestation programme is the most important as to improve the environment and ecological balance of the area. Grasses and bushes which have fibrous roots are at the first instance grown which give the binding property to the soil. After growing grasses and bushes, other tree species in consultation with the experts will be raised, based on the characteristics of soil, topography and climatic conditions. The site for plantation shall be decided in consultation with the local Gram Panchayat. The year wise area proposed for plantation is as under:-

SR NO	YEAR	AREA IN SQ MTS.	NO OF PLANTS
1	1 st Year	2000	200
2	2 nd year	2000	200
3	3 rd year	2000	200
4	4 th Year	2000	200
5	5 th Year	2000	200
	Total	5000	1000

The total cost of plantation and its protection by engaging a part time Gardner shall cost 24,000 per year and in five years, the expenditure shall amount to Rs 1,20,000. The estimated survival rate proposed to be achieved shall be 80%.

2. STRATEGY FOR PROTECTION OF POINT OF PUBLIC UTILITY. ETC.: -

There is no point of public utility or of interest which need to be protected while under taking mining operations.

3. MAN POWER DEVELOPMENT: -

The mining activity in the area will generate direct and indirect employment opportunities to the local population. It will bring out up-liftment in their Economy and side by they can pursuit their original profession like agriculture etc. Around 20 to 25 unskilled people shall be employed to carry on the mining and associated activities and preference shall be given to employ local population.

4. USE OF MINERAL

The extracted stone shall be used for manufacturing of grit and possibility shall also be explored to use the waste material in road construction works.

5. ANY OTHER RELEVANT INFORMATION

There is tremendous growth in the infrastructure in the recent years in Government and private sector. The widening of the existing roads, construction of new roads, housing and other development work is the need of today. Glass, Stone, grit and sand is the basic requirement for construction work. The material thus produced has a vast market scope locally.



PART IV
CERTIFICATE
&
Declaration



CERTIFICATE

Certified that the provisions of the Himachal Pradesh Minor Minerals (Concession) and Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2015 Matliferous Mines Regulation 1961 and other guidelines issued from time to time in this regard have been complied for the preparation of Mining Plan of Auctioned Quarry/area for extraction /collection of Sand, Stone & Bajri situated in Khasra Nos. 936, 998 Min measuring 01-10-40 & 53-56-40 Hectares (Govt. Land) respectively in Mauza and Mohal Bhangani, Tehsil Paunta Sahib, District Sirmour (H.P). of Sh. Randeep Singh S/o Sh. Gurabaksh Singh, R/o Vill. Maruwala, P.O. Dulmana, Teshil & District Hanumangarh, Rajasthan.

While preparing the mining plan including progressive mine closure plan all statutory rules, regulation, orders made by competent authorities of the State or Central Government or orders passed by Courts have been taken into consideration.

The information provided and the data furnished in this Mining Plan is correct to the best of my knowledge.

Date

Place



Subhash Chand Kaura

(Ex. DDG, GSI)

House No. 1114, Sector 46 B,
Chandigarh, 160047.

Email: sckaura@gmail.com

RQP No. RQP/D.N.N./182/2011/A

Valid upto 24-01-2021

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Declaration

This is to declare that the Mining Plan including Progressive Mine Closure Plan of Auctioned Quarry/Area for extraction of Sand, Stone & Bajri situated in Khasra Nos. 936, 998 Min measuring 01-10-40 & 53-56-40 Hectares (Govt. Land) respectively in Mauza and Mohal Bhangani, Tehsil Paunta Sahib, District Sirmour (H.P) has been prepared with my consent and approval and that we/I shall abide by all commitment thereunder.

"The Mining Plan and 'Progressive Mine Closure Plan' complies all statutory rules, regulations, orders made by competent authorities of State or Central Government or orders passed by courts have been taken into consideration and wherever specific permission is required, shall be obtained.

We undertake to implement all the measures proposed in this Mining Plan and Progressive Mine Closure Plan' in a time bound manner.

We have deposited a sum of Rs. NA with the competent authority of the State Government in form of Fixed Deposit Receipt as financial assurance of the same. In case of default on my/our part, the approval of Mining Plan may be withdrawn and the aforesaid sum assured may be forfeited.

Date: -

Place:-



Randeep Singh
Sh. Randeep Singh
S/o Sh. Gurabaksh Singh, R/o Vill.
Maruwala, P.O. Dulmana, Teshil &
District Hanumangarh, Rajasthan