❖ **INTRODUCTION**

Proposed project for mining of soapstone is situated near Village Gaund, District: Chamoli, Uttarakhand in an area of 10.407 hectares. Mining Lease was granted in favor of Mr. Vipin Singh Rana vide letter no. 2518/VII-II/108kha/2008 dated 09-08-2010. The validity of LOI has been extended by Chief Administration Uttarakhand administration dated 9.08.2010, 18.01.2013 and 28.03.2014 respectively. Proponent has applied for the renewal of the LoI which is pending with the state government.

The proposed mining project has been categorized as Category B project. However in the absence of SEIAA, Uttarakhand the proposal was submitted to MoEF (Now MoEF & CC) the proposal was considered by the EAC. After the reconstitution of SEIAA/SEAC uttarakhand the case has been transferred from MoEF to SEAC Uttarakhand

Out of total 10.407 Ha of lease area, 6.250 Ha was categorized as forest land as per the Indian Forest Act 1878, notification no 869 एफ /638 dated 17.10.1893. However later on this was ruled out by the notification no. 866/x-3-2011/8(21)/2010 dated 28.09.2011.

The proposed rate of production is 6, 017TPA of mineral. The estimated project cost is Rs. 25 Lakh. The expected life of mine is 35 years. This project falls in category "B".

❖ **PROJECT DESCRIPTION**

Salient Features of Project

Sr. No.	Parameter	Description
1.	Name of the Mine	Mining of soapstone near village gaund
2.	Mining Capacity	6, 017TPA
3.	Longitude	30°20'53.18"N to 30°20'57.27"N
	Latitude	79°28'38.51"E to 79°28'44.97"E
4.	Method of mining	Opencast Manual Mining
5.	Total ML area	10.407 ha
6.	Bench Slope	45°
7.	Average soil thickness	1.5 m

Sr. No.	Parameter	Description
8.	Transportation of Material	Soapstone will be filled into 40 kg plastic bags & transported to NH 58 via metalled road by mules where the mineral will be loaded into trucks.
9.	Manpower	57
10.	Water Requirement	14 KLD
11.	Source of Water	It is proposed to obtain water for drinking and plantation from spring under the scheme of Swajal Dhara (Govt. of India).
12.	Solid Waste Generation	17880 T

❖ **Details of Mining**

Method of mining	Manual	
Bench Height and Width	Bench height	: 1.5m
	Bench width	: 2m- 3m (working width)
Mineable Reserve	2,06,605 T	
Life of the Mine	35 Years	

❖ **2.2 Use of Mineral**

The soapstone is used in the talc powder, paper & detergent and medicinal industries. It is a basic raw material required for manufacturing industries. This will bridge the gap between supply and demand of soapstone not only in the region but also State. Main occupation of the people of this area is agriculture and their land is too small for their living. This project will also generate much needed employment to the local people. Economy of the area will get a boost and there will overall growth of the region in terms of educational, health, training, transport & industry. The standard of living accordingly will also get an upliftment on the positive side.

❖ **Land Use Pattern**

SI. No.	Particulars	Present land use pattern (Ha)	End of the fifth years (Ha)	Conceptual land use pattern (Ha)
1	Pits and Quarries	0.091	0.63	5.53
2	Waste Dump	--	0.049	--
3	Soil Stack	--	0.022	--
4	Backfilled pit	--	--	--
5	Retaining/ toe wall	--	0.014	0.042
6	Foot track	0.034	0.024	0.11
7	Office Rest Shelters etc.	--	0.010	--
8	Undisturbed area	10.282	9.658	4.725
Total		**10.407**	**10.407**	**10.407**

❖ **DESCRIPTION OF THE ENVIRONMENT**

The baseline environment study was carried out over an area with radial distance of 10 km around the mining lease area during post -monsoon season **(October - December 2014)**

❖ **Meteorology**

Meteorological data at the site was monitored during October to December representing post - monsoon season. It was observed that the during study period, temperature ranged from 2.9^{0}C to 26.3^{0}C.

❖ **Ambient Air Quality**

Ambient Air Quality Monitoring (AAQM) has been carried out at seven locations post-monsoon season of Oct'14 to Dec'14. The Particulate Matter (PM_{10}) conc. ranged between $63.8 \mu g/m^3$ to $84.2 \mu g/m^3$. Fine particulate matter ($PM_{2.5}$) conc. ranged between $26.8 \mu g/m^3$ to $42.3 \mu g/m^3$. Sulphur dioxide (SO_2) minimum and maximum concentration of SO_2 recorded within the study area was BDL (below detectable limit) to $7.2 \mu g/m^3$. Nitrogen Dioxide (NO_2) between $9.1 \mu g/m^3$ to $19.0 \mu g/m^3$. The

results thus obtained indicate that the concentrations of PM10, SO_2 and NO2 in the ambient air are well within the National Ambient Air Quality (NAAQ) standards for Industrial, Residential, Rural and other areas.

❖ **Noise Levels**

Ambient noise levels were measured at seven locations around the proposed mine site. The daytime and nighttime noise levels ranged between 48.3 to 50.2 dB (A) and 37.2 to 41.6 dB (A) respectively. The daytime and nighttime noise levels in all the locations were observed to be within the permissible limits.

❖ **Water Quality**

To assess the physical and chemical properties of water in the region, water samples from 4 locations were collected from various water sources around the mine lease area. The pH of the ground water samples in the region varied from 7.41 to 7.71 and the surface waters are 7.69 to 7.85. Total Dissolved Solids found in ground water to be varied from 166 mg/l to 178 mg/l. The chloride level in the surface water samples collected in the study area were ranging from 10 mg/l to a maximum of 12 mg/l, in ground water samples 8 mg/l to 10 mg/l.

The results indicate groundwater is generally in conformity with the drinking water standards (IS: 10500) and surface water is in conformity with IS-2296 standards

❖ **Soil Characteristics**

The soil samples were collected in the month of October 2014. Soil samples were collected from 6 locations to assess the existing soil conditions representing various land use conditions and geological features and each of these locations were identified randomly from where soil was collected from 30 cm below the surface. In the study area, variations in the pH of the soil were found to be slightly basic (6.63 to 7.87). Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 201-321

❖ **Socioeconomic Scenario**

The study area (10-km radius) area has a total population of 7930 according to 2011 census. Total male population is about 50.51% and total female population is around 49.43%. The average literacy rate is good and above average in the region

❖ **ANTICIPATED ENVIRONMENTAL IMPACTS**

❖ **Impact on air**

Mining will be carried out by opencast manual method. The air borne particulate matter generated by ore and handling operations, and transportation of ore is the main air pollutant. The emissions of Sulphur dioxide (SO2), Oxides of Nitrogen (NOx) contributed by diesel operated vehicles plying on haul roads are marginal.

❖ **Impact on water environment**

Impact on surface water bodies- No surface water source such as rivers, streams & dam exists in the mining lease area. There is no toxic element in and around the applied area or in OB or ore. Hence contamination of any nature is not expected for surface or any ground water source.

Impact on ground water table- Ground water level of the area in general is about 9.06 to 60.75 m below the ground level. The mining activity will be restricted above the ground water table. Therefore; the mining activity in the leasehold area will not make any impact on ground water.

Noise Impact

The impact of noise on the villages is negligible as the villages are far located from the mine workings. Since there is no involvement of major machinery, the impact of noise levels will be very low.

❖ **Impact on Land Environment**

Opencast mining activities may alter the landscape of the lease area and also cause some disturbance to the surface features of the surrounding areas. Thus out of 10.407 Ha of ML area, total excavated area of will be reclaimed and rehabilitated by way of afforestation, 0.070 ha will be developed under green belt.

❖ **Impact on forest and vegetation**

Impacts on Biodiversity- There is no schedule 1 species and ecosensitive area in the study zone.

❖ **Impacts on agriculture-** Agriculture activities practiced in nearby areas will not get impacted because mitigative measures such as regular water sprinkling on active areas for example haul roads will be strictly followed so that impact is minimized.

❖ **Socio economic environment**

The impact of mining activity in the area is positive on the socio-economic environment of the region. mine deposit will provide employment to local population employing only local people whenever there is requirement of man power.

❖ **POST PROJECT MONITORING PROGRAM**

S. No.	Description	Frequency of Monitoring
1	Ambient Air Quality	Quarterly/Half yearly
2	Meteorological data	Daily
3	Noise Level Monitoring	Half yearly
4	Water Level & Quality	Quarterly/Half yearly
5	Soil Quality	Yearly
6	Monitoring of Agricultural crops	Yearly

❖ **ADDITIONAL STUDIES**

The Additional Studies conducted are Risk Assessment & Disaster Management / Hazard Management & Occupational Health & Safety.

❖ **PROJECT BENEFITS**

The project will prove beneficial to the people as the company has already agreed to provide infrastructural facilities to the villagers like Educational facilities, Medical facilities, Transportation facilities, water supply etc. which will improve the socio-economic environment of the area.

❖ **ENVIRONMENT MANAGEMENT PLAN**

Air Management

Following measures will be taken to control air pollution during mining operations:

É   Adequate water spraying on the haul roads.

É   Construction of proper haul roads in the lease area.

É   Development of Green belt/plantation within mining lease along haul roads, mine office to arrest dust.

É   Water spraying shall be done before the mineral is loaded in dumpers/trucks.

Water Management

No waste water generation is envisaged during the mining process. The probable cause of surface water pollution in the proposed mining area will be soil erosion and wash off from the stacked mineral in monsoon period. During monsoon season the run-off water flows into natural water courses. The surface water entering into the mines during the rainy season would be diverted through a suitable drain to reduce wash off of soil. 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.

Noise Management

É   All precaution will be taken to reduce generation of noise and noise level survey will be done at regular intervals.

É   Ear protectors or earplugs will be given to persons working in higher noise level area or on machines.

É   Plantation of trees on internal roads and barriers.

Land Reclamation & Green Belt/Plantation

Till the end of conceptual period, a total of 0.07 Ha area of the worked out portion will be reclaimed and rehabilitated by afforestation. Around 0.198 ha of the area will be worked out till the end of mine, the quarry pits will be backfilled and restored will be used for agriculture purpose.

❖   **Budget for Environmental Protection**

SI. No.	Measures	Capital cost (Rs.)	Annual recurring cost(Rs.)
		Proposed	Proposed
1	Pollution Control	-	1,00,000
2	Pollution Monitoring	-	1,00,000
3	Occupational Health	50,000	10,000
4	Green Belt	1,00,000	2,00,000
5	Reclamation / Rehabilitation of mined out area	1,50,000	10,000
6	Others (specify)	-	-
	Total	**3,00,000**	**4,65,000**

❖ **CONCLUSION**

Based on the EIA study it is observed that there will be negligible increase in the dust pollution, which will be controlled by sprinkling of water and plantation. There will be an insignificant impact on ambient environment and ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the Mine.

Monitoring program will be followed till the mining operations continue. Hence, it can be summarized that the development of the mine will have a positive impact on the socio-economic of the area and lead to sustainable development of the region.

. The region is economically backward mostly dependent on seasonal farming. The per capita income of villages is much below the national average. It will increase the profitability of the company and will have positive impact in the socio-economic status of the people in the region & will increase opportunities for employment

The study area is still lacking in education, health, housing, water, electricity etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities. Proposed activities and expenses on Corporate Social Responsibility will be as per CSR Mandate of the Government.

****