# PRE-FEASIBILITY REPORT

## 1.0 EXECUTIVE SUMMARY

Minor Minerals viz. Sand/Bajri/Boulder mining lease, measuring 0.470 ha was sanctioned the LoI by Director, GMU, Dehradun, Uttarakhand to Smt. Tript Kaur S/o W/o Late Shri Amarjeet Singh, R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, Uttarkhand on lease in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand). The lease was sanctioned; vide competent authority Letter of Intent No. 1497/VII-1/2019/02-ख/18 dated 1 February 2019 was issued for period of 6 months. **(Copy of LOI is attached as per Annexure-I).**

In accordance with the Schedule of EIA Notification, 2006 and its amendment from time to time, the proposed Project of Minor Mineral Mine is categorized under Category – "B2" 1 (a) (mining lease area >5 ha) - {Mining of Minerals} as the lease area is 0.470 ha. Therefore, it is being presented to State Environment Impact Assessment Authority (SEIAA), Dehradun, Uttarakhand; for the purpose of granting prior Environmental Clearance to start extraction of minor minerals. Form – 1, Pre-feasibility Report and Environment Management Plan are prepared by M/s Cognizance Research India Private Limited, E- 220, Sec. - 63, Noida-201301, UP.

## 1.1 SALIENT FEATURES OF THE PROJECT

| | |
|---|---|
| Project Name | Proposed Extraction / Collection of Minor Minerals i.e. Sand, Bajri & Boulders from Kosi River Bed (ML Area 0.470 Hectare) at village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand) |
| Location of Mine | Khasra No. 42/3 |
| Latitude & Longitude | 29°12'40.61"N to 29°12'44.14"N &<br>E 79°5'8.18"E to 79°5'13.00"E |
| Land Use | Private lease land in the river bed (Kosi River) |
| Minerals of Mine | Minor Minerals i.e. Sand, Bajri & Boulders |
| Life of Mine | Continuous, being replenished yearly |
| Proposed Production of Mine | Total mineable reserves – 14734.50 Tonnes (6697.50 Cubic meter) |
| Method of Mining | Open-cast manual mining |
| No of Working Days in a Year | 130 |
| Water Demand | Domestic Water: 0.81 KLD |
| | Dust Suppression: 3.60 KLD |
| | Plantation: 4.70KLD |
| | Total : 9.11 KLD |
| Sources of Water | Natural spring water from nearby village |
| Man Power | 27 |
| Nearest Railway Station | Bazpur approx., 8 Km in SE direction (Aerial) |
| Nearest Highway | NH 74 in Bazpur approx., 8 Km in SE direction (Aerial) |
| Nearest Air Port | Pantnagar approx 43 Km in SE direction (Aerial) |
| Seismic Zone | Zone-IV (As per 1893:2002) |

## 1.2 PROPOSED PLANINIG

Mining Method: Open Cast Manual Mining Method

Tentative Project Cost: 4.7Lac

Production: Sand, Bajri & Boulders – 14734.50 Tonnes (6697.50 Cubic meter)

## 2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

### 2.1 IDENTIFICATION OF PROJECT PROPONENT

For economic development of people of Uttarakhand and provide the employment to the local personnel, mining lease was permitted by Director, DGMU, Dehradun, Uttarakhand. The above defined lease was sanctioned to Smt. Tript Kaur S/o W/o Late Shri Amarjeet Singh, R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, Uttarkhand prior to grant Environmental Clearance as per EIA Notification, 2006.

### 2.2 BRIEF INFORMATION ABOUT THE PROJECT

The Project has been proposed to remove 14734.50 Tonnes (6697.50 Cubic meter) of Minor Minerals viz. Sand, Bajri & Boulders by open cast manual extraction method from river bed / Year. The lease area is a private lease land lies in the river bed.

During monsoon season, when the river reaches high stage, Kosi River has significant catchment area and its transports load material and sediments. The mined out area gets replenished annually during monsoon, thus it does not require any backfilling. Water requirement for the proposed project for domestic use, shall be met from natural spring water resource and the requirement for dust suppression shall be met from the surface water (river). Domestic water requirement would be fulfilled from nearby village. Total water requirement shall be 9.11 KLD approx.

### 2.3 NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY OR REGION

For meeting the huge demand of construction material like coarse and fine aggregate required in building construction and infrastructure works in Udham Singh Nagar region, the natural available materials in shoal deposits of Kosi River at river bed quarry site of village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand), has been found suitable from techno-economic consideration. The mining project shall provide direct employment to about 27 labourers. Additional jobs are created by way of transportation. In addition to this the production of minerals will benefit the State in the form of Royalty; the project will generate direct and indirect employment opportunities for the people in nearby villages. Also the mine management will initiate various socio-economic developments in nearby village from time to time to improve the socio- economic status in the area.

**2.4 DEMAND-SUPPLY GAP**

The partial demand of Sand/Bajri/Boulders in construction activities like building, infrastructure facilities, construction and expansion of existing SH/NH of the area can be accomplished from this mine.

**2.5 IMPORTS VS. INDIGENOUS PRODUCTION**

Import does not apply in the present case as Sand, Bajri & Boulders is indigenously available at number of mines under operation in Uttarakhand State.

**2.6 EXPORT POSSIBILITY**

Export possibility is neither conceivable nor there is any such demand.

**2.7 DOMESTIC/ EXPORT MARKETS**

The proposed mining activity is for obtaining Sand/Bajri and Boulders for indigenous consumption and also for sale to nearby Cities and Towns located in the State.

**2.8 EMPLOYMENT POTENTIAL**

About 27 local labours shall be engaged through Project Proponent for extraction of Sand, Bajri & Boulders and loading and handling of mineral in mining area, besides, watch and ward activity with proper maintenance.

| S.No. | Qualification | No. of persons |
|---|---|---|
| 1. | Manager/Foreman | 01 |
| 2 | Supervisor | 01 |
| 3 | Time Keeper | 01 |
| 4 | Office Assistant/Dispatch Supervisor | 01 |
| 5 | Un Skilled | 23 |
| **Total** | | **27** |

**3.0 PROJECT DESCRIPTION**

**3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY**

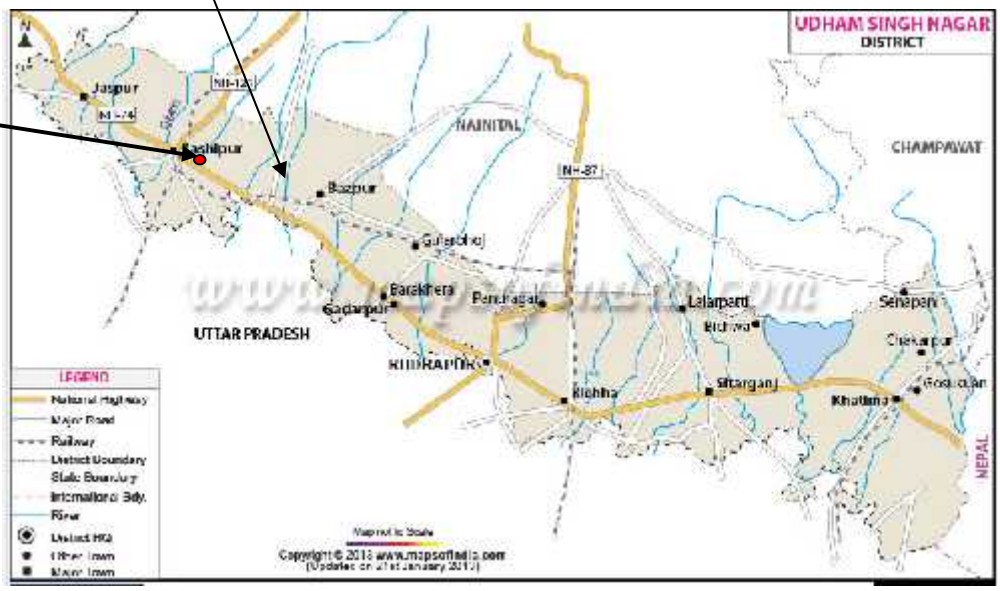
The project has been proposed for an annual production of 14734.5 Tonnes (6697.50 Cubic meter) of Sand, Bajri & Boulders by open cast manual extraction method from river bed. The lease area (0.470 Ha.) is a private waste land. The Project has no other interlinked Project.

**3.2 LOCATION**

The mine lease area falls in Kh. No. 42/3 in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamsinghnagar, (Uttarakhand). The lease area falls within survey of India Toposheet No. 53O/4 the Geographical location of mine is Latitude - 29°12'40.61"N to 29°12'44.14"N and Longitude- 79°5'8.18"E to 79°5'13.00"E. The site is easily approachable from NH 74.

**The vicinity map of the mine location is given below:**


**Location of the Site**




### 3.3 DETAILS OF ALTERNATE SITES

No Alternate site is required as the proposed mine lease area covered under Khasra No. 42/3 in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamsinghnagar, (Uttarakhand) in mineable area of 0.470 ha. Proposed mine lease has been allotted to project proponent by the Uttarakhand Government. In order to demarcate the mineable area, within the approved area,

the inspection of the lease area was carried-out by the members of Joint Inspection Committee and an area of 0.470 ha was recommended suitable for mining.

### 3.4 SIZE OR MAGNITUDE OF OPERATION

The mine lease area is 0.470 ha private waste land in the river Bed and the project is contemplated to win the minor mineral (Sand, Bajri & Boulder) by Manual Open Cast Method of mining without blasting.

### 3.5 GEOLOGY

#### 3.5.1 PHYSIOGRAPHY

This area lies on a valley and is flowing from NE to SW in a mountainous terrain of rough and rugged topography. The adjacent area is drained by Kosi River. The applied area forms a transverse ridge of Ratanpuri village. The area has sloppy undulating surface and at places gentle sloping also. The highest RL is about 236.5m on the NE side of the applied area, while the lowest RL recorded on the SW side of the applied area is about 235.5m.

#### 3.5.2 GEOLOGY

Geology plays an important role in shaping the groundwater scenario of an area. Piedmont alluvial deposits represent the geology of study area. Broadly, it can be divided into two formations viz. Bhabar and Tarai. These are characterized by distinct lithology, grain size distribution, variation of degree of sorting etc. Siwalik Range and the Lesser Himalayan Range have folded mountains having medium to high relief and rugged terrain. The Siwaliks are also designated as a Sub-Himalayan zone. A generalized geological succession, of the area, is as follows;

| Age | Morphotectonic | Divisions | Lithology |
|---|---|---|---|
| Recent to Quaternary | Piedmont | Bhabar | Boulder, sand and clay |
| | Alluvial plain | Tarai | Sand, clay and silt. |

Bhabar formation is essentially constituted of alluvial deposits lying on the sloping plains in the Himalayan foothills. It is primarily constituted of unconsolidated sediments like sand, gravel, boulder and clays. The Tarai formation is exposed immediately south of the Bhabar formation and consists of clays, sandy, fine to medium sand and occasional gravels. In this formation there is a dominance of clayey successions over sandy horizons. The granular zones mostly occur as lenses and have inter-tonguing relationships with clastic and non-clastic units. The northern limits of the zone is demarcated by the spring line, i.e. the contact between Bhabar and Tarai, whereas the southern limit of this zone is taken to be the region where auto flow conditions cease to exist in the tube wells. Tarai Formation is better sorted as compared to the Bhabar.

#### 3.5.3 MINEABLE RESERVES

As per mining plan, total estimated river bed material to be removed during the period of five year is 14734.50 Tonnes (6697.50 Cubic meter). Since the deposition of bed material and its transportation by the tractive force created during high floods is a natural and continual

phenomenon the mined out area annual gets deposited. However, deposit may vary as per rainfall and transportation of the material from upper reach.

### 3.5.4 PROPOSED RATE OF PRODUCTION WHEN MINE SHALL BE FULLY DEVELOPED AND EXPECTED LIFE OF THE MINE

Extraction of sand, bajri & boulder from the mine lease area shall be carried out as per the Uttarakhand Mineral Policy, 2011 & 2016. The rate of mineral excavation is calculated as 14734.50 Tonnes (6697.50 Cubic meter) per Annum. The mine will be worked on the day shift only. The average number of working days in the year would be 130 after grant of Environment Clearance. The proposed target production has been worked out on the basis of mineable area with maximum mining depth of 1.5 m. On the basis of the nature of RBM (River Bed Material) in the boulder reach near the river, the matrix comprises of the flood area load, mainly comprising of boulder, pebble, cobble, bajri and sand. The river originates from Garhwal Himalaya embodies a host of geomorphic features of glacial and fluvial origin and spring fed river with discharges throughout the year. During monsoon season, the high intensity and duration of rain fall result into high floods and sometime the flesh flood also. The banks of the river in the upper reaches are made-up of friable material, which is easily eroded. The river bed material and the suspended solids material mainly constitutes of sand, bajri and boulder, which gets settled into the beds with depressed elevation and into such pockets formed during the mining in pre-monsoon season. Viewing the competence of the river and the traction force generated during period of high discharges the bed load material, viz. boulder, shingle and sand gets aggraded annually and it is essential that the silviculture purposes and to save the nearby habitation, the removal of sand is essential, so that, the river course is not diverted. The annual target production is likely to be achieved during the year of normal rainfall in the catchment of Kosi river.

## 3.6 PROJECT DESCRIPTION WITH PROCESS DETAILS

### 3.6.1 PROPOSED METHOD OF MINING

The project does not involve any processes such as drilling, blasting and beneficiation. The mining process involves collection of material by simple hand tool such as shovel, pans and sieves. This is followed by sorting and manual picking, stacking and loading into trucks/tractor-trolley for transporting. The pits from where the material is picked are not deeper than 1.5m as allowed in mining area and shall follow the normal channel direction of the river. These get replenished during monsoon. The only waste is silt/clay which is recycled back to the pits.

Mining will be carried out only during the day time. The factors such as topography, bed gradient, soils, rainfall etc. will be taken into consideration for the same. The material is transported through the high velocity flow and is deposited in downstream portion where the bed slope is mild.

Applied area is a part of a river bed and mining will be done manually in open cast method in quite a systematic manner by forming benches of 1.5m high. However, there may be variation in the width which the lessee will keep on mending. About 14734.50 Tonnes

(66697.50 Cubic meter) mineral will be produced in per year. The proposed area is within river bed and mined out area will be replenished gradually during succeeding rainy season. The sandy soil to be scrapped manually with the help of pickaxe, spade & crowbar and will be stacked separately in dump yard located near the working pit.

Once the overburden, which appears thick, has been removed; the sand, *bajri* and boulder are excavated depending upon the lithological variation, no blasting may be used to make the sand containing material more amenable to excavation. Excavation is typically performed by manual means. Hand operated tools like spade; tasla etc will be used to collect the sand. The excavated material may be directly loaded into trucks, dumpers, tippers and tractors trolleys and send to the destination wherever it is required for construction and other purposes.

Transportation of sand, *bajri* and boulder from the mine is a process to deliver mined out material to the location where it is going to be collected. Mined out sand, *bajri* and boulder will manually be loaded into truck and transported to its destination where it will ultimately be used. Sufficient space will be left for loading of trucks. Excavation of river bed minerals will commence from the top surface of the area and commence towards down removing the minerals manually in 1.5m slices. Ultimate depth of a bench will be 1.5m. Mining will be restricted upto a maximum depth of 1.5m only. Per year about 14734.50 Tonnes (6697.50 Cubic meter) production of river sand, *bajri* and boulder have been proposed to meet the market requirement.

The mineral extraction will be done for a period of about 130 day in a year. During this period the areas of mining quarry will be free from submergence. During mining operation the river flow will be away to enable dry pit mining. In the lease area the river flow being reduced and sediment load get deposited. During flood season, the area gets replenished with sediments and source of erosion at this location is comparatively less.

The guidelines of the Ministry of Environment & Forests and Directorate of Geology and Mining will be followed; the most important is as under:

- Dry pit mining will be followed which means mining an all times will be above the flowing river water level. Mining activity will be immediately stopped when water comes in the mining pits.
- Sand, *bajri* and boulder will be collected in slices upto a depth of 1.5 m or river water levels whichever less than prescribed.
- Stream will not be diverted to form inactive channel.
- Mining at the concave side of the river channel will be avoided to prevent bank erosion.
- Plantation will be done on such area to isolate mining operation form the rest of the area.
- Area of mining lease will be demarcated prior to mining for sustainable development and Pillars will be erected on ground.
- No mining operations shall be carried out in proximity of any bridge and or embankment.

- Any other terms & condition mentioned in EC, GO and Letter of Intent will also be applicable during excavation of the mineral.

### 3.6.2 BLASTING

No blasting is proposed to be done.

## 3.7 RAW MATERIAL REQUIRED ALONG WITH ESTIMATED QUANTITY, LIKELY SOURCE, MATERIAL AREA OF FINAL PRODUCTS, MODE OF TRANSPORT OF RAW MATERIAL AND FINISHED PRODUCT

No raw material is required for extraction of minerals.

### 3.7.1 RESOURCE OPTIMIZATION/ RECYCLING AND REUSE

Not applicable in the present case as all size of minerals will be extracted and transported to the crusher site outside the mine lease area.

## 3.8 AVAILABILITY OF WATER ITS SOURCE, ENERGY / POWER REQUIREMENT & SOURCE

### 3.8.1 WATER REQUIREMENT

Water requirement for human consumption and dust suppression is 9.11 KLD, which shall be met from ground water source of the nearby village.

| Activity | Water requirement (KLD) |
|---|---|
| Domestic | 0.81 |
| Dust suppression | 3.60 |
| Plantation | 4.70 |
| **Total** | **9.11** |

### 3.8.2 POWER

No electrical power shall be required for operations.

## 3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL

### 3.9.1 SOLID WASTE GENERATION & ITS DISPOSAL

No solid waste other than negligible quantity of silt/silty clay, which gets deposited as crust material on the land profile, shall be scrapped and deposited into the mine pits.

### 3.9.2 LIQUID EFFLUENT

There will be no waste water generation from mining activities. Domestic sewage shall be disposed through eco-friendly mobile toilet.

## 4.0 SITE ANALYSIS

### 4.1 CONNECTIVITY

The mining site is approachable by metalled road followed by *kaccha* road, which connected with Bazpur road which is about 600m. Bazpur railway station is located at a distance of 8 Km.

### 4.2 LANDFORM, LAND USE AND LAND OWNERSHIP

#### 4.2.1 LANDFORM

The mine lease area is in the river bed and forms section of the river Kosi.

#### 4.2.2 LAND USE

The land use of the mine lease area is river bed classified as private waste land.

#### 4.2.3 LAND OWNERSHIP

The designated mine area is private land and belongs to project proponent.

### 4.3 TOPOGRAPHY

The mine lease area lies in Garhwal Himalaya. The elevation range of the mining site is approximately between 235.5 AMSL to 236.5 AMSL creating a level difference of 1 m. Geographically, the study region constitutes of two physioclimatic divisions: the hilly tract and the plain regions. The natural environment of the hilly region is greatly different from that of the remaining areas of the plains. The diversified topography, soil, climate and vegetation on the one hand and socio-cultural and economic on the other have formed these regions into two separate entities. The plains have two separate sub-regions which are, physiographically distinctive, i.e., Bhabar and Tarai.

The hilly physiographic unit comprises the northern hills of outer Himalaya, which is separated by Main Boundary Thrust (MBT) from east to west of the area. The region geologically comes under the Lesser Himalaya and Siwalik. Bhabar is immediately to the south of the hills and is a narrow belt which is covered with forest at places, but devoid of water. The southern boundary of the tract is demarcated by the junction points of the different rivulets, which debouch in the area from adjacent Siwalik Hills.

The foothill plain is composed of the recent deposits which mainly includes coarse deposits. On account of porous substratum this tract is superficially devoid of water. There is not even a single channel traceable on the surface except a few major streams/rivers and the depth of water table is generally found deep. A major proportion of the region falls within the drainage basis of these main rivers i.e. Gaula, Nandhaur, Bhakara,while the southern face of the Siwalik gives rise to numerous streams that flow southwards across the foothill zone of Bhabar.

Kosi, in a real sense, can be regarded as the principal river of the area. This river also carries a large volume of water during the rain as also the off-season periods. It is due to such factors that it is proposed to be deemed at Jamrani for Irrigation and other is purposed a few kilometres upstream of Ranibagh where this river enters the foothills. It has a wide valley near

Kathgodam, Shismahal, Haldwani, Bedipadav, Debrampur, Halduchaur, Lalkua, Imlighat & Shantipur where the river carries huge deposits of boulders and other river borne material, here onwards the river has a winding course.

### 4.4 EXISTING LAND USE PATTERN

The existing land use of mine lease area belongs to land use category "River bed" and shall continue to be so even after the current mining project is over.

### 4.4.1 POST MINING (CONCEPTUAL) LAND PATTERN OF ML AREA (HA.)

| S.No. | Sensitive Ecological Features | Name | Aerial Distance (in km.) from Mine Lease |
|---|---|---|---|
| 1 | National Park/Wildlife Sanctuary | Corbatt National Park | 21km Northern direction |
| 2 | Tiger Reserve/Elephant Reserve /Turtle Nesting Ground | Corbatt National Park | 21km Northern direction |
| 3 | Core Zone of Biosphere Reserve | - | - |
| 4 | Habitat for migratory birds | None | -- |
| 5 | Lakes/Reservoir/Dams | No | -- |
| 6 | Stream/Rivers | Mine is located in the River bed of Aglar River | Kosi River bed |
| 7 | Estuary/Sea | None | -- |
| 8 | Mangroves | None | -- |
| 9 | Mountains/Hills | Garhwal Himalaya | Lesser Himalya |
| 10 | Notified Archaeological sites | None | - |
| 11 | Industries/Thermal Power Plants | None | - |
| 12 | Defense Installation | Ranikhet | 58Km in NNE direction |
| 13 | Airports | Pantnagar | 43 Km in SE direction |
| 14 | Railway Lines | Bazpur | 8 Km in SE direction |
| 15 | National / State Highways | NH-74 | 8 Km in SE direction |
| 16 | Important worship place | Ratanpuri | 2.0 Km |

### 4.5 EXISTING INFRASTRUCTURE

The mine lease area is a fallow land which lies near the Kosi river basin and gets deposition of sand, bajri during the monsoon season carried along the river course with the flow of river during monsoon. There is no existing infrastructure, however during mining temporary rest shelters for workers will be provided.

### 4.6 SOIL CLASSIFICATION

The soils are natural, dynamic, heterogeneous, non-renewable resource, which support plant and animal life. The tract of Udham Singh Nagar district consists of outward succession of ridges viz; Lesser Himalaya and central crystalline of decreasing height. The soils have developed from rocks like granite, schist, gneiss, limestone, phyllites, shales, slate, sand stone etc. under cool and moist climate.

### 4.7 CLIMATIC DATA FROM SECONDARY SOURCES

#### 4.7.1 TEMPERATURE, RELATIVE HUMIDITY & WIND

The climate varies from Sub-tropical and sub-humid with three distinct seasons i.e. summer, monsoon (rainy season) and winter. The rainy season starts from the month of middle June to September end, and followed by the winter season, which starts from the end of October and goes up to February. The winter rains are generally experienced in late December or early January, which brings down the temperature and that's how December and January are the coldest months in the district. The summer season starts from March and it goes up to June. The hottest months of the year are May and June. The maximum temperature in the district goes up to 42ºC during the summers and the minimum temperature is between 1 and 4º C, further north of the district, the temperature comes down to 0.4ºC in winter season. Rainfall, spatially, is highly variable depending upon the altitude. The intensity of the rainfall increases from south to north and the amount of rainfall decreases in generally from west to east. About 90% of the rainfall received during the monsoon period, and the remaining 10% of the rainfall in non-monsoon period. The average annual rainfall is 1296.85 mm (Year; 2004).

#### 4.7.2 RAINFALL

Rainfall, spatially, is highly variable depending upon the altitude. The intensity of the rainfall increases from south to north and the amount of rainfall decreases in generally from west to east. About 90% of the rainfall received during the monsoon period, and the remaining 10% of the rainfall in non-monsoon period. The average annual rainfall is 1296.85 mm (Year; 2004).

#### 4.7.3 HUMIDITY

The humidity is high during the monsoon season and to a lesser extent in the cold months. In the summer months humidity is generally low and is between 27 and 65% and high during monsoon & winter season and varies from 45% to 84%.

#### 4.7.4 CLOUDINESS

In the winter season the sky is generally clear or lightly clouded except for brief spells of a day or two each time when in association with the passage of western disturbances particularly in the northern parts of the district sky become cloudy. Sky is clear or lightly clouded in the summer and post-monsoon seasons. Heavily clouded to overcast sky prevail in the monsoon season.

## 4.8 SOCIAL INFRASTRUCTURE

The social infrastructure like educational facilities (primary and higher secondary schools, degree college), drinking water supply, post and telegraph, public transportation and hospitals are by and large are available within 10km the study area.

## 5.0 PLANNING BRIEF

### 5.1 PLANNING CONCEPT

Open cast manual mining method will be adopted for Sand, Bajri & Boulders mining. Project will produce 14734.50 Tonnes (6697.50 Cubic meter)/Annum of Minor Mineral, which will be used for meeting the demand of construction material like coarse and fine aggregate required in building construction and infrastructure works of Uttarakhand.

### 5.2 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL & SOCIAL)

Adequate infrastructure facilities are available in the vicinity of mine lease area and due to the mining activities; no extra infrastructure over and above the existing infrastructure is required.

### 5.3 AMENITIES/FACILITIES

#### 5.3.1 MINES OFFICE

Proper site services such as First Aid, Rest Shelter and Drinking Water will be provided to the mine workers**.**

#### 5.3.2 REST SHELTER

Rest shelter along with first-aid station complying with all the provisions of Mines Rules shall be provided by project proponent outside lease area.

#### 5.3.3 WATER SUPPLY

Water will be supplied for Human Consumption & Dust Suppression.

#### 5.3.4 POWER SUPPLY

The mine will work in day time only, so no lighting arrangement will be required.

#### 5.3.5 TRANSPORT OF MEN AND MATERIAL

Employee will report to the duty on own means. The material from the mine will be transported by Tippers.

#### 5.3.6 COMMUNICATION

Mobile phones shall be used for communication.

#### 5.3.7 SECURITY ARRANGEMENTS

Appropriate security arrangement shall be made.

## 6.0 PROPOSED INFRASTRUCTURE

### 6.1 INDUSTRIAL AREA (PROCESSING AREA

Temporary arrangements like Site Office, rest Shelters & approach roads etc. shall be provided. No permanent infrastructure is proposed.

### 6.2 RESIDENTIAL AREA (NON PROCESSING AREA)

As the local person shall be employed, no residential building / housing are proposed.

### 6.3GREEN BELT

It is proposed to plant local trees and bushes along the river banks, nearby area, road side plantation in consultation with the local authority/ Govt. body, as the plantation is not feasible on the riverbed.

**A total area of 0.470 ha will be covered under plantation**

Area calculation for plantation

Area of mine lease has been considered along both the sides of river banks = 4700 sqm or 0.470Ha.

No. of Plants to be planted @2500 sapling/hectare = 1175 Plants

**Expenditure for Plantation in Year (Amount in Rs. lakhs)**

| S. No. | Proposed Plantation Activity | Annual Cost (Amount in Rs. lakhs) | | | Grand Total (Rs. Lakhs) |
|---|---|---|---|---|---|
| | | 6 Month in a Year | | | |
| | | Physical | Amount | Maintenance | |
| 1 | Plantation Activity in the area (Total 1175 trees for 6 months), (Cost of Sapling Rs.300/Sapling) | 1175 No's | Rs.3.53 Lakhs | Rs.0.47 Lakhs | 4.00 |

### 6.4 SOCIAL INFRASTRUCTURE

In-line with the Social Responsibility activities at any other operational sites, relevant developmental assistance shall be rendered depending on the local needs identified through studies.

- Road facility (existing roads will be maintained regularly)
- Employment opportunity
- Medical camps
- Social awareness camps,
- Donations to schools
- Secondary employment opportunities
- Formation of self-help groups for the women in nearby villages

The following budget is allocated for various CSR activities. 10% of project cost will be earmarked for CSR activities.

| S. No. | Description | Amount (INR) |
|---|---|---|
| 1 | Free distribution of School Bags & Scholarships for students | 10,000 |
| 2 | Education & Training Programs | 8,000 |
| 3 | Repairing of School Buildings | 10,000 |
| 4 | Health Safety & Medical Facilities | 10,000 |
| 5 | Water supply | 9,000 |
| **Total** | | **47, 000** |

**6.5 CONNECTIVITY**

Site is well connected to existing road and rail network. There is no proposal to develop new road and rail links.

**6.6 DRINKING WATER MANAGMENT**

Water requirement for drinking and operations will be 9.11 KLD, which will be met from near Village and river water as per availability & suitability for the purpose.

**6.7 SEWERAGE SYSTEM**

No sewerage system is required as there is no domestic waste water will be disposed through eco-friendly Mobile Toilet.

**6.8 INDUSTRIAL WAST MANAGMENT**

Not applicable, as the mining activity will not be generating any overburden or waste water.

**6.9 SOLID WAST MANAGMENT**

No solid waste other than negligible quantity of silt/silty clay, which gets deposited as crust material on the bed profile, shall be scrapped and carefully stored for depositing into the mine pits in the river bed.

**7.0 POWER REQUIREMENT & SUPPLY/SOURCE**

No electrical power requirement for mining activities.

**8.0 REHABILITATION AND RESETTLEMENT (R&R) PLAN**

The existing mine lease area is designated as private land and has no human settlements and hence, no R & R is envisaged.

## 9.0 PROJECT SCHEDULE & COST ESTIMATES

### 9.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION

No construction activity is involved under the project activity. The mining shall be started after getting Environmental Clearance and shall be continued for a period of five year only as stated in the Letter of Intent.

### 9.2 ESTIMATED PROJECT COAST ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

The capital cost of proposed project is estimated as Rs. 4.7 Lac.

## 10.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

### 10.1 FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFIT TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA

Achieving such a huge infrastructure requires basic building materials and sand, bajri and boulders is one of primary building material required for the purpose. The mining activities are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The mining operation supports demand for sand, bajri and boulder in the area. The proposed project is expected to provide employment to local people in different activities such as Mining, Sizing / Sorting, transportation activities. The project activity will not have any major impact on the environment.

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