1. EXECUTIVE SUMMARY

This project is for mining of mineral Soapstone, (M.L. No. 14/91 renewal M. L. No. 292/2011], near village Devpura, Tehsil- Sarada, District Udaipur (Rajasthan) over an area of 17.83 ha of M/s. Dhartidhan Pvt. Ltd. Station Road, South Sunderwas, Udaipur 313001.

M/s Dhartidhan Pvt. Ltd. had originally obtained the lease over an area of 40.45 ha for 20 years from 10.07.1962 to 09.07.1982 for mining of mineral soapstone near village Devpura, Tehsil Sarada, Dist. Udaipur, Rajasthan.

Its 1st renewal of over an area of 40.45 ha was granted vide Govt. Order No.P-2(40) Khan/Group-2/82, Jaipur dated 30.04.1990 for a period of 10 years from 10.07.1982 to 10.07.92. And 2nd renewal was granted vide Govt. Order No.P-12(86) Khan/Group-2/92, Jaipur dated-30.07.2001 for over an area of 17.83 ha for the period of 20 years from 10.07.1992 to 09.07.2012. Copy of latter along with lease deed enclosed as **annexure no.1,** Demarcation report enclosed as **annexure no.2** and rest of the area of 22.62 ha was surrendered at the time of grant of 2nd renewal as it was falling in Dingri Reserve Forest, under the provisions of Forest Conservation Act, 1980 this land was diversified vide MOEF's order no. No.8-B/05/1344/97/FC dated 28.10.1999. Copy of latter enclosed as **annexure no.3** .The applicant applied for 3rd renewal to the State Govt. in time. Copy of latter enclosed as **annexure no.4**

Environment Clearance was obtained by Ministry of Environment & Forests, New Delhi with the targeted production of 30,000 M.T. per year for Soapstone vide letter J-11015/160/2003 IA.II(M) dated 18.03.2005. Copy of EC Letter enclosed as **annexure no.5** and subsequently Consent of Air and Water from RSPCB have been obtained vides their letter No. F:12/340-371/RSPCB/GR.II/Mine/5153 dated 19.11.2008 for the production of 30,000 MT per year which was valid up to 31.10.2011 Copy of latter enclosed as **annexure no.6**

Modified Mining Plan & Progressive Mine Closure Plan has been approved vide IBM letter 682 (23) (MS325-II)/2005- MCCM (N) UDP dated 26.11.2012. Copy of approved Letter enclosed as **annexure no.7**

1.2 SALIENT FEATURES OF THE PROJECT:

Particulars	Details
Latitude	24°17' 22" N to 24°17' 51"N
Longitude	73°46' 30 "E to 73°48' 7.8 "E
Topo sheet No.	45 H/15
Total Mine Lease area	17.83 ha
Mineable Reserves of Soapstone	846325 MT
Production Capacity	30,000 tons per annum.
Life of Mine	More than 30 Year
Estimated project cost	3.099 crore
Man Power	27 Nos
Highest and lowest elevation	The highest mRL of 690m is recorded exactly near pillar **E-4**. The lowest mRL of 455m is recorded near pillar **E-5**.
Land use	Entire land is diversified forest land and clearance has been taken from Forest department and MoEF.
Nearest habitation/ town	Devpura
Nearest Airport	Maharana Pratap Airport, Dabok, Udaipur at a distance of 63 km from mine site.
Nearest Highway	NH-8 -connecting Udaipur – Ahmadabad at a distance of 20 km. via Zawar. RSH-32- connecting via Dungarpur - Banswara – Udaipur Which is About 7 Km. From Mine site.
Nearest railway track from mine boundary	Padla - 2.0 km. however the major railway station is situated at Udaipur at a distance of 45 Km.
Power supply	The electricity is required for office work only, which will be met from AVVNL.
Nearest Telephone	At village Devpura village which is about 1.8 km from the mine site.
Nearest Dispensary and Govt. Hospital	Devpura village
Educational facility	Devpura village
Water demand and supply	9.5 KLD
Nearest tourist places	None within the study area
Defense installations	None within the study area

<table>
<tr><td>Archeological Features</td><td>None within the study area</td></tr>
<tr><td>Ecological sensitive zones</td><td>None within the study area</td></tr>
<tr><td>Nearest Forests</td><td>The list of protected and reserved forests are as under:-
<table>
<tr><td>S.No.</td><td>List of Forests</td><td>Distance</td></tr>
<tr><td>1.</td><td>Dingri RF</td><td>Within</td></tr>
<tr><td>2.</td><td>Palodra RF</td><td>5.1 Km</td></tr>
<tr><td>3.</td><td>Maniyol RF</td><td>5.9 Km</td></tr>
</table></td></tr>
<tr><td>Nearest streams/ rivers/ water bodies (from mine boundary)</td><td>
<table>
<tr><td>S.No.</td><td>Watercourses (seasonal)</td><td>Distance</td></tr>
<tr><td>1.</td><td>Tiri Nadi</td><td>1.0 km</td></tr>
<tr><td>2.</td><td>Daiya Nadi</td><td>4.2 km</td></tr>
</table></td></tr>
<tr><td>Seismic zone</td><td>Seismic zone-II.</td></tr>
</table>

2. INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION:

(i) Identification of project and project proponent. In case of mining project, a copy of mining lease/letter of intent should be given.

The applicant is a private limited company involved in mining for Soapstone, having good experience in the mining field. The EC is required for renewal of Mining Lease for production of mineral Soapstone from 30,000 TPA. Copy of mining lease deed is enclosed at annexure no. 1.

The project cost is 3.099 crores and the expected life of the mine will be more than 30 years

Address of registered office & correspondence of the company is as under:-

Address of the firm:

M/s Dhartidhan Pvt. Ltd., Udaipur

Station Road, South Sunderwas

Phone: +91-294-2490754, 2490463, 2493491

Fax: +91-294-2493490

Email: ml.jain@golcha.com, info@egcipl.com

The applicant is private limited company and Directors of the company are:

1. Shri Vikram Golcha

2. Shri Ashok Chajjer

3. Shri M.C Jain

(ii) Brief description of nature of the project:

The project is an existing mine, producing 30,000 TPA of Soapstone by open cast and underground Semi-mechanized method. The applied lease area is 17.83 ha. The entire lease area falls in forest land and clearance has been obtained from MoEF. The total mineable reserves available are 846325 Tons of Soapstone. The expected life of the mine is more than 30 years. Water is required of the project for domestic use, dust suppression & plantation is 9.5 KLD

(iii) Need for the project and its importance to the country and or region:

The said project plays a significant role in the domestic as well as international mineral market. At the project site contains good potential of mineral resource which earn valuable foreign exchange for the Country by export. The mineral excavated from the project site is mainly used in Soap, detergents, Paper, Paints, Rubber, Plastics, fertilizer, textile, Pharmaceuticals, etc.

Rajasthan, the major producing state of Steatite/ Soapstone/talc accounted for as much as 74% of the total production in 2010-11. Among the other states, the share of Uttarakhand was 18% and that of Andhra Pradesh was nearly 7%. Nominal production was also reported from Bihar, Gujarat and Tamil Nadu.

Table: - 1 from the mineral year Book *Indian Bureau of Mines, Nagpur*

2009-10						2010-11 (P)				
State/District	No. of mines	Quantity			Value	No. of mines	Quantity			Value
		Insecticide/ DDT	Other than	Total Insecticide			Insecticide/ DDT	Other than	Total Insecticide	
India	126(5)	225916	650632	876548	713708	113(5)	276526	619291	895817	592977
Private Sector	126(5)	225916	650632	876548	713708	113(5)	276526	619291	895817	592977
Andhra Pradesh	30(3)	57874	19190	77064	24389	22(2)	38777	20559	59336	20868
Anantapur	5	80	5940	6020	4685	4	-	5279	5279	4416
Kurnool	25(3)	57794	13250	71044	19704	18(2)	38777	15280	54057	16452
Bihar	1	2235	-	2235	380	1	2948	-	2948	536
Munger	1	2235	-	2235	380	1	2948	-	2948	536
Chhattisgarh	3	128	-	128	32	-	-	-	-	-

Kanker	3	128	-	128	32	-	-	-	-	-
Gujarat	1(1)	2660	-	2660	396	1	2316	-	2316	289
Sabarkantha	1	2360	-	2360	354	1	2316	-	2316	289
Vadodara	(1)	300	-	300	42	-	-	-	-	-
Rajasthan	58(1)	107760	539931	647691	529722	54(3)	184964	480037	665001	411338
Banswara	1	4850	-	4850	485	1	1280	-	1280	134
Bhilwara	8	49893	166664	216557	35256	5(2)	62408	171674	234082	139808
Dausa	1	1311	-	1311	328	1	424	-	424	85
Dungarpur	7	3708	37529	41237	25038	6	11995	31407	43402	21645
Jaipur	1	-	6631	6631	3846	1	-	4590	4590	2600
Karauli	2	474	3451	3925	3309	2	650	4200	4850	5203
Rajsamand	7	7833	10657	18490	6664	7	5465	10901	16366	6208
Udaipur	31(1)	39691	314999	354690	354690	31(1)	102742	257265	360007	235655
Tamil Nadu	1	1000	-	1000	200	1	1295	-	1295	259
Coimbatore	1	1000	-	1000	206	1	1295	-	1295	259
Uttarakhand	32	54259	91511	145770	158589	34	46226	118695	164921	159687
Almora	-	-	-	-	-	1	-	2705	2705	1921
Bageshwar	26	50359	84828	135187	152426	24	43276	102479	145755	146598
Pithoragarh	6	3900	6683	10583	6127	9	2950	13511	16461	11168

**Source: Mineral Year Book-2011*

The world production of talc is estimated at 7.4 million tons in 2010. Principal producing countries were China (27%), followed by India (11%), Brazil (8%) and Finland & USA (7% each). While looking at the consumption of Soapstone in various industries, as reported above, we find that Plastic industry is the largest user of this mineral.

With our experience we reach at the conclusion that Rajasthan is the hub of talc activity in India. The mineral of this region is of good quality and it is having potential to earn revenue for the nation. Also, it is a labor oriented industry and is having vast scope of employment of local populace where no alternate means of livelihood are available.

(iv) **Demand– Supply Gap:** There are sufficient reserves of Soapstone in Country/Rajasthan, which can meet the domestic demand.

(v) **Imports vs. Indigenous production**: Imports of steatite increased to 10,016 tons in 2010-11 from 2,489 tons in the previous year. Out of total steatite imported in 2010-11, steatite lumps were 6,594 tones and steatite powder & others 3,492 tones. Steatite blocks imports were nominal at 1 tone. Steatite in different form was

imported mainly from Pakistan (72%) China (19%), Norway (2%) and Italy & Japan (1% each).

(vi) **Export Possibility**: Sufficient Reserves are available for export market.

(vii)**Domestic/export markets**: Exports of steatite increased to 113,411 tons in 2010-11 from 87,870 tons in the previous year. Out of total steatite exported in 2010-11, steatite blocks constituted 4,122 tons, steatite lumps 9,674 tons and steatite powder & others 99,615 tons. Steatite in different forms was exported mainly to Thailand (15%), China (14%) UAE (11%), Japan (7%) and Nepal, Nigeria & Philippines (4% each).

(viii)Employment Generation (Direct and Indirect) due to the project:

The managerial supervisory staff will be employed on merit basis and workers will be employed from local village.

1. Managerial & Supervisory Staff- 03Nos.
2. Skilled, Semi Skilled, Unskilled workers- 06 + 18 Nos.

   Total persons engaged in the mining operation are 27Nos.

3. PROJECT DESCRIPTION:

(i) Type of project including interlinked and interdependent projects, if any.

This is a Soapstone mining project located at village Devpura, Tehsil Sarada, District Udaipur. The mining lease was granted under Major Mineral Concession Rules, 1960. As per notification from Ministry of Environment & Forest, New Delhi dated 14.9.2006, it is mandatory to obtained environmental clearance of all mining project of mining. As per the notification the project falls in 'A' category because it attracts the general condition and involves forest land.

(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates.

The mining lease area falls in Survey of India Topo sheet No. 45 H/15 and having latitude 24°17' 22" N to 24°17' 51"N and Longitudes 73°46' 30 "E to 73°48' 7.8 "E.

The mining lease area is approachable by road from Udaipur via Palodra which is about 45 km south east of Udaipur on Udaipur-Banswara State Highway. A tar road about 6 kms from Palodra to the west leads to the mines via Devpura village. Location map is enclosed as **annexure no.8**

(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

Mining of Soapstone is site specific project and it cannot be shifted to one place to another due to availability of mineral resource.

(iv) Size or magnitude of operation.

The proposed production capacity of mineral Soapstone is 30,000 TPA.

Geology

Regional Geology

The rock type exposed in the region includes quartzite, quartz schist and gneiss representing meta-sediments of Debari Group of Archaean Age. These rocks have been intruded by ultra-basics represented in the region by occurrence of chlorite schist that forms lenses of varying thickness in quartz schist and quartzite.

Table: -2 Aravalli Super–Group of Indian Stratigraphy

Group	Lithology
Alwar Group	Quartzite, conglomerate, amphibolite, mica-schist & Arkosic quartzite.
Railo Group	Marble, limestone, conglomerate, quartzite & soapstone deposit
Unconformity	
Debari Group	Quartzite & soapstone deposit of Sarada inlier, feldspathic quartzite & chlorite schist.
Unconformity	
Banded Gneissic Complex (BGC)	

Local Geology

Lithological sequence as established by the Geologists of the Company after extensive field studies is as under:

Alluvium/Soil

Quartz vein

Chlorite Schist/Talc-Chlorite Schist:

(Intrusive and metamorphosed Ultra-basic giving Talc deposit after alteration)

Quartzite

----------Unconformity----------

Banded Gneissic Complex (not exposed in the lease area)

The area being hilly terrain, the major part of soil has been washed away. The rocks strike N-S to NNW-SSE with dip of 65^0 to 80^0 due west. During field studies, it has been found that a type of metamorphic zone is formed.

Soapstone Mineralization

Soapstone in Devpura lease is platy in nature. It occurs in the association of quartzite and occasionally of chlorite schist as lode or stringers of varying thickness, running parallel to sub-parallel to the strike of rock formation with a little swing in strike at places. The general strike of the vein is N 20^0 W–S 20^0 E dipping westerly at an angle of 65^0 to 80^0. In mineral zone, the veins generally show pinching and swelling behavior or joining of stringers. The veins also show disappearing and reappearing nature in the area forming an en-echelon pattern of deposit that may be mistaken for pocket type of deposit. More details have been furnished in forth-coming paras where geological reserves and exploration are described.

A mineral bearing lode is generally separated by erratically distributed siliceous quartzite and Bhuria (local name which is actually a transitional rock in between talc and dolomite). This fact indicates that the width of the mineral body for complete exposure in the area cannot be considered 100%. Hence, the cumulative width of well-defined mineral body is considered for reserve calculation. In underground working the length and average width of mineral is 76m and 3m respectively. Samples of different grades have been collected from the mines and analyzed chemically.

Table: -3 Minable & Geological Reserves as per UNFC Classification

Classification	Code	Quantity (MT)	Grade
Total Geological Resource		**893537**	
Total Minable Reserves		**846325**	
(A) Mineral Reserve			Other then Insecticide (Filler Grade) is 70% & Insecticide (Filler Grade) is 30%.
1. Proved Mineral Reserve	111	**726398**	
2. Probable Mineral Reserve	122	**119927**	
(B) Remaining Resource			
1. Feasibility Mineral Resource	211	**22208**	
2. Pre feasible Mineral Resource	221& 222	**25004**	
3. Measured Mineral Resource	331		
4. Indicated Mineral Resource	332		
5. Inferred Mineral Resource	333		
6. Reconnaissance Mineral Resource	334		

Life of Mine = Total Minable Reserves / Production

= 846325/ 27000 = **31.34 Years**

The year wise development of mines for the first five year will progress as per the table below:-

Table: - 5 Total Proposed Development Pit No.5 (Opencast & Underground)

Year	Mineral (MT)	Over Burden	
		(MT)	(m^3)
I Year	435	9678	4839
II Year	571	12369	6184
III Year	689	16421	8210
IV Year	26899	23870	11935
V Year	26841	28853	14426
Total	**55435**	**91191**	**45595**

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given).

Method for Developing and Working the Deposits:

The mining is done by both Open Cast and Underground Semi-mechanized method. The working of mine as per the Mining Plan is as follows:

a) The deposit of the area is of vein type where the different veins of varying thickness are available. Generally, the mineral bodies are elongated and exposed oblique to the trend of high hills dipping inside the rising hills. The main mineral body is exposed at the slope of the lease area.

b) From the last 10 years, Pit No.2 and Pit No.5 has been worked by underground method of mining in which the mineral lode is followed and different levels of 3m x 3m galleries while leaving 15m parting as mentioned previously are developed.

c) The first five year plan, opencast working proposed at Pit No. 5 near adit mouth. The same will continue in future also and accordingly, the present proposals have also been made. The operation will be manual.

d) The height and width in opencast working pit will be 3 mts x 3 mts respectively with vertical slope angle.

e) The Quartzite in between veins is drilled by Jack-hammer operated by tractor compressor and blasted.

f) The short hole drilling and blasting is done where no mineral deposit exists and only waste is to be removed.

g) Jack hammers holes having length of 2/ to 5/, cartridges of 25 mm diameter (140 gram) are used. The depth of such hole varies from 1 to 1.5 m. depending on the height to be blasted with spacing of 1 m in the same row and in the adjoining rows depending upon the strata.

Layout Plan enclosed as **annexure no.9**

Table: - 6 Mechanization Extent of mechanization & mining machinery deployed:

S. No.	Name of Machinery	Nos.	Capacity/ Norm of Performance
1.	Jack hammers	04	For drilling of 32 mm short holes.
2.	Hoist	04	Three of 0.25 ton capacity driven by 10 HP and one of 1.00 ton capacity driven by 2 HP
3.	Tub Trolley	02	1 ton capacity
4.	Ventilation Fan	01	10 HP capacity
5.	Pump	03	10 HP, 5 HP & 3HP capacity
6.	Tipper	01	10 MT Capacity

7.	Water Tanker	01	10000 lit. Capacity.
8.	D.G. Set	01	82.5 KVA
9.	Electric Compressor	01	30 HP, 107 CFO
10.	Tractor Compressor	02	180 cfm of 42 & 50 HP
11.	Air Leg	02	-
12.	Stopper	01	-

Drilling and Blasting

The inter burden of quartzite, which is associated rocks of soapstone mineralization, has to be handled. Drilling and blasting is only required in associated rocks. In soapstone, mild blasting of short holes is required. In underground working the faces in levels will be advanced by drilling 8-10 holes each of 0.76m (2.5/) in wedge pattern by jackhammer and the same will be blasted in one round. In winzes 10-12 holes drilled in same pattern will be blasted. In raises only 6-8 holes drilled in same pattern will be blasted.

Similarly in opencast working Quartzite in between veins is drilled by Jack-hammer operated by tractor compressor and blasted. The short hole drilling and blasting is done where no mineral deposit exists and only waste is to be removed. Jack hammers holes having length of 2/ to 5/, cartridges of 25 mm diameter (140 gram) are used. The depth of such hole varies from 1 to 1.5 m. depending on the height to be blasted with spacing of 1m. in the same row and in the adjoining rows depending upon the strata.

For Jack-hammer holes having length of 2/ to 5/, cartridges of 25 mm diameter (140 gram) are used and as primer and ANFO is filled up to 2/3 length of hole. In Jack-hammer holes, only safety fuse with ordinary detonators and 400 grams to 600 grams ANFO are used to ignite 25 mm diameter explosive cartridge.

Charge per Hole:

A hole of 32mm in diameter and of (8/)-depth will be charged with two numbers of high explosives cartridges of 25mm (each of 125 grams in weight). The remaining empty portion of the hole is filled up with the Inert Stemming Material.

Blasting Pattern / Charge per Delay:

All the holes are drilled in wedge cut fashion and blasted by delay detonator/safety fuse.

Maximum number of holes blasted in a round:

8 to 10 holes of 32m in diameter will be blasted in a round in which will yield 3m x 3m x 0.60 m x 2.7 = 15mts of waste or mineral.

Manner and Sequence of Firing:

All the holes of one round will be blasted electrically or by safety fuse.

Type of Explosives used/to be used:

Safety fuse and electrical detonators are being used and will be used in future also.

Powder factor in mineral and overburden/waste/ development heading/stop

In soapstone in one round of 8 holes of will yield around 15mt of mineral. The explosive consumption will be 8 x 2 x 0.125 gm. (=2Kg). Thus the powder factor will be 15/2 =7.5 Tones/Kg. However, in case of barren cutting the powder factor will reduce to some extent depending upon the hardness of the rock.

Whether secondary blasting is needed, if so describe it briefly

The quartzite is hard in nature. Secondary blasting will be required and for this drilling would be done by Jack Hammers.

Storage of Explosives (Like capacity and type of explosive magazine)

The company has licensed magazine and ANFO mixing shed installed at other mines of the concern.

Magazine

Type: ZZ type

Capacity: 100 Kg of high explosive

License: E/NC/RJ/22/236(E9910)

Storage of Fuel

Capacity: 24 KL of HSD

License No.: P/HQ/RJ/15/543 (P5296)

Loading

Loading of Soapstone mineral rejects is being done by loading machines. Mine reject will be disposed to OB dump area. Hired truck / dumpers will be used for transportation of mineral rejects from mine site.

(vi) Raw material required along with estimated quantity, likely source, marketing area of final products, Mode of transport of raw Material and Finished Products.

Soapstone is itself a raw material for processing units. It is transported through trucks/ dumpers from mine site to the processing plants.

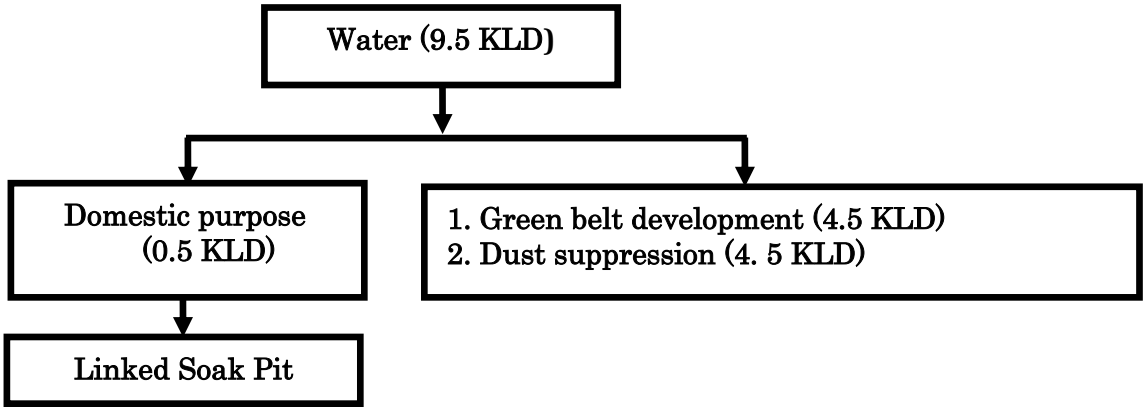
(vii) Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.

Minerals are depleting asset once mined; they cannot be replenished like agriculture, vegetation thus a scientific approach will be taken up in exploitation of mineral with systematic method. Thus, resource optimization/ recycling and reuse are not envisaged in this project.

(viii)Availability of water its source, Energy/power requirement and source should be given.

The daily water required at the mine for drinking and domestic purpose which is being met from dug well located near lease area. The water for other purpose will be obtained from sump as developed in the excavation zone of the mine area.

Water balance Chart: Water balance chart on per day basis as under:-



Power Supply: The electricity is required for office work only, which will be met from AVVNL.

ix) Quantity of wastes to be generated (liquid and solid) and scheme for their Management/disposal.

Solid Waste Generation

Mining area generally characterized by the outcrops of quartzite and chlorite schist. Quartzite is being excavated as inter burden and over burden and it is hard in nature. No mineral rejects are generated in Soapstone mining. Presently dumping has been done at two different earmarked sites at the front of pit No. 2 & 5 along the hill slop. The total capacity of these dumping area is 280000 m^3 already 62315 m^3 capacity has been used. Balanced capacity of dumping site as on 31.03.2012 is 217685 m^3 of waste. During ultimate life of the mine from 31.3.2012 total 187191 MT of waste is likely to be removed requiring 93595 m^3 space.

Waste Management

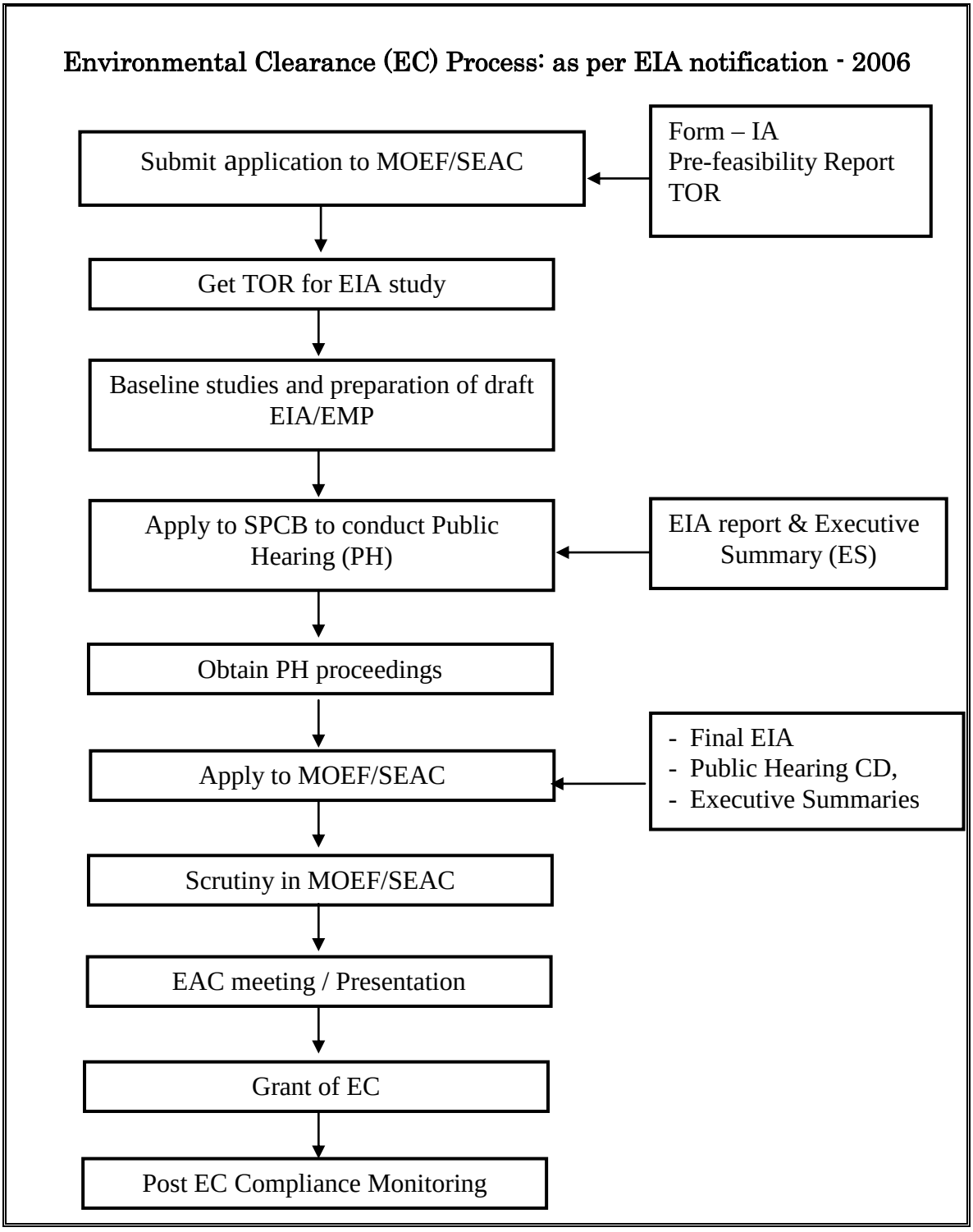
The waste will be dumped on barren land and. Retaining wall will be made on the toe side to prevent spreading of the waste material from the dump.

Liquid Effluent

No liquid effluent is generated from the mine during mining operation.

(x) Schematic representations of the feasibility drawing which give information of EIA purpose.

As per the Environment Impact Assessment (EIA) notification dated 14th Sept. 2006, the proposal for renewal of mining lease falls under category 1 (a) A. The EIA report is required to get environmental clearance for the project from the MoEF. The baseline studies will be undertaken as per Schematic Diagram.



4. SITE ANALYSIS:

(i) Connectivity:

The mining lease area is approachable by road from Udaipur via Palodra which is about 45 km south east of Udaipur on Udaipur-Banswara State Highway. A tar road about 6 kms from Palodra to the west leads to the mines via Devpura village.

(ii) **Land Form, Land use and Land ownership.**

Table: - 7 land covers under the mining lease area.

Area in ha	Land use		Type of land
	Area	LU-Class	
17.83	17.83	Forest Land (Dingri Forest)	Diversified Forest Land

(iii) **Topography (along with map):**

Area of Devpura Soapstone Mine falls in Survey of India Topo-sheet No. 45 H/15. The lease area is confined in an elevated hill which is trending north-south. Only one nalla though of little significance is flowing from south to north seasonally for very short period in the area, as the gradient is very high. This nalla has water flow during rainy reason only for a very short period and is tribute by nearby radial drainage on the slope of the hills. The nalla finally merges with river Tiri that is flowing about one kilometer away from the Lease. The drainage is typically radial type which is characteristic of high ridges. The highest mRL of 690 m is recorded exactly near pillar E-4 whereas the lowest mRL of 455 m is recorded near pillar E-5.

There is negligible quantity topsoil in the area as the mining area is mostly characterized by the outcrops of Quartzite and chlorite schist. In spite of the fact that the area is falling in Dingri Reserve Forest, the population of plants is very thin.

(iv) **Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.**

Detail of the land use derived from the Census of India and mention in table no. 8.

Table: - 8 Details of the land use within a 10 km Buffer zone as under:-

District	village	Forest land(ha)	Total Irrigated Area (ha)	Unirrigation area (ha)	Culturable wasteland (ha)	Non-cultivated area(ha)
Udaipur	Jawar	0	80	94	1329.25	28
Udaipur	Pratappura	0	37	28	40	77.6
Udaipur	Khori Mahuri	19	9	107	89	738
Udaipur	Bagruwa	926	13	116	405	179
Udaipur	Chanawada	1228	36	203	286	222
Udaipur	Nala Phala	40	20	30	47	100
Udaipur	Bhariya	0	26.29	32.2	166	109
Udaipur	Kanpur	0	82	116	21	50
Udaipur	Relan	12	18	68	16	355
Udaipur	Padla	1090	80	138	70	534
Udaipur	Ajbara	0	35	188	385	131
Udaipur	Adwas	1257	84	290	173	439
Udaipur	Deopura	392	49	175	118	675
Udaipur	Palodra	315	102	102	23	326
Udaipur	Mahuwara	0	30	70	68	30
Udaipur	Mahuwara	0	69	77	255	203
Udaipur	Amarpura	0	66	9	54	125
Udaipur	Dhawadiya	12	39	42	107	254
Udaipur	Bobas	0	41	104	98	117
Udaipur	Peeladhar	415	73	44	20	164
Udaipur	Khakhariya	1	18.48	30	185	11
Udaipur	Khar	45	6	53	114	419
Udaipur	Sarsiya	0	63	145	238	359
Udaipur	Batuka	0	186	79	141	67.23
Udaipur	Kherki	3	58	45	0	890
Udaipur	Kareli	0	13	22	30	23
Udaipur	Thana	86	33	353	42	16
Udaipur	Kheri	31.36	88	230	160.66	425

It reveals that only 6.59% area is irrigated land and 13.55% is un-irrigated area. The percentage of culturable waste land and area not available for cultivation are 21.21 and 32.03 respectively. The forest land is 26.61% of the total buffer zone. The map showing 10 km radius buffer zone is enclosed as **annexure no. 10**

(v) **Existing Infrastructure:** Office building is erected for records keeping in which different compartments like manager's office, time office, mine planning & quality control cell, central stores etc. and a well-equipped first aid facility will be made available at office and rest shelters for operational workers will be made available.

There is no prime requirement of power in the mining operation. However for domestic use electric connection is available at the site.

(vi) Soil classification:

There is negligible quantity of topsoil in the area as the mining area is mostly comprises of the outcrops of Quartzite and chlorite schist. Wherever top soil is available; the same will be scrapped and used at the site for plantation immediately the purpose is to preserve the humus content of the soil to get better survival of the plants under this situation, no storage is required.

(vii) Climatic data from secondary sources:

Tropical climate condition exists in the area. The summer season extends from April to June and is little hot. The average temperature in summers falls between 28.8°C to 38.3°C. The winter season lasts from October to February and weather in the winters is pretty cool. The temperature averages around 11.6°C to 28.3°C. The monsoon season falls during the months of June to August. As far as climatic conditions of the study area in monsoon are concerned, rainfall averages around 606.61 mm. (by adapting past 13 year Rainfall Data)

Table: - 9 Annual Rainfall Recorded at Sarada Station.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Rainfall(mm)	475	267	428	539	698	1155	410	617	533	600	708	714	742

Source: Water resource department, Govt. of Rajasthan

(viii)Social Infrastructure available:

There is no village within the lease area. The villages lying within the radius of 10 km. around the mining lease are shown in Column 5 (ii). The proposed project near to village -Devpura, Tehsil –Sarada and District Udaipur. Devpura is an organized village having all the social and basic civic amenities.

Educational Facilities: Government Sr. Secondary School is available at Devpura village.

Medical Facilities: Primary Health Center is available at village Devpura. Vehicles are provided to villagers in emergency situation.

5. PLANNING BRIEF:

(i) Planning Concept (type of industries, facilities, transportation etc) Town and Country Planning/Development authority Classification.

The existing rate of production including opencast and underground workings will be 30,000 Tons per annum. At the end of fifth year the mine will be fully developed and the rate of production will be continued for coming years. The total mineable reserves are 846325 MT. Assuming no increase in production as proposed above then mineral reserve will be available for 31 years. It is a semi mechanized mine deploying heavy earth moving equipment, blasting and drilling and other machinery used for mining purpose. Exploration through core drilling has already done within the lease area to explore additional mineral bed by which substantial quantity of reserves has increased. The reserve will further increase while exploration in the unexplored part of the lease area through which anticipated life of the mine increase.

The mining will be carried out by both underground and opencast semi-mechanized method. The open cast method will be followed by forming suitable benches having height of 3 mts & width of 3 mts with ultimate slope angle will be taken as 45^0 in mineral bed while in case of overburden dumps the height and width will be taken as 10mts × 10 mts. with angle of 45^0.

(ii) Population Projection.

The population data based on 2001 census; according to this census population distribution detail of the 10 ha buffer zone area is shows that total population is 40,991 and number of households are 7609. The village wise detail of population projection is given in tabular format.

Table: - 10 Populations within 10 km Buffer zone from core zone

District	village	Area of Village (ha)	No. of Households	Total Population	male	female
Udaipur	Jawar	1531	545	3046	1599	1447
Udaipur	Pratappura	183	153	742	381	361

Udaipur	Khori Mahuri	962	258	1415	718	697
Udaipur	Bagruwa	1639	260	1390	703	687
Udaipur	Chanawada	1975	698	4044	2068	1976
Udaipur	Nala Phala	237	138	663	338	325
Udaipur	Bhariya	333	124	553	247	306
Udaipur	Kanpur	269	125	866	425	441
Udaipur	Relan	469	168	921	487	434
Udaipur	Padla	1912	349	2103	1074	1029
Udaipur	Ajbara	739	228	977	454	523
Udaipur	Adwas	2243	672	3,405	1,664	1,741
Udaipur	Deopura	1409	677	3651	1862	1789
Udaipur	Palodra	868	395	2162	1104	1058
Udaipur	Mahuwara	198	63	387	196	191
Udaipur	Mahuwara	604	286	1479	760	719
Udaipur	Amarpura	254	210	1,038	527	511
Udaipur	Dhawadiya	454	170	878	434	444
Udaipur	Bobas	360	173	1065	548	517
Udaipur	Peeladhar	716	213	1024	512	512
Udaipur	Khakhariya	245.48	86	485	233	252
Udaipur	Khar	637	183	1107	547	560
Udaipur	Sarsiya	805	361	1993	1016	977
Udaipur	Batuka	473.23	222	1,233	624	609
Udaipur	Kherki	996	234	1351	672	679
Udaipur	Kareli	88	85	445	229	216
Udaipur	Thana	530	215	1049	544	505
Udaipur	Kheri	875	318	1519	790	729

Source: -Census India 2001

Out of total population, 50.64% are male and 49.36% are female. The percentage of Schedule Cast is 4.02% and 68.18% of Scheduled Tribes.

(iii) Present Land use planning (break up along with green belt etc.).

Table: - 11 Land use Planning

S. No	Item	Present in Ha	Next 5 years proposal in ha	Till life of the mine in ha.	Post Mining
1.	Pits & Quarry (Open Cast)	2.062	2.1435	3.501	Rain Water Collection Pond
2.	(Under Ground)	1.874	1.874	1.874	
3.	**Total**	**3.936**	**4.0175**	**5.375**	
4.	Storing Mineral	0.02	0.02	0.05	Plantation
5.	Dumps	4.796	5.296	7.096	
6.	Office/Magazine/	0.05	0.05	0.05	For villagers uses
7.	Storing Machinery	0.05	0.05	0.05	
8.	Road	0.724	0.724	0.724	Plantation
9.	Plantation	1.4	2.40	4.485	
	SUB Total	**10.976**	**12.57**	**17.83**	**17.83**
	Un used land	6.854	5.27	0	
	TOTAL AREA	**17.83**	**17.83**	**17.83**	

(iv) **Assessment of Infrastructure Demand (Physical & Social):**

1. **Physical**

   Social: Health infrastructure in the villages is assessed to be moderate.

2. **Social**

   - The PP proposes financial aid in Government school.
   - Ambulance facilities.
   - Community Development with the aim of building a nursery of plant species and Flowers in the study area for income generating activities

(v) **Amenities/Facilities:**

The mine site office, first aid room & rest shelter are existing in the lease area. Workers are provided with rest shelters and except watchman, managerial staffs have housing facility and no houses are provided to the workers as they all are deployed from nearby villages. Clean drinking water is provided. The toilets are provided separately for males and females.

6. PROPOSED INFRASTRUCTU0RE:

Infrastructure is already available for Soapstone- 30,000 Tons per annum these are given below:

- Road Network – two way road along the mine.
- Power transmission – power transmission line installed through AVVNL.
- Internal roads within mine boundary
- Office buildings
- No infrastructure is proposed.

(i) **Industrial Area (Processing area):**

No processing unit is required; Mineral will be directly transported to the processing units.

(ii) **Residential Area (Non Processing Area):**

No residential colonies are existing in the lease area as the workers are deployed from nearby villages that will commute to the lease area.

(iii) Green Belt:

Plantation is being carried out as per the guidelines of CPCB to develop green belt in and around the project area Green belt development program will be made in successive phases depending upon the immediate need, priority, availability of land and sufficient ground water. The area available for plantation will be as follows:

a) Along the main haul road.
b) Along the lease periphery
c) On undisturbed areas
d) On waste dumps.

Table: - 12 Year wise programme of greenbelt development

S. No.	Year	No. of Plants	Area (ha.)	Types of plants
1.	Up to 2014-2015	1504	1.6	Neem, Ber, Vad, Gulmohar, Mango, Kanjari, Khakhara, etc.
2.	2015-2016	400	0.4	
3.	2016-2017	400	0.4	
4.	**Up to Plan Period Total**	**2304**	**2.4**	
5.	After Plan period up to life of mine	9696	9.955	
Grand Total		**12000**	**12.355**	

(iv) Social Infrastructure-

The CSR activities will be undertaken by the company. The company will carry out various activities for social welfare and upliftment by providing health care, safety, medical facility, education and training, employment to the local villagers public transportation and communication.

- Educational Facilities: Government Sr. Secondary School is available at Devpura village.
- Medical Facilities: Primary Health Center is available at village Devpura.

Employment of local inhabitants: Unskilled category labors will be given preference for employment. Socio-economic conditions of area generally improve due to mining activity create additional employment opportunity for local habitants. Socio-economic status of local populace also improves by social welfare activities will be undertaken by mine owners. Significant contributions will be made towards education, medical facilities and cultural aspects. Plantation done will improve environmental conditions in the area and aesthetic beauty of the area.

(v) Connectivity (Traffic and Transportation Road/Rail/Metro/Water ways etc). :

The lease area is well connected by rail, road etc. Details are given earlier.

(vi) Drinking Water management (Source & Supply of water):

Drinking water is obtained from one well is situated at either side of the river Tiri where our zonal office is situated. In this well the water table is at 305 mRL and rain water collected in the pit/sump will be utilized for dust suppression and green area development.

(vii) Sewerage System

Not applicable.

(viii)Industrial Waste Management:

There is no beneficiation required and no tailing is produced so there is no industrial waste management will be generated.

(ix) Solid Waste Management:

The waste generated in Soapstone mining is Quartzite and Chlorite Schist and this will be dumped on non-mineralized area by making terracing of 10 mts. × 10 mts. height and width respectively with final slope angle of 45° and retaining wall /rubble wall will be made at the toe side and plantation will be done on non-active dump.

(x) Power Requirement & Supply/source.

Energy: The electricity is required for office work purpose only and is being supplied from AVVNL.

Fuel Diesel: 240 liter/day diesel will be required and for this storage facility will be installed at the mine site.

7. REHABILITATION AND RESETTLEMENT (R & R PLAN):

Not applicable

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).

There is no hutment in the lease area. No human being displaced from the area so no person will be affected contrary local people will get job opportunity and better facilities.

8. PROJECT SCHEDULE & COST ESTIMATES:

(i) Likely date of start of construction and likely date of completion (Time schedule for the project to be given).

The mine was started in the year 1962 and the application for further renewal of mining lease application has been submitted to the competent authority and for this new M.L No. 229/2011 has already been given by the competent authority as per the rules and it is in force till date.

(ii) Estimated project cost along with analysis in terms of economic viability of the project.

The working by open cast, underground semi mechanized method involves the cost of removal of overburden, sorting of mineral, wages, fuel, consumables, spares and village development cost. The cost of per ton production involves a mining cost of Rs. 1456.00/- Ton.

Table: - 13 The cost parameters may be summed up as below:-

S. No.	Activity	Cost per Ton (Rs.)
1.	Mining	1049
2.	Quality segregation	
3.	Royalty and Taxes	280 + 4.33
4.	Over-head and other contingencies	123
Total		**1456/-**

(iii) Project Cost Estimation

Estimated Project Cost with the proposed production is 3.099 crore.

(A) Capital investment

Machinery & Tools	= Rs. 2, 90, 00, 000/-
Social fund & activities	= Rs. 6, 00, 000/-
EMP	= Rs. 10, 00, 000/-
Financial assurance	= Rs. 2, 90, 000/-
Miscellaneous	= Rs. 1, 00, 000/-
Total	**= Rs. 3.099 Cr.**

(B) Reoccurring Cost

Machinery & Tools (Maintenance)	= Rs 2, 50, 000/-
EMP (Per Year)	= Rs. 1, 50, 000/-
CSR	= Rs. 50, 000/-

(C) Operational cost-

The mineral Soapstone will be mined from the lease area and the cost of per ton of mining will be approx. Rs. 1338.08 /- per tonnes.

(D) Economic Viability

The anticipated cost of mining is Rs. 1456/- per ton. Average sale value is Rs. 1770/- per tonnes depending on its grade and quality. Hence the project will be viable.

9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS):

(i) **Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.**

Mining is a resource extracting industry and it has vast scope for the betterment of the lives of village people. The mining of Soapstone is itself a labor oriented business, people from nearby areas have main source of employment. Due to mining activity people of that region will get employment and apart from this other amenities will be provided which will be under the scope of mines owner thus, contributing in raising the living of people of that region.

- It aim is to provide additional employment to the local population of the proposed study area.
- The PP proposes financial aid in the village Government school.
- Provision of ambulance facility.
- Community Development with the aim of building a Nursery of plant species and flowers in the study area for income generating activities.

There are social benefits from the mining operations is that the Soapstone is an important structural and ornamental stone. Its commercial demand in cosmetics, papers & textiles and insecticide is due to indestructible and lasting rocks. The deposits of Soapstone in Udaipur Region are the prime reserves of high quality have the potential to export mineral in other countries to earn valuable foreign exchange for the nation therefore it is a viable mineral.

For M/s Dhartidhan Pvt. Ltd.
(Devpura Soapstone Mine)

Date: / 12/2014
Place: Udaipur

M. C. JAIN
(Nominated owner)