

EXECUTIVE SUMMARY - ENGLISH

**SOAPSTONE MINING
AT VILLAGE – KANDA THARP, TEHSIL- KANDA,
DISTRICT BAGESHWAR, UTTARAKHAND**



PREPARED BY:



ENVIRONMENT MANAGEMENT DIVISION

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EXECUTIVE SUMMARY

The project has been proposed for the Mining of Soapstone from the private uneven Agricultural Land by open cast manual extraction method.

The Lease of Soapstone mining is an existing project, measuring 49.79 hectares. The lease was sanctioned from the Office of Industrial Development Govt. of Uttarakhand in favour of Smt. Nandita Tiwari, W/O Late Shri J.C. Tiwari, Tirupati Malli Bamori, Haldwani, District Nainital, Uttarakhand on 20-05-1972. The lease area lies in Village – Kanda-Tharp, Tehsil & District Bageshwar, Uttarakhand. The lease was primarily executed for a period of 5 years from 19/03/1978 to 18/03/1983. First Renewal for 10 years was granted from 19/03/1983 to 18/03/1993. Second Renewal took place for another 10 years from 19/03/1993 to 18/03/2003. Third renewal was applied for a period of 20 years on 07/06/2000 & is pending with the state govt., however the state govt. has given consent to continue the mining operations till any further order. The mining plan was approved vide letter no. 614(2/MP—B-252/06-DDN Dated 03/11/2006 for a period of 5 years (i.e. from 2006-07 to 2010-11). Mining Plan/Scheme of mining along with PMCP has been approved under MCDR, 1988 vide letter No. 614 (2)/MS-B-203/12-DDN dated 13.09.2012 by Deputy Controller of Mines, Indian Bureau of Mines and valid for a period of 5 years effective till 13.09.2017.

The expected project cost of the mine is Rs 17 Lacs, Total mineable reserves as on date as per the scheme of mining are 39,69,183 tonnes & with maximum of production of mineral 31693 tonnes at the end of fifth year, the life of mine comes about 125 years.

As per the MoEF, New Delhi Gazette dated 14th September 2006 and subsequent amendments, the proposed mining project is categorized as category 'B' project.

REGULATORY COMPLIANCES & APPLICABLE LAWS/REGULATIONS

- With reference to Letter No. 2186 (1)/7/2004-248 KHA/2002, dated 11-10-2004, issued by Uttarakhand Government, stated that as per Mineral Concession Rule 1960 (24 A)6. The Mining Lease Renewal deemed to be extended for the period till the Government passes Order thereon & proponent shall be eligible for doing mining activity till further Order as per the above Rule.
- As per Letter No. 30 (02)/2006-RC, Ministry of Mines, New Delhi, Dated 17.09.2010 give their consent for mining vide Order no. 367/2010, Dated 15.09.2010 against the Revision Application File by the Proponent.

- With reference to Letter No. 1303/VII-1/25-WRIT/2012 (247-KHA)/2002, Dated 23.01.2013 issued by Chief Secretary, Government of Uttarakhand given their consent to continue mining from the said lease land till the final decision on the renewal of mine lease.
- Mining Plan/Scheme of mining along with progressive mine closure plan has been approved vide Letter No. 614 (2)/MS—B-203/12-DDN Dated 13/09/2012 by the Indian Bureau of Mines, Dehradun, Project Proponent shall submit a copy of EIA / EMP to the Regional Office of Mines after approval from MoEF.
- Terms of Reference have been issued from SEAC, Uttarakhand vide their Letter No. 425/SEAC dated. 05.08.2014.
- There is no National Park, Wildlife Sanctuary, National Monument, Reserved and Protected Forest within mine lease area.
- There is no legal issue against the Project in the court of law.

Salient Features of the Project

Name of the Applicant	Smt. Nandita Tiwari
Name & Address	Name : Smt. Nandita Tiwari W/O Late Shri J. C. tiwari Tirupati Malli Barmori, Haldwani District : Nainital Uttarakhand - 263139
Name of the project	Soapstone Mining
Village	Kanda Tharp
Tehsil	Kanda
District & State	Bageshwar, Uttarakhand
Nearest Railway Station	Kathgodam – 200 Km (by road)
Nearest Airport	Pant Nagar – 220 Km (by road)
Nearest Highway	Bageshwar-Barinag road (~ 28.0 km)
Mineral	Soapstone
Area (ha)	49.79 ha

Period of Lease (Yrs)	20 years
Status of Mine	Existing

LOCATION

The mining area is located in Village: Kanda Tharp, Tehsil: Kanda, District: Bageshwar, Uttarakhand. The applied area is about 28 km from Bageshwar on Bageshwar-Barinag PWD road. The lease area is about 3.0 km from Kanda Parao & is approachable by Kanda Parao-Dhaploashera PWD metalled road. The mining lease / proposed project area falls in Survey of India Toposheet No. 53 O/13. The Co-ordinates of the mine lease area are:

Latitude	29° 49'12.62" to 29° 49'33.01" N
Longitude	79° 52'05.86" to 79° 52'56.81" E

LEASEHOLD AREA DETAILS

The entire Mining Lease area of 49.79 is a non forest land & comprises of uneven agricultural land only having deposits of Soapstone.

The entire lease hold area of 49.79 Ha lies under private owner ship. Lessee has obtained no objection certificate from the individual land owners for the exploitation of mineral Soapstone.

The existing land use pattern of the mine lease area is as given below:

Existing land use pattern of the lease area

S. No.	Activities	Area (ha)
1.	Mining pits	4.517
2.	Waste dumps	1.018
3.	Backfilled area	3.193
4.	Drainage	0.012
5.	Foot track	0.062
6.	Retaining wall	0.006
7.	Undisturbed area	40.982
	TOTAL	49.79

INFRASTRUCTURE FACILITIES & BASIC AMENITIES WITHIN THE STUDY AREA

Road: The mine lease area is connected by 500 m long mule track from Kanda-parao to Dhapolasera unmetalled PWD road. The road is metalled up to Kanda-parao. The area is accessible by this road from Kanda at a distance of 22 Km.

Water: Government has provided water supply scheme to most of the household in the nearby villages and there is also provision of sources like springs also.

Electricity: Electricity is available in most of the houses in the nearby villages.

Education: Primary school exists near the lease area. Kanda has all the essential facilities for education that includes Boys and Girls higher secondary school, Inter College, Industrial training Institute. Kanda has one of the oldest colleges in Kumaon region.

Medical facilities: Major medical facilities are available at Kanda.

Banking facilities: Branch of State Bank of India is available at Kande Kanyal.

Post & Telegraph facilities: Post & Telegraph facilities are available near the mine site.

Railway station: Nearest railhead is available at Kathgodam at a road distance of 200 Km.

Airport: Nearest airport is Pantnagar at a distance of 222 Km by road.

MINERAL RESERVES

Category wise updated reserves with grade are as follows:

Type of reserves	UNFC Code	Quantity (tonnes)		Grade
		In situ reserves	Recoverable reserves	
Proved Mineral Reserves	111	4982952	4733806	Cosmetic, paper & soap
Probable Mineral Reserves	121	3368617	3200186	Cosmetic, paper & soap
TOTAL		8351569	7933992	
Inferred Mineral Resource	333	2773274	2634611	Cosmetic, paper & soap

MINING

The mining will be carried out by open cast manually method. The top soil & sub soil will be scrapped manually & stacked separately near the working pit. An Excavator shall be deployed

for the removal of overburden & interburden but its deployment will be rarely & occasionally for 4-5 days in a month. The magnesite boulders intermixed with Soapstone will be broken with the help of chisel and hammer and dumped near the mining faces. The Soapstone will be excavated with the help of crow bar & spade and stacked separately. Sorting & sizing of mineral will be carried out manually. No further beneficiation shall be undertaken during first five years. Different grade of Soapstone will be filled into 50 kg plastic bags & transported upto the PWD road by mules. From road side the Soapstone bags will be loaded into trucks manually & transport to Haldwani.

In the past mining has been carried out in an unsystematic and haphazard manner. Hence, in future mining will be done in an eco-friendly, systematic and scientific manner. The salient features of the mining method are:

- ✓ It will be open cast manual mine.
- ✓ An excavator shall be deployed for the removal of overburden & interburden & its deployment shall be 4-5 days in a month.
- ✓ Soapstone mine is an already existing one, hence does not call for any specific development.
- ✓ During the whole course of mining, bench height will be kept 1.5m; width of benches shall be kept 2m with face slope of 75°.
- ✓ Each mining face shall be provided with a 1 m wide foot track having a gradient of 1:6.
- ✓ Mining shall be carried out in two pits simultaneously.
- ✓ **Pit-I** : an area of 1.155 ha shall be occupied by the mine faces, Face length will vary from 35m to 210 m, width of face shall be kept at 2 m and amount of advancement will vary from 4 m to 55 m. Slope of faces shall be kept at 75° and maintaining an overall pit slope of 45°. An area of 2445 m² shall be reserved for interburden dumping and 145 m² area shall be covered by topsoil.
- ✓ **Pit-II** : an area of 1.775 ha shall be occupied by the mine faces, Face length will vary from 8 m to 170 m, width of face shall be kept at 2 m and amount of advancement will vary from 8 m to 60 m. Slope of faces shall be kept at 70° to 75° and maintaining an overall pit slope of 45°. An area of 5000 m² shall be reserved for interburden dumping and 480 m² area shall be covered by topsoil.
- ✓ Mining shall be carried out from top to bottom through the formation of benches, As the mining pit approaches the maximum economical depth, rehabilitation shall be started from top benches.
- ✓ Top soil & interburden to be generated shall be temporarily dumped on the earmarked site towards slope side & used for backfilling from third year onwards.

- ✓ The retaining wall having a width and height each of 0.75 m will be erected all along the side and slope of interburden dumps and topsoil stacks.
- ✓ No drilling and blasting is required. Tools like crow bars, Pick-axes, spade; chisels, hammers etc. will be used.

Production Target Parameters:

The soapstone production target for the first five years, along with the target for removal of Soil & interburden waste is given below:

Year	Pit no.	Total excavated Soapstone (Tonnes)	Saleable soapstone (Tonnes)	Interburden (cum)	Top Soil (cum)	Stripping Ratio
1 st year	Pit -1	9876	9380	8863	623	1 : 0.95
	Pit-2	17433	16560	15644	1227	1 : 0.97
	Total	27309	25940	24507	1850	1 : 0.96
2 nd year	Pit -1	12695	12060	11392	112	1 : 0.91
	Pit-2	15961	15163	13524	198	1 : 0.86
	Total	28656	27223	24916	310	1 : 0.88
3 rd year	Pit -1	14519	13811	13030	396	1 : 0.92
	Pit-2	14941	14194	13408	901	1 : 0.96
	Total	29460	28005	26438	1297	1 : 0.94
4 th year	Pit -1	12963	12315	11633	0	1 : 0.90
	Pit-2	16963	16114	15222	1330	1 : 0.98
	Total	29926	28429	26855	1330	1 : 0.94
5 th year	Pit -1	15369	14610	13791	0	1 : 0.89
	Pit-2	17983	17083	16139	630	1 : 0.93
	Total	33352	31693	29930	630	1 : 0.91
TOTAL	Pit -1	65422	62176	58709	1131	1 : 0.91
	Pit-2	83281	79114	73937	4286	1 : 0.94
	Total	148703	141290	132646	5417	1 : 0.93

The mine will be worked on the day shift only; the average number of working days in the year would be 240. During the first five years of working about 1, 41,290 tonne of soapstone will be produced.

GREEN BELT DEVELOPMENT

The total land use is agricultural & individual land owners will not allow plantation in their respective fields. Since plantation of trees will be an obstacle to farming, it would be advisable that the plantation is taken up elsewhere. Therefore plantation is proposed to be taken outside the leasehold in the benap land. Plantation of Chilmora, Doob grass shall also be undertaken over waste dumps and & subgrade dumps for stabilization of waste material & maintaining the aesthetic beauty of the area.

Based on their native nature and survival rate, following species are selected to be planted during the plantation programme:

- Oak, Banjh, Kafal
- Chir, Devdar
- Citrus, Malta, Narangi
- Tun, Dudhil, Timul

Year wise plantation will be taken towards north-east outside the mine lease area over van panchayat land with consultation of DFO. Year-wise plantation programme for first five years as per approved scheme of mining is as given below:

Green belt development

Year	Area (ha)	No. of Saplings
1st year	0.5	500
2nd year	0.5	500
3rd year	0.5	500
4th year	0.5	500
5th year	0.5	500
Total	2.5	2500

Chimora, Agave, Doob grass will also be planted because of its soil binding properties. Given the type of climate and other physical features, the expected rate of survival is 50% to 60%.

WATER SUPPLY

The water required is mainly for dust suppression, green belt development, drinking and other domestic purpose during mining operations. The total water requirement will be 5.0 m³/day; which will be met from natural spring resource & river water as per availability & suitability for the purpose.

Water Demand

S.No.	Purpose	Water Requirement (KLD)
1.	Domestic	2.0
2.	Dust Suppression	1.5
3.	Green Belt Development	1.5
TOTAL		5.0

BASE LINE DATA

The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed.

Environmental data has been collected in relation to proposed mining for:-

- (a) Air
- (b) Noise
- (c) Water
- (d) Soil
- (e) Ecology and Biodiversity
- (f) Socio-economy

Baseline Environment Status

Attribute	Baseline status
Land Environment	Landuse surrounding 1 Km from the project site comprises mainly of private agricultural land and some waste land. A detailed study was carried out to assess Landuse pattern surrounding the 10 km radius of the site. The land use pattern study reveals that the 10 km environment is predominantly Forest followed by agriculture with few settlements,

	some open waste land and water bodies.
Ambient Air Quality	<p>Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM_{2.5} for all the 6 AQ monitoring stations were found to be 17.98 µg/m³ at AQ-1 and 41.99 µg/m³ at AQ-5 & AQ-6, respectively while the minimum & maximum concentrations of PM₁₀ was found to be 32.56 µg/m³ at AQ-1 & AQ-3 and 58.42 µg/m³ at AQ-2, respectively.</p> <p>As far as the gaseous pollutants SO₂ and NO_x are concerned, the prescribed CPCB limit of 80 µg/m³ for residential and rural areas has never surpassed at any station.</p>
Noise Levels	Noise monitoring was carried out at Six locations. The results of the monitoring program indicated that both the daytime and night time levels of noise were well within the prescribed limits of CPCB, at all the Six locations monitored.
Water Quality	<p>Six Groundwater samples were analyzed and concluded that:</p> <p>The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by Indian Standards IS: 10500.</p> <p>No surface body exists within the 1 Km radius of mine site; hence no sampling has been done for surface water.</p>
Soil Quality	Samples collected from identified locations indicate the soil is sandy clay type and the pH value ranging from 7.04 to 7.32, which shows that the soil is neutral to slightly alkaline in nature. Potassium is found to be from 62.78 mg/kg to 66.89 mg/kg. The Moisture retention Capacity is found in between 36.99 % to 43.18%.
Ecology and Biodiversity	There are no Ecologically Sensitive Areas present in the study area, but many reserved forests regions surround the project area
Socio-economy	The implementation of soapstone mining project at village Kanda Tharp, Tehsil – Kanda, Bageshwar will throw opportunities to local people for both direct and indirect employment. The study area is still lacking in education, health, housing, etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

LAND USE PATTERN

Proposed project is a new mine lease with some exploratory pits and already existing foot tracks. Landuse pattern of the lease hold area for pre-operational, operational & Post-operational stage is as follows:

S. No.	Activities	As on date	At the end of mining scheme period (ha)	At the end of conceptual period (ha)
1.	Mined Out area			
	Broken area	4.517	2.93	36.72
	Area fully mined out	3.193	0.885	36.72
	Area backfilled & reclaimed for agriculture	3.193	0.885	36.72
2.	Dump Area			
	Total area under dump	1.018	0.807	Nil
	Area under active dump	Nil	0.807	Nil
	Dump area fully rehabilitated	Nil	Nil	Nil
3.	Others			
	Area under mineral stack	Nil	Nil	Nil
	Area under road	0.376	Nil	Nil
	Area under green belt (i.e. plantation on area other than dump & backfilled area)	0.03	0.01	0.21

WASTE MANAGEMENT

The site for mining is having a soil cover of 1.0 – 2.0 m thickness (average 1.5 m). Dumping material during the mine will consist of soil and waste (over burden & inter burden). The low grade magnesite boulders are high silica percentage and hence the same is treated as interburden and will be dumped separately. No mineral reject will be produced during next five years.

The quantity of soil and interburden material to be generated during first five years is given below:

Waste generated during the first five years

Year	Pit I		Pit II		Total (after swell factor)	
	Interburden (cum)	Top Soil (cum)	Interburden (cum)	Top Soil (cum)	Interburden (cum)	Top Soil (cum)
I	8863	623	15644	1227	27940	2109
II	11392	112	13524	198	28406	353
III	13030	396	13408	901	30142	1479
IV	11633	-	15222	1330	30617	1516
V	13791	-	16139	630	34123	718
Total	58709	1131	73937	4286	151228	6176

Soil & waste stacked separately near the working pits. The waste dump & top soil stacked near the mining pit will be temporary in nature. Therefore soil stack & inter burden material have not proposed to be dumped separately. Retaining wall around the waste/ top soil dump yard will be constructing to arrest the waste and garland drain is made to flow of water. The excavated pits would be restoring by the back filling. Back filled area will be topped up with soil, planted with grass & made ready for agriculture.

AIR ENVIRONMENT

ANTICIPATED IMPACTS AND EVALUATION

Mining shall be carried out using opencast manual method which does not involve drilling and blasting. Hence, there is no source of air pollution from the excavation activity. Loading of mineral will also be done manually and transport till the roadside shall be carried out via mules. Therefore, emission of dust or any other particulate matter is not anticipated. There is no boiler, DG Set or any other machinery which can be a source of pollution. Only source of air pollution is re-suspension dust from the Excavation Process, Loading Operation and movement of mules from mining site to roadside. This will not be a major issue as the dust emission will be regulated by sprinkling of water on the track path for suppressing the dust.

MITIGATION MEASURES

The dust suppression measures like water spraying will be done on the roads. This will decrease the dust emission by 75%. Utmost care will be taken to prevent spillage from the trucks. Overloading will be prevented. Plantation activities along the roads will also reduce the impact of dust in the nearby villages. Dust mask, Goggles will be provided to the workers engaged at dust generation points like excavations, loading and unloading points. Trucks will be covered by tarpaulin also.

WATER ENVIRONMENT

ANTICIPATED IMPACTS AND EVALUATION

The impact on water quality will be confined to increased suspended solids during rain. No surface or ground water body exists within the mine lease area. As the mining is being carried out in the hilly region, the problem of ground water pumping will not be there. Only rain water will have to be channelized in such a way that it does not carry suspension to natural streams flowing on the either side (North & South) of lease area.

Mining work will be confined within gullet driven from the south to north and advance towards east to west. A ledge of about 1 m height will be kept on the outer edge so that in discrete water flow is avoided. The dumps to be generated will be temporary in nature & used for the purpose of backfilling by the end of third year onwards. The dumps will be secured with toe walls and rainy water will not carry significant suspended material. However water sprinkling on the foot track shall be carried out during summer month to suppress the dust.

MITIGATION MEASURES

Mining of soapstone does not have any significant impact on the water quality and parameters as the mining does not intercept with the ground water level. Further no significant impact is anticipated as the material exposed will be magnesite and dolomite. Both of them feebly react with water and that too when water is acidic. Even if the reaction takes place it cause an increase in temporary hardness. However in this case drinking water is being taken from the natural spring. The domestic sewage shall be disposed through eco-friendly mobile toilet.

In this project, it is not proposed to divert or truncate any stream. No proposal is envisaged for pumping of water from the river. There will not be any adverse impact on surface hydrology and ground water regime due to this project. Project proponent will adhere all guidelines and rules for proper and scientific method of mining during the period of extracting the soapstone. Thus, the project activities shall not have any adverse affect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality.

NOISE ENVIRONMENT

ANTICIPATED IMPACTS AND EVALUATION

As there will be no heavy earth moving machinery except an excavator deployed for overburden removal, there will not be any major impact on noise level due to the mining and other association activities a detailed noise survey has been carried out and results are discussed in Chapter -3. It was found that the mining activity will not have any significant impact on the noise environment of the region.

MITIGATION MEASURES

On-site

As mining will be done manually, no machineries will be used except an excavator deployed for overburden removal. So, as such no hearing protection is needed for the miners. However Periodical monitoring of noise level near vicinity of operating mining and at some other designated locations shall be carried out. Proper maintenance of all vehicles used for transportation shall be ensured.

Off-site

The off-site receptors are not significantly affected as they are located far away from the mine site. Plantation will be done along the roadsides, civic amenities, etc. which will more or less dampen the off-site noise level.

It was found that the mining activity will not have any significant impact on the biological environment of the region. Since mining activity is carried out only during the day time, the movement of animals during the night will not be hindered. Proper mitigative measure will be taken by the contractor, in consultation with local NGOs working in the study area.

TRAFFIC ANALYSIS

From the analysis it can be seen that there will be a mere addition of 4-8 PCU/hr from the proposed mining activity. So the additional load on the carrying capacity will not be affected to a significant level.

ANALYSIS OF ALTERNATIVES

Soapstone mining is a site specific project depending upon the geological set up and mineable area. The land being uneven and non-suitability of land for any other purpose makes it suitable for mining as the land will become suitable for agriculture purpose at the end of mine life. This will also generate employment to the nearby villagers. Hence, there is not much scope for site alternative.

As per mine plan; most efficient and least polluting technologies have been prescribed. Hence, no alternative technology has been adopted. Thus it will have more acceptability and help in socio economic upliftment of the area.

ENVIRONMENT MONITORING PROGRAMME

S.No.	Description of Parameters	Schedule and Duration of Monitoring
1	<p>Air Quality</p> <p>a) In the vicinity of the mine</p> <p>b) In the vicinity of the transportation network</p>	24 hourly samples twice a week for one month in each season except monsoon.
2	<p>Water Quality</p> <p>Water quality of surface and groundwater</p>	Once in each season

	around the site Drinking water must conform to drinking water standards	
3	Ambient Noise Level	Twice in a year for couple of years & then once in a year
4	Soil Quality	Once in two years on project monitoring area
5	Inventory of Flora(tree plantation, survival etc)	Once in two years on project monitoring area
6	Socio-economic condition of local, population, physical survey	Once in 3 or 4 years

SOCIAL IMPACT ASSESSMENT, REHABILITATION & RESETTLEMENT (R&R) ACTION PLAN

There will be no resettlement or rehabilitation involved in the project as the site area does not involve any settlement or housing.

The implementation of the soapstone mining project in village – Kanda Tharp, Tehsil- Kanda, district Bageshwar will throw opportunities to local people for both direct and indirect employment. As the project proponent is the rightful lessee of the mine lease area, hence the soapstone mining operation will be legalized and it will fetch income to the state exchequer. The project will also provide impetus to industrialization of the area. It is likely the intending entrepreneurs will venture to set up micro and small scale units in the near future making the area a mixed society, dependent on industry, trade and business. At present agriculture is the main occupation of the people as 78 percent of the population depends on it. With the implementation of the proposed mining project the occupational pattern of the people in the area will change making more people engaged in industrial and business activities rather in agriculture. Thus there will be a gradual shifting of population from agriculture to mining and industry. Further, the mining and industrial activities in the area may lead to rapid increase in population and thereby urbanization. Due to urbanization of the area, employment opportunities will further increase.

The study area is still lacking in education, health, housing, etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

BENEFITS OF MINING

The opening of the proposed project will enhance the socio-economic activities in the adjoining areas. This will result in following benefits:-

- ✓ Improvements in physical infrastructure.
- ✓ Improvements in Social Infrastructure.
- ✓ Increase in Employment Potential
- ✓ Contribution to the Exchequer.
- ✓ Prevention of illegal mining.
- ✓ During and Post-mining enhancement of green cover.

CORPORATE SOCIAL RESPONSIBILITY

Though the proposed mining activity is out of the scope of CSR Mandate 2013 of the Indian Government, but the project proponent has made provisions to invest in community development as a part of their Corporate Social Responsibility. Details of activities identified by the proponent and the amount to be invested for social development in the surrounding area are given below:

Details of community development activities along with budget and timeline

S. No.	Activities	Expenditure to be incurred per year (Rs.)	
		First five years	Next five years
a)	Maintenance of foot track	10000	10000
b)	Contribution for religious activities	8000	10000
c)	Contribution towards school development	10000	15000
d)	Contribution for cultural activities	5000	10000
e)	Contribution for sports activities	10000	10000
f)	Contribution for providing employment	60000	80000
	TOTAL	103000	135000

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Proper environmental management plan are proposed for “Soapstone” mining project to mitigate the impact during the mining operation.

- ✓ Dust mask, Goggles will be provided to the workers engaged at dust generation points like excavations, loading and unloading points.
- ✓ The dust suppression measures like water spraying will be done on Hand Tools will be involved for excavation and loading of mineral and overburden. These are not overloaded.
- ✓ Overloading will be prevented. Soapstone mineral will be packed in 50 kg bags & the trucks will be covered by tarpaulin covers.
- ✓ In order to reduce the spread of air pollution in the surroundings, plantation has been carried out around the mines office, mine approach road, along mine boundary etc. to control dust pollution. Green belt / plantation will be further enhanced to restrict dust emissions within the lease boundary.
- ✓ All the haulage roads in the area are kept wide, leveled, compacted and properly maintained and water is sprayed regularly during the shift operation to prevent generation of fugitive dust due to movement of Trucks, and other vehicles.
- ✓ Periodic air quality survey will be carried out to monitor the quality and for timely corrective actions.
- ✓ Permanent stations are made at the mine site to conduct regular monitoring.
- ✓ Ensuring Proper maintenance of all vehicles used for transportation, which help in reducing generation of noise during operation.
- ✓ Periodical monitoring of noise level near vicinity of operating mining and at some other designated locations is done with the help of noise level meter and results are submitted to respective authorities.
- ✓ The greenbelt will be developed which will minimize propagation of noise.
- ✓ Garland drain along with siltation bund will be provided around dumps to retain the water percolation coming from waste dumps for settling of solid particles.
- ✓ Rainwater falling in the catchments area of mining pit is being collected in sump of mines i.e. in lower benches.
- ✓ No waste water generation is envisaged during the mining process. The domestic sewage will be disposed through eco-friendly mobile toilet.

- ✓ No toxic material is encountered in the deposit. The mine drainage, if any, will not be harmful to the biotic life. Adequate control measures will be adopted to check not only the wash-off from soil erosion but also uncontrolled flow of mine water.
- ✓ The waste generated during the proposed period is dump at earmarked site and same will be backfilled in excavated area at the end of life of mine
- ✓ Retaining wall around the waste/ top soil dump yard will be constructing to arrest the waste and garland drain is made to flow of water.
- ✓ The topsoil will be stacked and utilized in plantation purpose within the lease area pits and for backfilling.
- ✓ Care will be taken that no cooking, or burning of woods will be allowed in the adjoining area.
- ✓ Prior to mining, short awareness program will be conducted for labours to make them aware to way of working.
- ✓ If some causality or injury to animal occurs, it should be informed to forest department and proper treatment should be given.
- ✓ No tree cutting, chopping, lumbering, uprooting of shrubs and herbs should be allowed.
- ✓ Corridor movement of wild mammals (If exists) should be avoided

ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

Keeping the utility of monitoring results in the implementation of the environmental management program in view, a team will be prepared for proper implementation of EMP.

The said team will be responsible for:

- ✓ Collecting water and air samples from surrounding area and work zone monitoring for pollutants.
- ✓ Analyzing the water and air samples.
- ✓ Implementing the control and protective measures.
- ✓ Co-coordinating the environment related activities within the project as well as with outside agencies.
- ✓ Collecting statistics of health of workers and population of surrounding villages.
- ✓ Monitoring the progress of implementation of environmental management program.
- ✓ Greenbelt development, etc.
- ✓ A suitably equipped laboratory for sampling/testing for various environmental pollutants.

BUDGET ALLOCATION FOR EMP IMPLEMENTATION

S.No.	Description	Cost (in Lacs/Annum)
1	Air Quality a) Monitoring in the vicinity of the mine b) Monitoring in the vicinity of the transportation network c) Cost of dust suppression	0.2
2	Water Quality a) Water quality of surface and groundwater around the site b) Drinking water must conform to drinking water standards	0.15
3	Ambient Noise Level	0.05
4	Soil Quality	0.05
5	Socio-economic condition of local, population, physical survey	0.05
6	Man power cost for environmental cell	0.5
	TOTAL	1.0

CONCLUSION

All possible environment aspects have been adequately assessed and necessary control measures have been formulated to meet statutory requirements. Thus implementing this project will have positive impacts.