

## 1.0 EXECUTIVE SUMMARY

The letter of intent an area of 220.14 Ha, for mineral Soapstone was granted to Smt. Nandita Tiwari on lease land lies in Village-Kanda Sunargaon, Tehsil- Kanda & Dist- Bageshwar, Uttarakhand vide letter no 2186 (1)/VII/2004-248 Kha/2002 dated 11-10-2004 for a period of 20 years. The proposed soapstone mining project category as "A" as per Office Memorandum issued by MoEFCC, New Delhi, Dated 14th September, 2006.

Mining Plan & PMCP under Rule 22 (4) of MCR 1960 & 23 (B) of MCDR, 1988 was approved vide letter No. - 614(2) MP-B-260/06-DDN dated 13/09/2012.

## 1.1 SALIENT FEATURES OF THE PROJECT

<b>Sr. No.</b>	<b>Particular</b>	<b>Details</b>
<b>A.</b>	Nature of the Project	Soapstone Mining Project.
<b>B.</b>	Size of the Project	
<b>1.</b>	ML Area	220.14 Hectare (Private Agricultural Land).
<b>2.</b>	Proposed Production Capacity	Total Recoverable Quantity of Soapstone: 52332 Tonnes/ Annum (Maximum) (As per approved Mining Scheme)
<b>3.</b>	Lease Period of Mine	Lease was granted for a period of 20 Years.
<b>C.</b>	Method of Mining	
<b>1.</b>	Method	Open-Cast Manual Mining
<b>2.</b>	Blasting / Drilling	Not proposed
<b>D.</b>	Project Location	
<b>1.</b>	Village	Kanda Sunargaon
<b>2.</b>	Tehsil	Kanda
<b>3.</b>	District	Bageshwar
<b>4.</b>	State	Uttarakhand
<b>5.</b>	Topo Sheet No.	53 O/13
<b>6.</b>	Lease Area Coordinates	Latitude : 29 <sup>0</sup> 49'24.10" N to 29 <sup>0</sup> 49'41.80" N Longitude: 79 <sup>0</sup> 53'23.00"E to 79 <sup>0</sup> 53'53.27"E
<b>E.</b>	Cost Details	
<b>1.</b>	Project Cost	Rs. 17 Lakhs
<b>F.</b>	Water Demand	
<b>1.</b>	Requirement	4 KLD
<b>2.</b>	Source of water	Pipe line of Uttaranchal Jal Sansthan
<b>G.</b>	Man Power Requirement	124

<b>H.</b>	Environmental Setting	
<b>1.</b>	Nearest Village	Kanda Sunargaon
<b>2.</b>	Nearest Town	Bageshwar, 11.84 Km.
<b>3.</b>	Nearest National / State Highway	Bans Patan - Kanda Road, 0.24 Km
<b>4.</b>	Nearest Railway Station	Kathgodam, 76.55 Km
<b>5.</b>	Nearest Airport	Pantnagar, 96.70 Km
<b>6.</b>	Ecological Sensitive Areas (National Park, Wild Life Sanctuaries, Biosphere Reserve etc.) within 10 km radius	None
<b>7.</b>	Reserved / Protected Forest within 10 km radius	Gurana Reserve Forest, 0.5 km
<b>8.</b>	Water bodies within 10 km radius of the mine site.	Perianal spring, 5 Km
<b>9.</b>	Archaeological Important Place	None
<b>10.</b>	Seismic Zone	V

**Source:** Site visit and Approve Scheme of Mining

## **2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION**

### **2.1 IDENTIFICATION OF PROJECT PROPONENT**

The proposed lease of Soapstone Mine is 220.14 Ha areas and is situated near Village-Kanda Sunargaon, Tehsil — Kanda, District - Bageshwar in the Uttarakhand State.

The Lease has been granted in favour of Mrs. Nandita Tiwari .

### **2.2 MINING LEASE STATUS**

The Mining Lease is non-forest land. The lease area comprises of uneven agricultural land only. Lease has obtained no objection certificate from the individual land owners for the exploitation of mineral Soapstone. Scheme of mining & PMCP under Rule 22 (4) of MCR 1960 & 23 (B) of MCDR, 1988 was approved vide letter No. - 614(2) MP-B-260/06-DDN dated 13-09-2012.

About 52332 Tonnes (maximum) of recoverable quantities of Soapstone will be produced by the end of fifth year and mine get fully developed at that time. Life of the mine with the proposed production will be about 20 years. After five years, the remaining area will be explored with mining pits & exploratory pits, therefore mineable reserve will be enhanced, & accordingly the life of mine will be increased.

### **2.3 BRIEF INFORMATION ABOUT THE PROJECT**

The project has been proposed for the mining of Soapstone from the Agricultural Land by open cast manual Mining method. The mineral are exploited with the help of spade, crowbar, chisel etc. The interburden of low grade magnesite boulders intermixed with in soapstone body will be removed with the help of chisel, crowbar, Hammer etc.

The Soapstone mineral in Kumaon Himalaya is an alteration a products magnesium bearing minerals, Soapstone occurs as pocket type massive and sometimes confined to the upper part of the magnesium bearing zones.

The area is typically Himalayan undulating Hilly terrain. The area has mild slope towards south & west directions & vegetated with scanty shrubs, bushes & plants. The entire lease hold comprises of agriculture fields. A thin layer of brownish colour of soil having fine grain size exists in the whole area. The average thickness of soil is 0.75 m. However soil will be removed and carefully stored for use in plantation purpose by backfilling the pits & to restore the land for agriculture purpose.

The Soapstone will be exploited manually. Since the deposit is lenticular, the overburden removal & production may remove simultaneously. The mining operation line screening & loading will be done by manual method. The mineral is not meant for captive use. The extracted / collected Soapstone will be sold to different industrial use.

Talc pockets intermixed with magnesite & dolomite boulders are exposed in the area. Talc is generally off-white to greyish white in colour. Major portion of the talc is exposed in the agricultural field. The magnesite is yellowish to pale brown in colour. The whiteness of Soapstone varies from 86% to 92%.

In the lease hold area it has been revealed that Soapstone body follows the topography of the area having gentler slopes. Soapstone mineralization is confined to carbonate horizons only. The deposits off Soap Stone, which are derived from ultra-mafic rocks, are more abundant in dolomites. Soapstone is an alteration product of magnesium rich minerals & good grade of Soapstone is found in association of dolomite & magnesite.

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

Soapstone finds its use in many of the industries that include detergent & Paper industries etc. The natural available material in the quarry site has been found suitable from techno economic consideration. The mining project shall provide direct employment to about 124 persons. Additional jobs are created by way of transportation.

No subgrade mineral is produced from the mine. The soapstone is being dressed manually and transport to Haldwani. The final material will be utilized paper & cosmetic industries.

### **2.5 DEMAND-SUPPLY GAP**

Considering the increasing development of industries in the State of Uttarakhand as well as other nearby States, there is huge demand of soapstone as a raw material in various types of

industries including cosmetic, detergent, & paper industries. Therefore, partial demand of material used in such industries can be accomplished from this mine.

## **2.6 IMPORTS VS. INDIGENOUS PRODUCTION**

Import does not apply in the present case as Soapstone is indigenously available at a number of mines under operation in Uttarakhand & other States of India.

## **2.7 EXPORT POSSIBILITY**

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

## **2.8 DOMESTIC/ EXPORT MARKETS**

The proposed mining activity is for obtaining soapstone for indigenous consumption and also for sale to nearby industries like Refractory, Cosmetic, detergent, Paper and Talc Powder.

## **2.9 EMPLOYMENT POTENTIAL**

About 124 people shall be engage thorough project proponent for Extraction / Collection shorting, handling and loading of Soapstone in mining area, besides, watch and ward and plantation activity with proper maintenance.

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

The project has been proposed for the production of 52332 T/Annum (maximum) of Soapstone by open cast manual method without drilling/blasting for extraction method in agricultural land. The lease area (220.14 Ha) is Agriculture land. The project has no other interlinked project.

## **3.2 LOCATION**

The mine lease area falls in Village — Kanda Sunargaon, Tehsil - Kanda , District - Bageshwar, Uttarakhand. The lease area falls within the survey of India Toposheet No. 53 O/13.

## **3.3 DETAILS OF ALTERNATE SITES**

The mine lease area covered under 220.14 Ha, Village — Kanda Sunargaon, Tehsil- Kanda, District - Bageshwar, Uttarakhand is a mine lease allotted to project proponent. Soapstone bearing with grade magnetite was seen in the pit. The Soapstone occurring in this area is weakly foliated, fine grained, off white in colour with its characteristics soapy feel. There is a sufficient reserve of Soapstone within the lease area as per the mine plan, therefore no alternate site was considered.

## **3.4 SIZE OR MAGNITUDE OF OPERATION**

The mine lease area is 220.14 Ha private Agricultural land on hill terrain and the project is contemplated to extracted the mineral (Soap Stone) by manual open cast method of mining without blasting

### 3.5 GEOLOGY

#### 3.5.1 TOPOGRAPHY

The general slope of the area is towards south east and west .The Topography of the area is rough and rugged. The area by and large has a gentle slope. The area is surrounded by thinly populated villages on all the sides, which are located mostly on the gentle slope of the hills. Terraced paddy farming is carried out by the villagers on the slopes. The highest altitude was recorded within the area is RL 1692.50 m towards the North West flank of the area while the lowest altitude recorded within the area is 1480mRL towards the south west flank of the area.

#### 3.5.2 REGIONAL GEOLOGY

The area forms the part of Calc zone of Tejam and Pithoragarh. According to Prof. K.S. Valdiya (Geology of Lesser Himalaya, 1980) and D. K. Banerjee et. al. (Him. Geol., Vol. 5, 1975) the lithostratigraphic sequence of this area is as follow:

Group/ Formation Lithology

Berinag Formation Phyllite	Quartzite, Meta quartzite, Conglomerate, Phyllite
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-----Unconformity -----

Gangolihat dolomite structures. Magnesite with talcose phyllite and dolomite intercalations	Dolomite, dolomitic soapstone with algal structures.
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-----Unconformity -----

Sor Slate	Slate, Phyllite, subgrawake
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In this region, rocks of Pithoragarh Formation occur. The development of algal stromatolite in carbonates occurrence or magnesite is a common associate of the carbonates. The Calc- Zone rock units are well known for their structural dispositions (windows, half windows in Lesser Kumaon Himalaya) for stromatolites and minerals (magnesite, dolomite, soapstone and minor metallic occurrences).

#### 3.5.3 LOCAL GEOLOGY

The applied area and its surroundings are constituted in part, by Gangolihat Dolomite sequence. The local lithological sequence is as follows:

- Upper Carbonates
- Middle Talcose Phyllite
- Lower Carbonates

In the applied area and its surrounding consists of Gangolihat dolomite. The soapstone mineral in Kumaon Himalaya is an alternation products of Soapstone occurs as elongated lenses along bedding planes and sometimes confined to the upper part of the calciferous zones. The mineral body occurs in irregular shape & size. The soapstone trending 352 deg. To 358 deg. N, amount of dip varies 36 deg. To 40 deg. And dip direction varies 82 deg. N to 88 deg. N. The soapstone occurring in these area is weakly foliated, fairly compact, fine grained white to off white in colour with its characteristic soapy feel.

### 3.5.4 MINERAL RESERVES DURING THE LEASE PERIOD

### 3.5.5 GEOLOGICAL RESERVES OF SOAPSTONE IN TONNES

In this area that the total mineral occurs along the slope in entire 220.14 Ha area and upto depth of 15 m and accordingly total mineral reserves are as given below:

Geological reserves in the entire ML area 5268417 MT.

### 3.5.6 MINEABLE RESERVES OF SOAPSTONE

<b>Proved reserves</b>	<b>2126329 MT</b>
Probable reserves	898292 MT
Possible reserves	4370125 MT
Total	5268417 MT

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

In this area the exploration mining and waste dumping has to be simultaneously done and therefore exploitation of the mineral during life of the mine will be much more as estimated above taking into consideration for occurrence of mineral up to 15 m depth. However for all purposes exploitation of mineral during life of the mine can be considered safely as given below and due to exploration and future planning mineral reserves will definitely increase and production schedule as estimated below will change. However, the life of mine will be more than 20 years based on proposed rate of production i.e. 13736 MT/Annum (Maximum).

## 3.6 PROJECT DESCRIPTION WITH PROCESS DETAILS

### 3.6.1 PROPOSED METHOD OF MINING

Mining will be carried out manually. The bench height is being kept 1.5 m, width of the benches is 3 m and slope of faces has been kept 70°. The mining shall be carried out from top to bottom through the formation of benches. Mining shall be carried out in four pits viz pit I, pit II, pit III, & pit IV. In pit I an area 0.495 ha. shall be occupied by local coordinates N 1980 to N 2090 & E 1965 to E 2060. 290 m<sup>2</sup> & 1125 m<sup>2</sup> area shall be occupied by top soil stack & interburden dump & it shall be in – between the local coordinates N 1980 to N 2095 & E 2050 to E 2070. In pit II, an area 0.77 ha area shall be in between the local coordinates N 1890 to N 2012 & E 1965 to E2060. 625 m<sup>2</sup> & 1680 m<sup>2</sup> area shall be occupied by soil stack & interburden & it shall be in – between the local coordinates N 1950 to N 1980 & E 2033 to E 2050. In pit III, 0.60 ha shall be in – between the local coordinates N 1860 to N 1980 & E 1990 to E 2090. 750 m<sup>2</sup> & 1080 m<sup>2</sup> area shall be covered by soil stack & interburden during first year & it shall be in – between the local coordinates N 1930 to N 1950 & E 2050 to E 2075 & N 1795 to N 1840 & E 2050 to E 2085 & during second year, 360 m<sup>2</sup> & 1600 m<sup>2</sup> area shall be occupied by soil stack & interburden the local coordinates N 1930 to N 1980 & E 2050 to E 2075. Pit IV will cover an

area of 1.30 ha & it shall be in-between the local coordinates N 1260 to N 1390 & E 1915 to E 2025. About 215460 cum space shall be available for backfilling during next five years. The retaining wall having width and height 0.75 m respectively will be erected all along the side and slope of the soil stacks & interburden dumps.

### **3.6.2 LOADING**

After excavation, sorting of Soapstone will be done manually. The sorted out mineral will be filled into bags & transported to road side by mules or manually for loading into trucks. The top soil & inter burden shall be kept separately & utilized for used for back filling & reclamation of the mined out area.

### **3.6.3 STACKING OF SUB GRADE MINERALS**

No sub-grade minerals will be generated during the mining / sorting of Soapstone.

### **3.6.4 CONCEPTUAL MINING PLAN**

The conceptual mining plan has been formulated for anticipated life of the mine. The main feature of this plan is as given below:

### **3.6.5 MINERAL EXPLORATION**

In order to demarcate the mineable area, within the approved area in the past, mineral prospection of the lease area was carried-out by the help of trial pits.

The trial pits work reveals that (i) the mineralization extends over the entire ML area (ii) though all the exploratory pits showing the presence of soapstone have been backfilled & reclaimed but on the basis of exploratory details and mineralization based on existing pit (iii) for the purpose of Mining during the life of the mine based on the exploration done in this belt is safety considered to occur upto a depth 15 m for all the purposes.

### **3.6.6 ULTIMATE PIT LIMIT**

The ultimate pit limit has been fixed along 7.5 m wide strip along lease boundary & 50 m barrier from the habitation & PWD road. The depth of pit by the end of lease period will be 15 m.

### **3.6.7 DISPOSAL OF WASTE ROCK AND BACKFILLING**

Mining is proposed in four pits and separate areas are selected for stacking of waste in external dump and stacking of top soil adjacent to the mining pits. Since these external dumps will be for temporary period and as soon as space in the mining pits will be available and mineral will be excavated waste will be backfilled and top soil will be spread over backfilled area.

These external dumps of waste dump and top soil will also be subsequently vacated and backfilling will be done in the space created in the mining pits. However, since during five year period due to manual mining it will not be possible to vacate the dump.

At all the times it is necessary that top soil will not be allowed to mix with waste rock. Separate stacking will be done, it will also be done separately so that precious top soil is not properly conserved and utilized at all the stages of stacking and backfilling.

Since the land chosen for disposal of waste is mineralized land and also cultivated land therefore, the land will be ultimately vacated and utilized for mineral excavation and also for cultivation.

The proposed quantities of soil & interburden to be generated from all the four pits during last five years are as below:

<b>Year</b>	<b>Soil (Tonnes)</b>	<b>Interburden (Tonnes)</b>
First	4673	17454
Second	1425	21832
Third	1522	11097
Forth	621	26939
Fifth	2309	32420
<b>Total</b>	<b>10550</b>	<b>109742</b>

Source: Approved mine plan.

## **MINING AREA**

The area to be occupied due to mining by the end of 5th year is about 3.165 ha. By the end of the fourth year 1.30 ha will be backfilled and reclaimed for agriculture.

### **3.6.8 BLASTING**

Soapstone is a soft material, its hardness has been considered as 1 on mohs hardness scale which can be mined easily by manual working therefore, and there is no need of drilling & blasting.

### **3.7 RESOURCE OPTIMIZATION/ RECYCLING AND REUSE**

Not applicable in the present case as all size of minerals will be extracted and transported to the Road side 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, plantation and dust suppression is 4 KLD, which shall be met from the Pipeline of Uttaranchal Jal Sansthan. The water will be stored & transported in Canes / Drums / water tanks.

### **3.8.2 POWER**

No electrical power shall be required for mining operations & allied activities.

### **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**

The site for mining is having a soil cover of 0.75 m thickness (average). Dumping material during the mine will consist of soil and waste (over burden & inter burden). Soil & waste stacked separately. The waste dump & top soil stacked near the mining pit will be temporary in nature. The excavated pits would be restoring by the back filling. Mules will be utilized for transporting of Soapstone; therefore the generated dung will be collected separately & used for manuring in Plantation / agricultural purpose.

#### **3.9.2 LIQUID EFFLUENT**

There will be little waste water generation from mining activities. Domestic effluent will be disposed through eco-friendly Mobile Toilet.

### **4.0 SITE ANALYSIS**

#### **4.1 CONNECTIVITY**

The proposed site falls at Village — Kanda- Sunargaon, Tehsil-Kanda, District — Bageshwar, Uttarakhand. The lease area is also connected by Bageshwar- Kanda Road. Soapstone from mine site shall be transported through mules and stacked at road site. Soapstone will be transported to Haldwani via Bageshwar.

#### **4.2 LANDFORM, LAND USE AND LAND OWNERSHIP**

##### **4.2.1 LANDFORM**

The mine lease area is in uneven agricultural fields.

##### **4.2.2 LAND USE**

The land use of the mine lease area is classified as uneven agricultural land. The impact on land form or physiography will be landuse on the hilly terrain will undergo radical changes due to the open cast mining.

#### **4.2.3 LAND OWNERSHIP**

The designated mine area is private agricultural land & is free from forest land. Project proponent has obtained No Objection Certificate from the individual land owners for the exploration of Soapstone in their respective land.

#### **4.3 EXISTING LAND USE PATTERN**

The existing land use of mine lease area belongs to landuse category "Uneven Agricultural Land."

#### **4.4 EXISTING INFRASTRUCTURE**

The mine lease area is a fallow land which lies in the private agricultural fields and gets deposition of Soapstone mineral there is no existing infrastructure, however during mining temporary rest shelters for workers will be provided.

#### **4.5 SOIL CLASSIFICATION**

The soil types are controlled by the topography and rock types. The soils, on the fluvial valleys, moderately deep, well drained fine loamy soils with loamy surface with slight erosion. The soils occurring on the cliffs side are very shallow, excessively drained, whereas the soils on the Summits and Ridges moderately shallow, excessively drained, coarse loamy soils with loamy surface and moderate association. Soils occurring in the Lesser Himalayan range are moderately shallow, somewhat excessively drained, thermic, loamy skeletal soils on moderately steep slopes with loamy surface, moderate erosion. The Lesser Himalayan range is mainly composed of highly compressed and altered rocks like granite, phyllites, quartzite etc. and a major part of it is under forest. Intermittent sparse patchy terraced cultivation is also practiced on fairly steep hill slopes whereas dry and wet cultivation are prevalent on the uplands and low-lying valleys respectively. The broader valley slopes dominantly deep, well drained, fine-loamy, moderately acidic and slightly stony.

#### **4.6 CLIMATIC DATA FROM SECONDARY SOURCES**

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 region. 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 33<sup>0</sup>C during the summers and the minimum temperature is between 1 and 4<sup>0</sup>C, further north of the district, the temperature comes down to 0.4<sup>0</sup>C 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 rainfall in the area is recorded 979 mm per year.

#### **4.7 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 in the Village Kanda.

#### **5.0 PLANNING BRIEF**

##### **5.1 PLANNING CONCEPT**

Open cast manual mining method will be adopted for Soapstone mining. Project will produce 52332 T/Annum (maximum) Soapstone, which will be used for meeting the demand of various industries as important raw material.

##### **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**

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

As per Mine Rules & Regulations following statutory site services have been made available:

###### **5.3.1 MINES OFFICE**

The facilities include Manager's Office, including Time Office, First aid facility, Mine Planning & Central Stores, etc.

###### **5.3.2 REST SHELTER**

Rest shelter shall be provided by project proponent outside lease area.

###### **5.3.3 WATER SUPPLY**

A water storage tank with adequate capacity provided to cater to the water requirement for mined workers. Water will be supplied by pipe line of Uttaranchal Jal Sansthan.

###### **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 trucks.

### 5.3.6 COMMUNICATION

Mobile phones shall be used for communication.

### 5.3.7 SECURITY ARRANGEMENTS

Appropriate security arrangement shall be made.

### 5.3.8 VOCATIONAL TRAINING

The Proponent will provide vocational training / awareness programme at the mines to improve the skills of the workers.

## 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.

### 6.3 AFFORESTATION

During first five years plantation shall be undertaken over benap land and it is outside the mine lease area. Plantation at the block of five year period up to the end of lease period is as below:

Years	Area (ha)	No. of Saplings
I	0.30	300
II	0.30	300
III	0.30	300
IV	0.30	300
V	0.30	300
<b>Total</b>	<b>1.5</b>	<b>1500</b>

Local native species like Peach (Khubani), Pears (Nashpati), Apricot (Aaru), Plumk, Mehal, Kaphal, Chilmora etc. shall be planted.

### 6.4 SOCIAL INFRASTRUCTURE

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

### 6.5 DRINKING WATER MANAGEMENT

Water requirement for drinking and operations will be 4 KLD, which will be supplied by pipe line of Uttaranchal Jal Sansthan.

## **6.6 SEWERAGE SYSTEM**

Effluent is not generated in mining activities Hence treatment is not required. Domestic sewage will be disposed through eco-friendly Mobile Toilet.

## **6.7 INDUSTRIAL WASTE MANAGEMENT**

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

## **6.8 SOLID WASTE MANAGEMENT**

Waste generated during mining operation will be backfilled in the mined out area. There will be no external dumps at the end of life of mine. The overburden soil will be properly stacked and will be consumed in restoration of excavated pit. Waste rock encountered as clay pockets will be removed.

The overburden /waste rock removed will be partially consumed in preparation of roads and ramps, earthen bund /protective barrier / fencing, low lying areas for future plantation program. The remaining waste rock will be dumped in the properly chosen sites with all precautions. The screen rejects will be used for filling rocky land and low lying area for plantation as most of the part of mining lease area is devoid of top soil cover. The waste rock and screen rejects will be dumped in separate dumps.

Mules will be utilized for transporting of Soapstone; therefore the generated dung will be collected separately & used for manuring in Plantation / agricultural purpose.

## **6.9 POWER REQUIREMENT & SUPPLY/ SOURCE**

No electrical power requirement for mining activities.

## **7.0 REHABILITATION AND RESETTLEMENT (R&R) PLAN**

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

## **8.0 PROJECT SCHEDULE & COST ESTIMATES**

### **8.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION**

No construction activity is involved under the project activity. The mining is being carried out as per approved mine scheme and will be done till lease period.

### **8.2 ESTIMATED PROJECT COST**

The capital investment for the project is Rs. 17 Lakhs.

## **9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

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

The proposed project is expected to provide employment to local people in different activities such as Mining, sizing, transportation and plantation activities. No displacement, resettlement, or rehabilitation is involved. The project activity will also not have any major impact on the environment being done manually using opencast method of mining. At Post mining stage of proposed project, the existing land shall be reclaimed to its original stage by proper restoration & rehabilitation.

Soapstone mining in this lease area will give following social benefits

- i. Employment opportunities to the locals.
- ii. Reduction in the migration of jobless labourers from native places to other distant places.
- iii. Interaction of local people with outsiders and improvement in communication, which will enhance their present status of knowledge and confidence.

Also the project proponent is committed to take initiatives which will have a positive impact on socio economic fabric of the region. As a part of community development Project proponent has allocated the budget for community activities such as Drinking Water, Housing, Sanitation, Health, Safety & Medical Facilities, Public Transportation & Communication, Educational/ Social Welfare etc.