

INTRODUCTION

Lohagarh Soapstone-Calcite mine (area-115.24hect) was directly granted in favour of **Dr. M. S. Singhvi** Vide order no F-5(251) Khan/Group-2/83 dated 09/11/1983 and was registered on dated 27/08/1984 for 20 years. (27/06/1984 to 26/08/2004)

Department of Mines & Geology of Rajasthan approved inclusion of calcite beside soapstone of mining from this lease vide order no. 1795 on dated 18/06/2001.

The mining lease was first renewal granted vide order no. P.5(38)Khan/Group-02/02 dated 08/04/2008. (27/06/2004 to 26/08/2024)

The Mining Plan with progressive mine closure was approved vide order no. SME/UD-Cir/Mining Plan/Scheme/PTG/F-01/11/1329 dated 19/07/11.

The Environment Clearance was granted vide letter no. J-11015/117/2005-IAII (M) dated 29/06/2005.

The Mineral Dolomite was included by state Govt. vide letter no. Ni Kha Pratap/CC-2/P.1(1)6/2000/858 on dated 06/05/2016.

The lessee applied to the Govt. of Rajasthan for inclusion of mineral Dolomite, So the lessee is submitting Modification in mining plan With Progressive Mine Closure Plan is Submit under Rule 37F & Rule 37E (vi) of R.M.M.C.R., 1986 (Amended 2012).

Chapter 1: GENERAL

a.) Lessee's Name and Address:-

Dr. M. S. Singhvi

R/o- 172-A, Fatehpura, Sukhadiya Circle

Udaipur (Raj.)313001

Ph. No.- 0294-2418979, 91-9414160883(Mo.)

Email: - info@rajasthanbarytes.com

b.) Status of Lessee:- An Individual

c.) Mineral(s) which is/are included in the prospecting license (for fresh grant) – Nil.

d.) Mineral(s) which is/are included in the letter of Intent/lease deed-

Soapstone, calcite & Dolomite

e.) Mineral(s) which lessee Intends to Mine:-

Soapstone, calcite & Dolomite

f.) Name and Address of the Recognized Person

Nimish Singhwi, *Mining Engineer & RQP*

Reg. No. RQP/ UDP/247/2003-A;

Renewed up to 24.07.2017

15, New Glass Factory Colony,

Sunderwas, Udaipur (Raj.)

Mobile No.: 94141-10360,

Phone no.-0294-2492060, Fax No.- 0294-2492060

Email: - nimesh.singhvi@gmail.com

2.0 LOCATION AND ACCESSIBILITY

a) **Details of the existing area:** The area under consideration has been shown in Plate No.1 of the Modification in Mining Plan. The lease area falls in G.T. sheet No. 46 I/5.

Name of mines: - Lohagarh Soapstone, calcite & Dolomite mine

Date of renewal of lease: - 27/06/2004.

Expiry date: - 26/08/2024

Existing land use pattern

Sr. No.	*All the areas are given in Hectares	A. G. Land	Waste Land	Total
1	Pits & Quarries	----	0.5130	0.5130
2	Top soil Dump	----	0.1647	0.1647
3	Dumps	----	3.6577	3.6577
4	Stack Yard	----	----	----
5	Sub Grade stack Yard	----	----	----
6	Infrastructure (Work shop, administrative Building)	----	0.0270	0.0270
7	Roads	0.4	2.3348	2.7348
8	Railway	----	----	----
9	Green Belt	10.3786	0.6843	11.0629
10	Tailing Pond	----	----	----
11	Effluent Treatment Plant	----	----	----
12	Mineral Separation Plant	----	----	----
13	Township	----	----	----
14	Non Utilized	4.3669	99.8102	104.1771
Total		14.7455	100.4945	115.24

Name of lease holder

Dr. M. S. Singhvi.

R/o- 172-A, Fatehpura, Sukhadiya Circle

Udaipur (Raj.)313001

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b) Details of lease area with location map:

Table no.1: Details of the area

Forest		Non- forest	
Forest (specify)	Area (ha)	Land Type	Area (ha)
Nil	Nil	(i) Govt. land	Nil
		(ii) Waste land	100.4945
		(iii) Grazing land	Nil
		(iv) Agriculture land	14.7455
		(v) Others (specify)	Nil

Total Lease area : 115.24 Hect.
 District & State : Pratapgarh & Rajasthan
 Taluka : Dhariyawad
 Village : Lohagarh
 Type of lease area : None Forest Land

Whether the area falls under Coastal Regulation Zone (CRZ):-

No area falls under Coastal Regulation Zone

Existence of public road/railway line etc.:-

The lease area is about 2.2Km southeast of Village Lohagarh, Tehsil-Dhariyawad, Dist.- Pratapgarh. The lease area is connected to village Lohagarh by kaccha Rasta.

0Toposheet No. with Descriptions report is following Table no. 2:-

Toposheet No. 46 I/5			
From	To	Bearing	Distance
FRP-262	A	50 ⁰ 00'	134.0m
A	B	320 ⁰ 00'	1720.0m
B	C	230 ⁰ 00'	670.0m
C	D	140 ⁰ 00'	1720.0m
D	A	50 ⁰ 00'	670m

FRP: - GTS -262.

(c) General location map showing area and access routes have been attached:-

(Attached plate No. 2)

Chapter 3: DETAILS OF APPROVED MINING PLAN

3.1 Date and reference of earlier approved Mining Plan/Scheme-

Sr. No.	Type of document & rule under	Approval letter no. & date
1.	Mining Plan with progressive mine closure plan.	682(23)(101)/2000MCCM (N) UDP dated 22/05/2001
2.	Modified Mining Plan with progressive mine closure plan	DMG/UD zone/ Modified Mining Plan/(Major)/F-39/4811 dated 16/12/2004
4.	Mining Plan with progressive mine closure plan	SME/UD-Cir/Mining Plan SLM/Major/F-03/05/2177-84 dated 28/10/2005
3.	Mining Scheme with progressive mine closure plan	SME/UD-Cir/Mining Plan/Scheme/PTG/F-01/11/1329 dated 19/07/11

3.2 Detail of last Modification if any (for the previous approved period) of approved MP/SOM, indicating date of approval, reason for medication.

No Modification was found in the approved Mining Plan.

3.3 Give review of earlier approved proposal (if any) in respect of exploration, Excavation, Reclamation etc...

3.3.1 Exploration:- five trenches are proposed in the approved Mining Plan in Block 1 to 3. and lessee had put five prospecting Trenches in the lease area.

Year	Proposed Pit/Trench	Size in M.			Actual
		L	W	D	
2011-2012 to 2015-2016	Trench- 1	5	2	2	<i>Five prospecting Trench has been made.</i>
	Trench -2	5	2	2	
	Trench- 3	5	2	2	
	Trench- 4	5	2	2	
	Trench -5	5	2	2	

3.3.2 Mine Development

It was proposed to develop old pit for mineral. Mining was carried out in the old pit.

3.3.3 Exploitation- The deviation is tabulated as follows:-

Year of working	Targeted Production (MT)			Achieved Production (MT)		
	Soapstone	calcite	Dolomite	Soapstone	calcite	Dolomite
2011-12	4945	3688	63009			
2012-13	8242	6147	105015			
2013-14	14177	10572	180626			
2014-15	15825	11801	201629			
2015-16	17144	12785	218431			
Total	60333	44993	768710			

3.3.4 Waste Management The proposal for dumping in the approved Mining Plan was in the lease area near existing pit.

3.3.5 Afforestation Programme- At present more plantation exists within the AG land. The lessee had proposed 1000 per year saplings.

3.3.6 Mine Reclamation & Rehabilitation

No Reclamation was proposed in the approved Mining plan and no Reclamation work was carried out.

3.4 Give status of Compliance Violations pointed out by IBM.

There are no violations under MCDR during last Five years.

3.5 Indicate and give details of any suspension/closure/prohibitory order issued by any Government agency under any rule or Court of law. –

No suspension/closure/prohibitory order issued by any Government agency under any rule or Court of law.

Part –A

Chapter 1: GEOLOGY AND EXPLORATION

The fieldwork comprising of topographical survey and geological mapping and data collection was done in phases. The contouring for the lease area was undertaken. The mineral & the other prominent features of the area were also marked.

a) Detail description of the topography, drainage pattern, vegetation, climate, and rainfall data:

Topography:- Topographically the lease area is low hilly and gently sloping towards eastern side. It comprises of mostly hilly fields within lease area. There is no forestland in this mining lease area. The altitude of the area is 196 to 260mRL. For the survey Pillar B' is considered 217mRL above MSL as Benchmark.

Drainage pattern:- The area having small Nalla originating within the lease area are on the western side of the lease & generally flow NE and eastward except two nalla one of the lease area flow SE and are roughly parallel. The general slope is eastern side. They are all seasonal Nalla flow only during rainy season. The canal was exists in the lease area.

Vegetation: - Practically no vegetation except some scanty bushes and shrubs of xerophitic nature could be seen within this lease area throughout the year.

Climate: - The climate in the area is dry with extreme temperature variation. Most of the rain falls during the period of July to September.

Rainfall data: - The average rainfall in this area is very low, and it hardly exceeds 600mm.

Given below are the prominent villages, with their aerial distance, which falls around this lease area.

Table no.3: Adjoining Villages (with aerial distances in Km)

<i>Direction from lease area</i>	<i>Name of village</i>	<i>Distance in km.</i>
Towards NW	Lohagarh	About 2.2 Km
Towards SE	Mahuri Khera	About 1.5 km
Towards S	Bharkundi	About 2.8 km
Towards SW	Ramtia	About 2.5 km
Towards NW	Madpur	About 3.4 km
Towards W	Amaiva	About 4.5 km

b) Regional Geology: The south Eastern Rajasthan is one of the geologically important terrains where rocks of Archean of Upper Proterozoic age are found. Archeans which are oldest rock formations are represented by rocks of Bhilwara Supergroup followed by Aravalli Supergroup of lower Proterozoic age and Delhi Supergroup of Lower to Middle Proterozoic age. The Upper Proterozoic Malani Igneous suite and Erinpura Granite follow the Delhi Supergroup rocks westwards. The generalized Geological Succession of south western Rajasthan is given below:

General Stratigraphic Succession of Rajsamand District

(Source: Director General, GSI)

	Post Delhi	Malani Igneous suite and Erinpura Granite Punagarh group Sirohi Group	
lower to Middle Proterozoic	Delhi Supergroup	Kumbhalgarh Group Gogunda Group Railo Group Lunavada group Jharol/Dovada/Nathdwara group	Calc-gneiss, Calc schist, Marble, Biotite Schist, Quartzite, Amphibolite Quartzite, Biotite Schist, Calc Biotite schist, Calc-gneiss
lower Proterozoic	Aravalli Supergroup	Bari Lake group Udaipur group Debari group	Dolomite, Phyllite, Quartzite Mica schist
Archean	Bhilwara Supergroup	Pur Banera/Rajpura Dariba group Berach Granite Hindoli group/Mangalwar Complex/Sandmata complex	

Local Geology: -

Recent			Soil/Alluvium
		Intrusive	Quartz vein
Archean	Aravalli Supergroup		Quartzite
		Debari Group	Dolomite
			Green Phyllite
			Brecciated Rock

Lithological distribution of the rocks:

1. Breccia Rock
2. Green Phyllite
3. Dolomite
4. Quartzite
5. Soapstone

d) Name of prospecting/exploration agency

Lessee himself

e) Details of prospecting/exploration already carried out**I. Details of old working pits in table no. 4:-**

Pit	Area (m ²)	Average Depth (m)	Results
Pit no. 1	2980	7	Soapstone & calcite
Pit no. 2	2150	10	
Pit no. 3	6 Trial pits (486m ²)	3	
Pit no. 4	12 trench	3	

(Old pits is shown on surface geological plan)

II. Number of boreholes indicating type (Core/RC/DTH), diameter, spacing, inclination, Collar level, depth etc... with standard bore-hole logs duly marking on

There is no borehole exist in the lease area.

III. Details of samples analysis indicating type of sample:**GRADE AND CHEMICAL PROPERTIES**

Grade and Chemical properties of mineral found in the lease area as follows:

GRADE

The mode of occurrence of mineral has imparted certain characteristics that have greatly enhanced the value of the deposit. The mineral occurs in mixed form & is separated at the surface. From economics point of view the mineral is of good quality, easily separable & free from objectionable materials.

CHEMICAL PROPERTIES

Mineral chemical report was enclosed as annexure.

IV. Expenditure incurred in various prospecting operations:

Prospecting pit	Trenches
1000 per trench	

f) The surface plan of the lease area may be prepared on a scale of 1:1000 or 1:2000 with contour interval of maximum of 10meter depending upon the topography and size of the area duly marked by grid lines showings all features indicated.

(Attached plate No. 3)

g) for preparation of geological plan, surface geological plan prepared on a scale of scale of 1:1000 or 1:2000 specify under Para 1.0(f) of part A of the format may be taken as the base plan. The detailed of the exploration already carried out along with supporting data for existence of mineral, locations proposed exploration, various lithounites with structural features, mineralized/Ore zone with grade variation if any may be marked on the geological plan along with other features indicated.

(Attached as plate No. 4)

h) Geological section may be prepared on natural scale of geological plan at suitable interval across the lease area from boundary to boundary:-

(Attached as plate No. 4)

i) Proposed Plan of Exploration- No Exploration was proposed during plan period.

j) Reserves and Resources as per UNFC with respect to the threshold value notified by IBM may be furnished in a tabular form as given below:

Mineral Reserves: (Mineral resources may be estimated purely based on level of exploration, with reference to the threshold value of minerals declared by IBM)

Level of Exploration	Reserves in MT			Grade
	Soapstone	Calcite	Dolomite	
G1-Detailed exploration	105840	63084	1182468	Medium grade
G2-General exploration	--	--	--	
G3- Prospecting	--	--	--	
G4- Reconnaissance	--	--	--	

k) Detailed Calculation of Reserves/Resources:-**Reserves Estimated in the previous Mining Plan****Updated Parameters of Reserve Calculation**

The waste generated previous Mining Plan was 20-40% and mineral was 1-3% Soapstone-calcite 40-50% Dolomite. However during mining has been observed that mineral recovery is 10% Soapstone-Calcite, 70% Dolomite and waste is 20%, So reserve is calculation is updated is follows:-

Reserves under the category 121

Block	Level in RL	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70% Dolomite	Mineral Reject from ROM 20% MT
Block-1	220-200	2625	20	52500	2.8	147000	0	14700	102900	29400
Block-2	220-200	18900	20	378000	2.8	1058400	105840	0	740880	211680
Block-3	220-200	8640	20	172800	2.8	483840	0	48384	338688	96768
Total						1689240	105840	63084	1182468	337848

Reserves under the category 122

Block	Level in RL	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70% Dolomite	Mineral Reject from ROM 20% MT
Block-1	220-200	2625	10	26250	2.8	73500	0	7350	51450	14700
Block-2	220-200	18900	10	189000	2.8	529200	52920	0	370440	105840
Block-3	220-200	8640	10	86400	2.8	241920	0	24192	169344	48384
Total						844620	52920	31542	591234	168924

Reserves under the category 333:

Block	Level in RL	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70% Dolomite	Mineral Reject from ROM 20% MT
Block-1	220-200	2625	10	26250	2.8	73500	0	7350	51450	14700
Block-2	220-200	18900	10	189000	2.8	529200	52920	0	370440	105840
Block-3	220-200	8640	10	86400	2.8	241920	0	24192	169344	48384
Total						844620	52920	31542	591234	168924

Depletion of Reserves

The amount of mineral already excavated as shown in the table for last five year

Year of working	Mineral already executed (MT)
2011-12	Nil
2012-13	Nil
2013-14	Nil
2014-15	Nil
2015-16	Nil
Total	

Balance Reserve

Mineral	Reserves in Tonnes			Total Reserves (in Tonnes)
	(121)	(122)	(333)	
Soapstone	105840	52920	52920	211680
Calcite	63084	31542	31542	126168
Dolomite	1182468	591234	591234	2364936
Total	1351392	675696	675696	2702784

l) Mineral Reserve / Resources:

Resources and Reserves within the lease may be arrived after applying results feasibility study and economic evaluation of deposit based on various factors such as:

a) Mining method, Recovery factor, mining losses, processing loss:-

The reserves of mineral have been estimated by surface area method. Structural behavior and the control of mineralization the physical limits of the ore bodies such as strike length, width & depth extension has been defined. Based on the experience and level of confidence gained at the time of previous excavation the estimated reserves have been classified into 121, 122 and 333 category. The area has been calculated from length multiplied by width. The area has then been multiplied by the depth of mineral and then multiplied by the bulk density. This gives us the geological reserves of ore.

b) Cut off grade, Ultimate pit depth proposed:-

The ultimate pit limit (as marked on plate no. 4) is been calculated by the help of the mineralized zone boundary. It has been marked considering the angle of repose as 45⁰.

c) Mineral/Ore blocked dues to benches:-

The statutory barrier is not considered as mineable separate reserve calculation is done. The reserve under statutory barrier has not taken into calculation.

Mineral Reserve as per UNFC Classification:-

Classification	Code	Quantity (MT)	Soapstone (MT)	Calcite (MT)	Dolomite (MT)
Total Mineral Resources (A+B)	----	2702784	211680	126168	2364936
A. Mineral Reserve	----	----	----		----
1.Proved Mineral	121	1351392	105840	63084	1182468
2.Probable Mineral	122	675696	52920	31542	591234
B. Remaining Resources		----	----		----
1 Feasibility Mineral Resource	221	----	----		----
2. Pre Feasibility Mineral Resource	222	----	----		----
3.Measured Mineral Resource	331	----	----		----
4.Indicated Mineral Resource	332	----	----		----
5. Inferred Mineral Resource	333	675696	52920	31542	591234
6. Reconnaissance Mineral Resource	334	----	----		----

Chapter 2: MINING

A. Open Cast Mining

a) Briefly describe the existing as well as proposed method for excavation with all design parameters indicating on plans /sections:-

Proposed Mining Method: - The mine shall be developed by Mechanized opencast Mining. The mineral is laying on the sub surface therefore Mechanized opencast Mining has been the obvious choice.

Bench Parameters shall be –

1. Height – 3-6m
2. Width - More than 3m or 6 times of the width of widest machine.

Overall slope – 45°

Gradient of the Haul Road: - 1 in 16 (ramps).

Width of the approach Road: - 6M

The mine shall be developing in five year shall be all side of the lease as shown in plate no. 6A-6E.

The Ultimate Size of the Pit at the end of life of mine: - 5.3606 Hect.

Ultimate Pit Depth: - 27m (217-190)

Ultimate Pit Slope:-45°

Amount of Yearly advance mined of faces:-

Year	2016-17		2017-18		2018-19			2019-20		2020-21		
Advance mined of faces	Block		Block		Block			Block		Block		
	2	1	2	1	2	1	3	2	3	1	2	3
	74m	31m	74m	54m	50m	33m	48m	65m	50m	25m	50m	42

Length of faces:-

Year	2016-17		2017-18		2018-19			2019-20		2020-21		
Length of faces	Block		Block		Block			Block		Block		
	2	1	2	1	2	1	3	2	3	1	2	3
	115m	122m	115m	220m	169m	198m	80m	178m	85m	226m	160m	150

Slop of faces- 65°

The main operation shall be digging, shorting and the transportation by trucks.

The Mineral trucks are to be loaded by Dumper.

Design parameters:- The mineral shall be first sorted out manually to remove the impurities associated with it. The sorted mineral shall be then carried to the temporary Stack Yard & then further loaded for onwards transportation by dumper to the factories & other parts of the state. The overburden shall also be dumped by excavator. Practically no drilling is done in soapstone bands.

DRILLING & BLASTING

The Blasting will be done by the authorized contractors on contractual Basis. These contractors have their own safety explosive container as well as Explosive License.

Broad Blasting Parameters

Length of Shot Holes	: 1.6 m
Diameter of Shot Holes	: 32 mm
Spacing	: 1 m
Burden	: 0.8 m
Stemming	: 30%

Type of Explosive

Special Gallatin, delay detonator, Safety

Charges per Hole & Powder Factor

1. Expected Powder Factor	: 4 Tonnes/kg of explosive
2. Quantity of Ore Broken Per Hole	: 3.24 Tonnes
= Depth x Burden x Spacing x Sp. Gravity	
= 1.5 x 0.8 x 1 x 2.8	
3. Explosive Required per Hole	: $3.36/4 = 0.84$ kg
Sp. Gel. Per Cartridge	: 0.25kg
A.N.F.O. per hole	: 0.59kg

Total Insitu rock to be blasted per year (max. for this period) 422145tones

No. of holes required in a year = $422145/3.36 = 125638$ hole

No. of holes required in a day (working of 300 days per year)

= $125638/300 =$ about 419hole

Amount of explosive required in a day = $419 \times 0.84 =$ about 352kg.

Storage of explosive The explosive shall be supplied by the authorised contractor at the blasting site at the time of blasting. The explosive shall be directly used so no storage of explosive is proposed.

Safety Precautions

1. During handling all care shall be taken that no inflammable elements should be there.
2. Only safety explosive container with explosive license shall be used for safe & secure transportation of explosive.
3. Efficient Siren will be blown prior to the blasting & after clearance of blasting.

(b) Indicate year-wise tentative Excavation in metric tonns indicating development, ROM, pit wise as in table no. 9:-

I. Insitu Tentative Excavation

Year	Block No.	Total tentative excavation (Tonnes)	Top soil (Tonnes)	OB/SB/IB (Tonnes)	ROM (Tonnes)			Ore/Waste Ratio	
					Ore in (Tonnes)		Mineral Reject (Tonnes)		
					Soapstone	Calcite			Dolomite
2016-2017	---	327513	6403	--	15930.5	8405	232552.5	64222	1:0.25
2017-2018	--	398558	9185	--	16772.2	9307.2	285419.8	77873.8	1:0.25
2018-2019	--	388260	1149	--	17872.2	10270	281546.4	77422.4	1:0.25
2019-2020	--	409079	9293	--	17976	11427.8	290425.6	79956.6	1:0.25
2020-2021	--	422145	9645	--	18000	12000	300000	82500	1:0.25
Total		1945555	35675	--	86550.9	51410	1389944.3	381974.8	1:0.25

Production for the five year Period

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Recoverable Production target (Tonnes)	256888	311499.2	309688.6	319829.4	330000
Soapstone	15930.5	16772.2	17872.2	17976	18000
Calcite	8405	9307.2	10270	11427.8	12000
Dolomite	232552.5	285419.8	281546.4	290425.6	300000

Mineral Reject: The excavated material that do not constitute useful material.

ROM: The material excavated from mineralized zone and includes mineral reject and useable mineral component.

OB: Means overburden capping waste.

SB: means side burden waste on both hang wall and foot wall sides of the ore body.

IB: means intermediate burden waste between two or more ore body.

II. Dump Re-handling (for the purpose of recovery of mineral):

Dump identification No.	Year wise handling (Cum)	Estimated Recovery of salable material (Cum)	Reject (Cum)
--	--	--	--
--	--	--	--
--	--	--	--
--	--	--	--
--	--	--	--

Not applicable

(c) Proposed year wise development for next five years

2016-2017- During this year of mining the lessee will excavate from the existing the Old pit 1 & 2 in Block-1 & 2. Two benches of Top-soil (RL 208-above & 208-above) and five benches (RL 208-Above, 208-202, 208-Above, 208-202& 202-196) in mineral shall be prepared. The bench height 3m shall be formed with a bench width of 6m. About 321110 MT of ROM shall be excavated. This will include 15930.5MT Soapstone, 8405MT & 232552.5MT Dolomite of recoverable mineral & 96871 MT wastes generated. The Top-soil shall be generated from Top-soil bench 6403 MT.

Bench wise Top-soil excavation

Block	At Section	Bench at R.L.	Length X Width (m ²)	Depth (m)	Total excavation In m ³	Sp. Gr. MT/m ³	overburden Tones
1	AA'XX'	208-above	3593	0.25	898	2.8	2515
2	BB'	208-above	5554	0.25	1388.5	2.8	3888
TOTAL							6403

Bench wise ROM excavation

Block	At Section	Bench at R.L.	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70-80% Dolomite	Mineral Reject in Tones
Block-1	AA'XX'	208-Above	4024	4	16096	2.8	45069	0	4507	31548	9014
	AA'XX'	208-202	2320	6	13920	2.8	38976	0	3898	27283	7795
Block-2	BB'	208-Above	5554	5	27770	2.8	77756	0	0	62205	15551
	BB'	208-202	6871	4	27484	2.8	76955	7695.5	0	53868.5	15391
	BB'	202-196	4902	6	29412	2.8	82354	8235	0	57648	16471
Total							321110	15930.5	8405	232552.5	64222

Total Mineral

Soapstone in Tones	15930.5
Calcite in Tones	8405
Dolomite in Tones	232552.5
Total in Tones	256888

2017-2018 - During this year of mining the lessee will excavate from the surface in Block- 1. Two benches of Top-soil (RL 208-above & 208-above) and five benches (RL 208-above, 208-202, 208-above, 208-202 & 202-196) in mineral shall be prepared. The bench height 3m shall be formed with a bench width of 6m. About 341476MT of ROM shall be excavated. This will include 11982.2MT Soapstone, 9307.2MT Calcite & 251891.8MT Dolomite of recoverable mineral & 95915 MT wastes generated. The Top-soil shall be generated from Top-soil bench 9185MT.

Bench wise Top-soil excavation

Block	At Section	Bench at R.L.	Length X Width (m ²)	Depth (m)	Total excavation In m ³	Sp. Gr. MT/m ³	overburden Tones
1	AA'/XX'	208-above	8670	0.25	2167.5	2.8	6069
2	BB'	208-above	4451	0.25	1113	2.8	3116
TOTAL							9185

Bench wise ROM excavation

Block	At Section	Bench at R.L.	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tonnes)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70-80% Dolomite	Mineral Reject in Tones
Block-1	AA'/XX'	208-above	8670	3.5	30345	2.8	84966	0	0	67973	16993
	AA'/XX'	208-202	5540	6	33240	2.8	93072	0	9307.2	65150.4	18614.4
Block-2	BB'	208-above	4451	3.5	15578.5	2.8	43620	0	0	34896	8724
	BB'	208-202	3840	6	23040	2.8	64512	6451.2	0	45158.4	12902.4
	BB'	202-196	3292	6	19752	2.8	55306	5531	0	38714	11061
Total							341476	11982.2	9307.2	251891.8	68294.8

Total Mineral

Soapstone in Tones	11982.2
Calcite in Tones	9307.2
Dolomite in Tones	251891.8
Total in Tones	273181.2

2018-2019 - During this year of mining the lessee will excavate from the surface in block-1 to 3. Two benches of Top-soil (RL 196-Above & 208-above) and seven benches (RL 202-196, 196-190, 196-Above, 208-Above, 208-200, 200-196 & 196-190) in mineral shall be prepared. The bench height 3m shall be formed with a bench width of 6m. About 387111 MT of ROM shall be excavated. This will include 17872.2MT Soapstone, 10270MT Calcite & 281546.4MT Dolomite of recoverable mineral & 77422.4MT wastes generated. The overburden shall be generated from Top-soil bench 1149MT.

Bench wise Top-soil excavation

Block	At Section	Bench at R.L.	Length X Width (m ²)	Depth (m)	Total excavation In m ³	Sp. Gr. MT/m ³	overburden Tones
3	LL'/CC'	196-Above	1017	0.25	254	2.8	712
2	BB'	208-Above	624	0.25	156	2.8	437
TOTAL							1149

Bench wise ROM excavation

Block	At Section	Bench at R.L.	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70-80% Dolomite	Mineral Reject in Tones
Block-1	AA'/XX'	202-196	6083	6	36498	2.8	102194	0	0	81755	20439
	AA'/XX'	196-190	2582.14	6	15493	2.8	43380	0	4338	30366	8676
Block-3	CC'/LL'	196-Above	3531	6	21186	2.8	59321	0	5932	41525	11864
Block-2	BB'	208-Above	624	2	1248	2.8	3494	0	0	2795	699
	BB'	208-200	2747	4.5	12361.5	2.8	34612	3461.2	0	24228.4	6922.4
	BB'	200-196	2575	6	15450	2.8	43260	4326	0	30282	8652
	BB'	196-190	6003	6	36018	2.8	100850	10085	0	70595	20170
Total							387111	17872.2	10270	281546.4	77422.4

Total Mineral

Soapstone in Tones	17872.2
Calcite in Tones	10270
Dolomite in Tones	281546.4
Total in Tones	309688.6

2019-2020 - During this year of mining the lessee will excavate from the surface in Block-1 to 3. Two benches of Top-soil (202-above & 208-above) & six benches (RL 202-Above, 202-196, 196-190, 208-Above & 208-202) in mineral shall be prepared. The bench height 3m shall be formed with a bench width of 6m. About 399786MT of ROM shall be excavated. This will include 17976MT Soapstone 11427.8MT Calcite & 290425.6MT Dolomite of recoverable mineral & 79956.6MT wastes generated. The overburden shall be generated from Top-soil bench 9293MT.

Bench wise Top-soil excavation

Block	At Section	Bench at R.L.	Length X Width (m ²)	Depth (m)	Total excavation In m ³	Sp. Gr. MT/m ³	overburden Tones
3	LL'	202-Above	2484	0.25	621	2.8	1739
2	YY'/BB'	208-Above	10791	0.25	2698	2.8	7554
TOTAL							9293

Bench wise ROM excavation

Block	At Section	Bench at R.L.	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tonnes)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70-80% Dolomite	Mineral Reject in Tones
Block-3	LL'	202-Above	2484	3	7452	2.8	20866	0	2087	14606	4173
	LL'	202-196	4110	6	24660	2.8	69048	0	6904.8	48333.6	13809.6
	LL'	196-190	1450	6	8700	2.8	24360	0	2436	17052	4872
Block-2	YY'/BB'	208-Above	10791	3.5	37768.5	2.8	105752	0	0	84602	21150
	YY'/BB'	208-202	10700	6	64200	2.8	179760	17976	0	125832	35952
Total							399786	17976	11427.8	290425.6	79956.6

Total Soapstone & Dolomite

Soapstone in Tones	17976
Calcite in Tones	11427.8
Dolomite in Tones	290425.6
Total in Tones	319829.4

2020-2021 - During this year of mining the lessee will excavate the surface in Block-1 to 3. Three benches of Top-soil (RL 208-above, 208-above & 202-196) & eight benches (RL 202-Above, 202-196, 196-190, 202-196, 196-190, 208-Above, 208-202 & 202-196) in mineral shall be prepared. The bench height 3m shall be formed with a bench width of 6m. About 412500MT of ROM shall be excavated. This will include 18000MT Soapstone, 12000MT Calcite & 300000MT Dolomite of recoverable mineral & 82500MT wastes generated. The overburden shall be generated from Top-soil bench 9645MT.

Bench wise Top-soil excavation

Block	At Section	Bench at R.L.	Length X Width (m ²)	Depth (m)	Total excavation In m ³	Sp. Gr. MT/m ³	overburden Tones
3	LL'	208-above	699	0.25	175	2.8	489
1	AA'/XX'	208-above	3568	0.25	892	2.8	2498
2	YY'/BB'	202-196	9512	0.25	2378	2.8	6658
TOTAL							9645

Bench wise ROM excavation

Block	At Section	Bench at R.L.	Area (m ²)	Depth (m)	Mineral Vol. (m ³)	Bulk Den. MT/m ³	Mineral (tones)	Recoverable mineral in Tones 10% Soapstone	Recoverable mineral in Tones 10% Calcite	Recoverable mineral in Tones 70-80% Dolomite	Mineral Reject in Tones
Block-3	LL'	202-Above	699	2	1398	2.8	3914	0	391.4	2739.8	782.8
	LL'	202-196	1380	6	8280	2.8	23184	0	2318.4	16228.8	4636.8
	LL'	196-190	5529.85	6	33179	2.8	92902	0	9290.2	65031.4	18580.4
Block-2	YY'/BB'	202-196	9512.2	6	57073.2	2.8	159805	15980.5	0	111863.5	31961
	YY'/BB'	196-190	1202.08	6	7212.5	2.8	20195	2019.5	0	14136.5	4039
Block-1	AA'/XX'	208-Above	3568	2.5	8920	2.8	24976	0	0	19981	4995
	AA'/XX'	208-202	3382	6	20292	2.8	56818	0	0	45454	11364
	AA'/XX'	202-196	1827.73	6	10966	2.8	30706	0	0	24565	6141
Total							412500	18000	12000	300000	82500

Total Soapstone & Dolomite

Soapstone in Tones	18000
Calcite in Tones	12000
Dolomite in Tones	300000
Total in Tones	330000

The production & waste generation can be summarized as:

Year	Block No.	Total tentative excavation (Tonnes)	Top soil (Tonnes)	OB/SB/IB (Tonnes)	ROM (Tonnes)				Ore/Waste Ratio
					Ore in (Tonnes)			Mineral Reject (Tonnes)	
					Soapstone	Calcite	Dolomite		
2016-2017	---	327513	6403	--	15930.5	8405	232552.5	64222	1:0.25
2017-2018	--	341476	9185	--	11982.2	9307.2	251891.8	68294.8	1:0.25
2018-2019	--	388260	1149	--	17872.2	10270	281546.4	77422.4	1:0.25
2019-2020	--	409079	9293	--	17976	11427.8	290425.6	79956.6	1:0.25
2020-2021	--	422145	9645	--	18000	12000	300000	82500	1:0.25
Total		1888473	35675	--	81760.9	51410	1356416.3	372395.8	1:0.25

Production for the five year Period

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Recoverable Production target (Tonnes)	256888	273181.2	309688.6	319829.4	330000
Soapstone	15930.5	11982.2	17872.2	17976	18000
Calcite	8405	9307.2	10270	11427.8	12000
Dolomite	232552.5	251891.8	281546.4	290425.6	300000

d) Salient features of working

The mining method shall be open cast Mechanized mining. The dolomite is the host rock for the soapstone. Mineralization of soapstone occurs in the form of thin stringer, veinlets and lences.

The production & development forecasted may vary depending upon the nature of mineralization, in particular continuity in strike, width & depth as the soapstone veins follow the pinching & swelling phenomenon.

The deposit of the area is a vein type where the different veins of varying thickness area available.

In the five year the working would be extended to systemize. The faces would be advanced in all the directions & depth wise for production as well as recovery. The benches shall be taken 3m height. Haul road & Bench to Bench ramp shall be made of 1 in 16 gradient & the width of the road shall be more than 6m. Soapstone handling will be done manually. The loading shall be done by manually in the dumper. This will help in better utilization of the resources and systematic development of the mine.

e) Describe briefly the layout of mine workings, pit road layout, the layout of faces and sites for disposal of overburden/waste along with ground preparation prior to disposal of waste, reject etc. A reference to the plans and sections may be given. UPL or ultimate size of the pit is to be shown for identification of the suitable dumping site.

The mining shall be done to make the mines safe and systematic with the required production. The Mining shall be started from pit 1 & 2. In next year the existing pit shall be advanced in Block-2 directions. The mine mineral shall be collected in the mineral stack yard and then sorted over their manually before its final dispatch to various industries through trucks. The waste generated shall be carried through trucks to the dump yard in the lease area. The Bench height shall 3-6m & bench width shall be more than the bench height.

Utilization of mineral:- The soapstone powder as per specification of the user industries/ consumer is prepared by blending different grade of soapstone brought / purchased from different mines. The quality of Soapstone is depends on the brightness whiteness of the ore, which can be increased or decreased by mixing of other grade of soapstone.

Waste Handling:-for the five year the waste generation is as follows table no.12:-

Sr. No.	Year	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1	Mineral Waste (MT)	64222	68294.8	77422.4	79956.6	82500	372395.8
2	Over burden (MT)	0	0	0	0	0	0
3	Total Waste (1+2) MT	64222	68294.8	77422.4	79956.6	82500	372395.8
4	In m ³	22936	24391	27651	28556	29464	132998
5	Swell volume in m ³	27523	29269	33181	34267	35357	159597

The waste generated shall be dumped as shown plate no. 5.

f) CONCEPTUAL MINING PLAN: -

f.i Proposal of Conceptual Plan

The Proposals of the Conceptual Closure are based on the Geology and Topography of the region. A part of the excavated region shall be converted into water reservoir after exhausting the complete available mineral. The

Lessee shall make water drains for the purpose. The surroundings of the proposed Water Reservoir would be fenced. Remaining part of the excavated region shall be backfilled and aforrestation shall be carried out over it. This shall also increase the aesthetic beauty of the area. The office and other buildings, the mine road and the other entire infrastructure developed by the Lessee shall be used by the local people as public buildings. The virgin region shall be used for agriculture purposes.

F.ii Land Degradation and Reclamation

(i) For the five year Land Degradation and Reclamation is as follows:-

Total Excavated Area	: 5.3606Hectares
Area to be Converted into Water Reservoir	: 5.3606Hectares
Area to be Reclaimed (near statutory barrier)	: --
Remaining Dump Area	: 1.6370Hectares

(ii) For the end of life the Land Degradation and Reclamation is as follows:-

Total Excavated Area	: 5.3606 Hectares
Area to be Converted into Water Reservoir	: 2.7735Hectares
Area to be Reclaimed	: 2.5871Hectares
Remaining Dump Area	: --

f.iii Rehabilitation

As no personnel are expected to be migrated due to mining in the lease area and the adjoining region is also having a good mineral potential, the rehabilitation of the employees is not going to be a problem. The workers and other staff can get job in the neighboring areas after the end of life of mine. The lessee shall also try for employment of the workers.

f.iv Plantation Proposals

The area falls in semi arid zone and there is a shortage of water so a large-scale plantation is not possible. The rains are also scanty hence it is essential that the sapling of plant should be such which required minimum water and hence it is proposed to plant 500 trees per year of the following:

S. No.	Year of Plantation	Target of Plantation	Assumed survival	Replenishment of Casualties	Total
1	First year	500	450	-	450
2	Second year	500	450	50	500
3	Third year	500	450	50	500
4	Fourth year	500	450	50	500
5	Fifth year	500	450	50	500

Eco-Friendly Mining Association and the Association shall also plants as their plan.

Schedule of plantation for the next five year

Place of proposed plantation: - The plantation shall be done at the following places:-

1. Nearby area of the School
2. At the Dump
3. At the govt. waste land provided by the Govt.
4. At Own Private Land
- 5 nearby State Highway road

g. Extent Of Mechanization- Initially Dumper will also arrange on hire basis. Later the lessee will go for own mechanization.

The mining method shall be open cast Mechanized mining.

(i) Drilling Machines-

Machine	No.	Make	HP/Capacity
Compressor	3	Local	75 CFM
Jack Hammer	4	Local	32mm
Water Pump	2	Local/Submersible	5-7.5HP

(ii) Loading Equipment

Type	Nos	Bucket Capacity in Cu. m.	Make	Motive Power	H.P.
hydraulic excavator (Hi-200)	3	1.2 m ³	Hitachi	Diesel	136HP

(iii) Haulage and Transport Equipment

a. Haulage within the Mining Lease hold

Type	Nos	Size Capacity	Make	Motive Power	H.P.
Dumper	8	20 tonner	Ashok Leyland	Diesel	75HP

Where the Dumpers are fitted with exhaust conditioner should be indicated

b. Transport from mine head to the destination

The mineral produced from the pit shall be first brought at a spot outside the pit by excavator, where it shall be sorted. The sorted mineral shall be then stacked separately. This mineral shall be then loaded into the trucks & Dumper by JCB for it's onwards transportation to the various grinding units at different destinations.

The waste rock produced shall be loaded by excavator & dumped by dumper for its transportation to the reject dump yard.

(iv) Miscellaneous Operations

a. Operations: - A Miscellaneous operations like maintenance of haul and access roads, dust suppression by water spraying field etc. shall be done.

b. Machineries Deployed

Type	NOS	Size Capacity	Make	Motive Power	H.P.
Water tanker with sprinkler arrangement with tractor	2	5000ltd.	Local	Diesel engine	

B. Underground Mines: Not Applicable.

Chapter 3: MINE DRAINAGE

a) Minimum and maximum depth of water table based on observations from nearby wells and water bodies

The Ground water table is 55m (in rainy season) to 65m (in Dry Season).

b) Indicate maximum and minimum depth of Workings

The working level in next five year is likely to reach 190mRL, so it is not likely to touch the Ground water table in dry season.

c) Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged:

There is scarce chance of this water entering into the Pits. If rainwater do get collected in pits and remain there for a considerable period of time, it takes about two to five months to percolate down the ground. Normally work at bottom of the pit remains suspended in the months following the rains. However, in case of necessity the water may be pumped out using two diesel engines driven pump of say 5-7.5 H.P. This water can be spilled in the water drain made for the proper drainage of the mine water outside the mining lease area.

d) Described regional and local drainage pattern also indicate annual rain fall, catchments area, and likely quantity of rain water to flow through the lease area:-

The drainage is represented small streams, which originate in the hills and are lost in summer as well as in the winter. The average rainfall in this area is very low, and it hardly exceeds 600mm. Seasonal water stream do pass through the lease area in which the water flows through natural gradient. It is capable of dealing with the rainwater during the rainy season.

Water availability in the region is very scare now a day so it is being proposed to discharge the water collected in to the pit during rains into other non working areas for positive use like agriculture etc.

Chapter 4. STACKING OF MINERAL REJECTS/SUB GRADE MATERIAL AND DISPOSAL OF WASTE

a) Indicate briefly the nature and quantity of Top soil, overburden / waste and Mineral Reject to be disposed off.

Overburden/ waste: - Overburden is lying over the mineral. During mineral mining intermix soil shall also generate.

Mineral Reject:-

The waste rocks found in the area is overburden over the Mineral bed & line rejects of sorting of intergrowth of soil with mineral. The thickness of mineral waste/OB varying is 0.5m. The Rock fragments of small size are also resulted after mining.

Year	Topsoil (MT)		Mineral Rejects (MT)			
	Reuse/spreading	Storage	Backfilling	Storage	Blending	Beneficiation
2016-2017	--	6403	--	64222	--	--
2017-2018	--	9185	--	77873.8	--	--
2018-2019	--	1149	--	77422.4	--	--
2019-2020	--	9293	--	79956.6	--	--
2020-2021	--	9645	--	82500	--	--

b) The proposed dumping ground within the lease area de proved for presence of absence of mineral and be outside the UPL unless simultaneous backfilling is proposed or purely temporary dumping for a short period is proposed in mineralized area with technical constraints & justification:

Selection of Waste Rock Dump Site

1. It is in the non-mineralized zone and outside the UPL.
2. The topography is favorable for dumping.
3. The area is sufficient for long-term use.

c) Disposal of waste, configuration and sequence of year wise build up of dumps along with the proposals for protective measure:

Table No.14: Waste generation

Sr. No.	Year	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1	Mineral Waste (MT)	64222	68294.8	77422.4	79956.6	82500	372395.8
2	Over burden (MT)	0	0	0	0	0	0
3	Total Waste (1+2) MT	64222	68294.8	77422.4	79956.6	82500	372395.8
4	In m ³	22936	24391	27651	28556	29464	132998
5	Swell volume in m ³	27523	29269	33181	34267	35357	159597

*Swell factor taken as 1.2

Stacking the Over burden OB is lying over the mineral. During mineral mining intermix soil shall also generate. It is proposed to stack the rejects produced from this mine temporarily at the sites shown in the plate's 6A-6E. Extent of area required in shown in following table no.15.

Table no.15: Extent of area for waste dump

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Total Area (m ²)	2752	2927	3318	3427	3536
Avg. height of Dump	10m	10m	10m	10m	10m

*Sloping profile of dump: - 37⁰

Size of OB Dump: 175m x 87m x 10m

Location: - Between Grids lines (1400N-1600N & 400W-600W).

Generation & Stacking of top soil:

It is also proposed to stack the topsoil (between Grid line 800N-1000N & 0E-200W) near the area where development of a 'Green Belt' has been proposed. This green belt is proposed near the lease boundary. A retaining wall shall be erected to protect wash out of the topsoil. The Topsoil Layer 0.2 m Thickness shall spread over the backfilled area for a forestation over it.

The Generation of soil from top layer is as follows table No. 16: -

Table No.16: Proposed top soil to be generation:

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Top Soil (MT)	6403	9185	1149	9293	9645
Top soil in m ³	2287	3280	410	3319	3445
Swell Volume in M ³	2744	3936	492	3983	4134
Total Area (m ²)	915	1312	164	1328	1378
Avg. height of Top Soil in meter	3	3	3	3	3

The Avg. Height shall be 3.0 m for the five-year. Size of Topsoil: 75m x 7m x 3m between Grid line 800N-1000N & 0E- 200W.

Chapter 5: USE OF MINERAL AND MINERAL REJECT

a) Describe briefly the requirement of end-use industry specification in term of physical & chemical composition:

The soapstone powder as per specification of the user industries/ consumer is prepared by blending different grade of soapstone brought / purchased from different mines. The quality of Soapstone is depends on the brightness whiteness of the ore, which can be increased or decreased by mixing of other grade of soapstone.

b) Brief requirement of intermediate industries involved in upgradation of mineral before its end-use:

Nil

c) Detail requirements for other industries, captive consumption, export, association industrial use etc:-

Nil

d) Indicated precise physical and chemicals specifications stipulated by buyers:-

Chemical Report was enclosed.

c) Detail of processes adopted to upgrade the ROM to suit the user requirements:-

Nil

Chapter 6: PROCESSING OF ROM AND MINERAL REJECT

- a) If processing / beneficiation of the ROM or Mineral Reject is planned to be conducted, briefly describe nature of processing / beneficiation. This may indicate size and grade of feed material and concentrate (finished marketable product), recovery etc.**

No mineral beneficiation processing will be required at mines for mineral. Impurities will be removed simply by hand picking. Besides this no other processing or beneficiation is required on proposed at the mine site

- b) Give a material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery, and its grade at each stage of processing.**

Not applicable

- c) Explain the disposal method for tailings or reject from the processing plant.**

Not Applicable

- d) Quantity and quality of tailings /reject proposed to be disposed, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailings dam.**

Not Applicable

- e) Specify quantity and type of chemicals if any to be used in the processing plant.**

No

- f) Specify quantity and type of chemicals to be stored on site / plant.**

No processing / beneficiation was proposed.

g) Indicate quantity (cum per day) of water required for mining and processing and sources of supply of water, disposal of water and extent of recycling. Water balance chart may be given.

No water shall be required for processing. Water shall be required in mining to cater for drinking purposes, dust suppressing at faces and on haul roads, and plantation. Total water requirement in the mine will be about 8.0-9.0KLD for drinking, spraying and plantation.

Chapter 7: OTHER

Describe briefly the following

a) Site Services

The Electric Power line was exists in the lease area. The nearby villages are electrified.

- **Water Supply**

Water is being supplied from a well near the mine. A small water tank is also proposed in the proposed mine office premises. This can be used for supply of water to mining work, spraying, watering the plants and drinking purposes.

- **First Aid**

Primary First aid facility is proposed at the proposed mine office.

- **Mine office**

Permanent mine office is proposed in the lease area.

- **Rest Shelter**

Permanent rest shelter is proposed.

- **Latrines and Urinals**

At the mine site urinal and latrine are proposed.

b) EMPLOYMENT POTENTIAL

The mine owner shall employ Mine official (Mines Manager, Forman) in accordance with the provision of the MMR 1961 & Mining engineer under MCDR 88. The workers to be employed shall be semi-skilled and unskilled. Most of them will come from the nearby villages. With the increase in the production additional man power shall be required. The Mechanized mining the organizational set up proposed is given below:-

High-Skilled	Mining Engineer	1 full time
	Geologist	1 Part time
	Mines Manager	1 full time
Semi-Skilled	Mines Mate/Mines Foreman	2 full time
	Skilled Labours/ Operators	25 full time
	Unskilled Labours	10 full time
unskilled	Watchmen	1 full time

CHAPTER 8.0 PROGRESSIVE MINE CLOSURE PLAN

8.1 Environment Base line information: Attach a note on the status of baseline

Information with regard to the following

The lease area is characterized by the typical topography having mild hilly land. The soil available in the area overlaying on the O/B & mineral is not good for farming/cultivation. The land use pattern is given in the following table

Table No.18: Existing Land use pattern within the Lease Area

Sr. No.	*All the areas are given in Hectares	A. G. Land	Waste Land	Total
1	Pits & Quarries	----	0.5130	0.5130
2	Top soil Dump	----	0.1647	0.1647
3	Dumps	----	3.6577	3.6577
4	Stack Yard	----	----	----
5	Sub Grade stack Yard	----	----	----
6	Infrastructure (Work shop, administrative Building)	----	0.0270	0.0270
7	Roads	0.4	2.3348	2.7348
8	Railway	----	----	----
9	Green Belt	10.3786	0.6843	11.0629
10	Tailing Pond	----	----	----
11	Effluent Treatment Plant	----	----	----
12	Mineral Separation Plant	----	----	----
13	Township	----	----	----
14	Non Utilized	4.3669	99.8102	104.1771
Total		14.7455	100.4945	115.24

8.1.1 Water regime and presence of water reservoir The average rainfall in the area is low it hardly exceeds 500 mm. The Ground water table is 55m (in rainy season) to 65m (in Dry Season). The nearest sources of drinking water are wells from where the potable water is fetched and stored.

8.1.2 Quality of Air, ambient noise level and water:-

No survey has been conducted of the preparation of Plan.

The quality of air could be said quite clean and natural, free from any harmful gases arising out of any industrial establishment/ complex including mining ventures. The area in and around the mine could be said free from any nuisance of repetitive nature such as noise. The source of noise generation will be the playing of machinery. Its magnitude will not be match to cause general arrogances. Thus, it is quite calm. Quality of ground water is free from pollution. Water is parable.

8.1.3 Flora & Fauna: -

There are 125 no. of tree & bushes exist in the lease area. No Fauna exist in the lease area.

8.1.4 Climatic condition

The climate in the area is Drag. The area experiences wide temperature variation of as high as 45°C in summer to as low as 6°C during the winter season. Strong wind blows during the summer season. The winds charge the atmosphere with the dust particles. The wind direction in general is usually NE - SW.

8.1.5 Human settlement

The population in and around this lease area is very thin. The nearest human settlement area is the village Lohagarh having population is show in following table. The adjoining villages are:

S. No.	Village	Population	Distance from ML Area
1.	Lohagarh	450	About 2.2 Km
2.	Mahuri Khera	600	About 1.5 km
3.	Bharkundi	400	About 2.8 km
4.	Ramtia	300	About 2.5 km
5.	Madpur	700	About 3.4 km
5.	Amaiva	450	About 4.5 km

8.1.6 Public Building, Places of Worship and Monument:-

No Public Building, National Monument, place of Worship, Sanctuary, National Park, exist in and around the lease area.

8.1.7 Indicate any sanctuary is located in the vicinity of leasehold.

No National Park/sanctuary falls within 10Km. of the lease area.

8.2 Impact Assessment: Attach an Environmental Impact Assessment

Statement describing the impact of mining and beneficiation on environment on the following:-

Impact of mining activities on the environment:

Given below are the details of the assessment made for the likely impact of mining activities on the environment, both biotic and abiotic:

8.2.1 Land area

As a result of mining activities there shall be less effect on present landscape. The area will be effected due so mining, dumping of O/B, soil, plantation prepared infrastructure and Roods. The land degradation shall be as shown in the table

Table No.19: At the End of the five year periods

Particular	Total Area (Hectare)
Pits	5.3606
Dump	1.6370
Top soil dump	0.5097
Infrastructure	--
Mineral Stack yard	--

Table No.20: At the End of the Life of the Mine

Particular	Total Area (Hectare)
Backfilled area	2.5871
Water reservoir	2.7735
Infrastructure	--

Likely depth of the pit at the end of the 5th year is 48m (722-674mRL)

8.2.2 Air Quality: - The only source to pollute air is the generation of dust while undertaking the Mechanized mining operation including sizing the mineral. But the level of dust concentration is practically of very low order.

8.2.3 Water Quality:- The mineral produced and the waste rocks generated are not likely to pollute the water quality in any manner.

8.2.4 Noise Level:- Generation of ground vibration and noise is practically under limit and low enough with the Mechanized mining operation to have any adverse impact on this account to the workers and local inhabitants.

8.2.5 Vibrations Levels (due to blasting):- not applicable.

8.2.6 Water Regime:- in absence of water regime in 500 meters periphery no impact will anticipate on water regime. The Ground water table is 50m (in rainy season) to 55m (in Dry Season).

8.2.7 Acid mine drainage:-

NA

8.2.8 Surface subsidence –

Mining method is proposed is open cast Mechanized mining.

8.2.9 Socio-Economics: - by having an economic activity near the villages, the socio and demographical profile of the local habitants will get positive impact, by direct and indirect jobs.

8.2.10 Historical Monuments: No historical monument or building is present in the lease area.

8.3 Progressive reclamation Plan:-

The Proposals of the Final Closure are based on the Geology and Topography of the region. At the end of the mining operation, a part shall be back filled and remaining part of the lease area would be used as water reservoir, the water reservoir would be fenced. The Backfilled and None utilized area would be used for afforestation after spreading topsoil over it. The local people would use the Buildings and Roads for their infrastructure facilities.

8.3.1 Mined Out Land

Table-21: Mined Out Land (Hectare)

Particular	Present	At the end of Mining Plan	At the end of Life of Mine
Broken Up Area	0.5130	5.3606	5.3606
Back Filled Area	Nil	Nil	2.5871
Water Reservoir	Nil	Nil	2.7735
Reclaimed Area	Nil	Nil	--
*All the area are in Hectare			

Mined Out Land Planning The mined out land planning is required to be done to ensure that:

- a. As soon as the land matures, it shall be made ready for future use.
- b. At all the times mining pits and the roads shall be maintained in safe condition to prevent landslides etc. and stability shall not be disturbed.
- c. Water drainage shall be maintained and cleaned in a manner that surface water shall not cause quarry flooding.

d. The plantation proposed above would not only help in the restoration of the land use but also improve the eco-system of the area.

Land Use Pattern The lease area is having A.G. & waste Land. In general the area is hilly land. There is no village or human settlement in the lease area. Permanent vegetation in the area is also very less prominent.

The present land use pattern is as indicated in the following Table:-

Table-22: Present land use pattern

Sr. No.	*All the areas are given in Hectares	A. G. Land	Waste Land	Total
1	Pits & Quarries	----	0.5130	0.5130
2	Top soil Dump	----	0.1647	0.1647
3	Dumps	----	3.6577	3.6577
4	Stack Yard	----	----	----
5	Sub Grade stack Yard	----	----	----
6	Infrastructure (Work shop, administrative Building)	----	0.0270	0.0270
7	Roads	0.4	2.3348	2.7348
8	Railway	----	----	----
9	Green Belt	10.3786	0.6843	11.0629
10	Tailing Pond	----	----	----
11	Effluent Treatment Plant	----	----	----
12	Mineral Separation Plant	----	----	----
13	Township	----	----	----
14	Non Utilized	4.3669	99.8102	104.1771
Total		14.7455	100.4945	115.24

Land reclamation & Tree plantations The land reclamation and afforestation proposals are presented in plate 8 of the plan. The lessee is committed to take care of and reclaim the mining area as proposed in the plan. At the end of the mining operation, a part shall be back filled and remaining part of the lease area would be used as water reservoir, the water reservoir would be fenced. And a part of the remaining region would be used for plantation.

Post Mining Land Use Plan

As mining in the pits is not going to be completed during the period of this five-year period, this point is not applicable.

Proposed Land pattern during next five years

Table-23: Proposed Land use pattern during next five years

Sr. No.	*All the areas are given in Hectares	A. G. Land	Waste Land	Total
1	Pits & Quarries	----	5.3606	5.3606
2	Top soil Dump	----	0.5097	0.5097
3	Dumps	----	1.6370	1.6370
4	Stack Yard	----	----	----
5	Sub Grade stack Yard	----	----	----
6	Infrastructure (Work shop, administrative Building)	----	0	0
7	Roads	----	----	----
8	Railway	----		
9	Green Belt	----	0.7500	0.7500
10	Tailing Pond	----	----	----
11	Effluent Treatment Plant	----	----	----
12	Mineral Separation Plant	----	----	----
13	Township	----	----	----
14	Non Utilized	14.7455	92.2372	106.9827
Total		14.7455	100.4945	115.24

End Land Use Pattern at the end of the life of the mine At the end of the mining operation, a part shall be back filled and remaining part of the lease area would be used as water reservoir and a part of the remaining region would be used for plantation.

The proposed end land use pattern is as indicated in the following Table

Table-24: Proposed end land use pattern

Sr. No.	*All the areas are given in Hectares	A. G. Land	Waste Land	Total
1	Pits & Quarries (Backfilled)	----	2.5871	2.5871
2	Water reservoir	----	2.7735	2.7735
3	Dumps	----	----	----
4	Stack Yard	----	----	----
5	Sub Grade stack Yard	----	----	----
6	Infrastructure (Work shop, administrative Building)	----	----	----
7	Roads	----	----	----
8	Railway	----	----	----
9	Green Belt (other than Backfilled)	----	3.5625	3.5625
10	Tailing Pond	----	----	----
11	Effluent Treatment Plant	----	----	----
12	Mineral Separation Plant	----	----	----
13	Township	----	----	----
14	Non Utilized	14.7455	91.5714	106.3169
Total		14.7455	100.4945	115.24

8.3.2 Top soil Managements:

It is also proposed to stack the topsoil (between Grid line 800N-1000N & 0E-200W) near the area where development of a 'Green Belt' has been proposed. This green belt is proposed near the lease boundary. A retaining wall shall be erected to protect wash out of the topsoil. The Topsoil Layer 0.2 m Thickness shall spread over the backfilled area for a forestation over it.

The Generation of soil from top layer is as follows table No. 16: -

Table: Proposed top soil to be generation:

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Top Soil (MT)	6403	9185	1149	9293	9645
Top soil in m ³	2287	3280	410	3319	3445
Swell Volume in M ³	2744	3936	492	3983	4134
Total Area (m ²)	915	1312	164	1328	1378
Avg. height of Top Soil in meter	3	3	3	3	3

The Avg. Height shall be 3.0 m for the five-year. Size of Topsoil: 75m x 7m x 3m between Grid line 800N-1000N & 0E- 200W.

8.3.3 Tailing Dam Management: - No Tailing Dam is proposed.

8.3.4 Acid mine drainage, if any and its mitigative measures:- No

8.3.5 Surface subsidence mitigation measures through backfilling of mine voids or by any other means and its monitoring mechanism.

The information on protective measures for reclamation and rehabilitation works year wise may be provided as per the following table. No 26:-

SUMMARY OF YEARWISE PROPOSAL FOR ITEM NO. 8.3

Item	Details	Proposed	Actual	Remarks
Dump management	Area afforesred (ha)	--	--	--
	No of saplings planted	--	--	--
	Cumulative no of plants	--	--	--
	Cost including watch and care during the year	--	--	--
Management of worked out benches	Area available for rehabilitation (ha)	--	--	--
	Afforestation done (ha)	--	--	--
	No of saplings planted in the year	--	--	--
	Cumulative no of plants	--	--	--
	Any other method of rehabilitation (specify)	--	--	--
Reclamation and Rehabilitation by backfilling	Cost including watch and care during the year	--	--	--
	Void available for backfilling (L x B x D) pit wise/ stop wise	--	--	--
	Void filled by waste / tailings	--	--	--
	Afforestation on the backfilled area	--	--	--
	Rehabilitation by making water reservoir	--	--	--
Rehabilitation of waste land within lease area	Any other means (specify)	--	--	--
	Area available (ha)	--	--	--
	Area Rehabilitated	--	--	--
	method of rehabilitation	--	--	--
Other (specify)	Plantation	--	--	--

* Proposed dump is active.

8.4 Disaster Management and Risk Assessment

The proposed workings are by opencast Mechanized mining method. Underground mining is not proposed. No tailing dam is proposed. Thus high risk accident like land slide, subsidence, fire, seismic activities etc. are not expected. In case of accident a well-equipped First Aid station shall be available at mine site for giving first aid to injured persons.

8.5 Care and Maintenance during Temporary Discontinuance

In case of temporary discontinuance of work, the mine workings will be in the watch of the Security Guard employed for the purpose. Before entering the labour into mine workings or faces during the resumption of work, the workings and faces are proposed to be inspected by Authorized person.

8.6: FINANCIAL ASSURANCE

The lessee is required to submit the financial assurance for the area to be put to use for mining and allied activity at the end of plan period. Following table shows the calculation:-

Sr. No.	Head	Area put on use at start of scheme (in Ha.)	Additional requirement during scheme period (in. Ha.)	Total (in. Ha.)	Area considered as fully reclaimed & rehabilitated (in. Ha.)	Net area considered for calculation (in. Ha.)
1.	Area under mining	0.5130	4.8476	5.3606	--	5.3606
2.	Storage for top soil	0.1647	0.345	0.5097	--	0.5097
3.	Overburden/ dump	3.6577	1.6370	5.2947	--	5.2947
4.	Mineral Stack Yard	0	0	0	--	0
5.	Infrastructure (Workshop, administrative building etc.)	0.0270	0	0.0270	--	0.0270
6.	Road	2.7348	0	2.7348	--	2.7348
7.	Railway	--	----	----	--	----
8.	Green Belt	11.0629	0.7500	11.8129	--	11.8129
9.	Tailing pond	---	--	--	--	--
10.	Effluent Treatment	--	--	--	--	--
11.	Mineral Separation Plant	--	--	--	--	--
12.	Township area	--	--	--	--	--
13.	Sub Grade Stack Yard	--	--	--	--	--
GRAND TOTAL		18.1601	7.5796	25.7397		25.7397

Total broken up area of the mine would be 5.3606hect. Therefore, as per Rule 37 (J) of R.M.M.C.R., 1986 (Amendment, 2012). The lessee has already submitted the Financial Assurance of Rs. 1.00Lac. The lessee shall be submitting remaining financial Assurance.

Date :-
Place:-Udaipur

Nimish Singhwi
RQP. NO. RQP/UDP/247/2003-A
Renewed up to 24.07.2017

Part –B

9.0 CERTIFICATE / UNDERTAKINGS / CONSENT LATTER

DR. M. S. SINGHVI

172-A, Fatehpura, Sukhadiya Circle, Udaipur (Raj.) 313001

A. CONSENT LATTER/UNDERTAKINGS/CERTIFICATE FROM THE LESSEE

1. Modification in mining plan with Progressive Mine closure plan in respect of Lohagarh Soapstone-Calcite & Dolomite Mine (M.L. No. 6/2000) over an area of 115.24hect. In Village - Lohagarh, Tehsil - Dhariyawad, Dist.-Pratapgarh (Raj.) under Rule 37f & Rule 37E (VI) of R.M.M.C.R., 1986 (Amended 2012) has been prepared by RQP Shri Nimish Singhwi, RQP No. RQP/UDP/247/2003-A.

This is to request the Supdt. Mining Engineer, Udaipur, circle Udaipur to make further correspondence regarding any regarding of scheme of Mining with the said recognized person at his following address:

Nimish Singhwi, *Mining Engineer & RQP*

Registration No.: RQP/UDP/247/2003-A;

Renewed up to 24.07.2017

15, New Glass Factory Colony,

Sunderwas Udaipur (Raj).

Mobile No.: 94141-10360

Email- nimesh.singhvi@gmail.com

We herby undertake that all modification/updating as made in the said Modification in mining plan by the said recognized person be deemed to have been made with our knowledge and consent and shall be acceptable on us and binding in all respects.

2. It is certified that the **CCOM's Circular No. 2/10** will be implemented and complied with when an authorized agency is approved by the State Government.
3. It is certified that the Progressive Mine Closure Plan of Lohagarh Soapstone, Calcite & Dolomite Mine (M.L. No. 6/2000) of **Dr. M. S. Singhvi**. Over an area of 115.24hect. complies, with all statutory Rules, Regulations, Orders made by the Central Government or State Government, Statutory organizations, Court etc. which have been taken into consideration and Wherever any specific permission is required, the Lessee will approach the concerned authorities.

The information furnished in the **Progressive Mine Closure plan** is true and correct to the best of our knowledge and records.

4. The provisions of **mines Act, Rules and Regulations** made there under have been observed in the Modification in mining plan over an area of 115.24hect. In Village- Lohagarh, Tehsil - Dhariyawad, Dist.- Pratapgarh (Raj.) belonging to Lohagarh Mine and where specific permissions are required the lessee will approach the **D.G.M.S.** Further standards prescribed by **D.G.M.S.** in respect of **miners' health** will be strictly implemented”

Date :-
Place:-

Dr. M. S. Singhvi.
172-A, Fatehpura, Sukhadiya Circle,
Udaipur (Raj.) 313001

NIMISH SINGHWI
Mining Engineer & RQP

Mobile: 094141-10360 (M)
099298-43552 (M)
nimesh.singhvi@gmail.com

Mining & Environmental Consultant

**Address: 15, New Glass factory colony, near AIM computer,
Udaipur (Raj.) 313001**

CERTIFICATE FROM RQP

The provisions under Rule 37f & Rule 37E (VI) of R.M.M.C.R., 1986 (Amended 2012) have been observed in the preparation of the Modification in mining plan with Progressive Mine closure plan for Lohagarh Soapstone, Calcite & Dolomite Mine (M. L. No. 6/2000) over an area of 115.24hect of **Dr. M. S. Singhvi**. State and whenever specific permissions are required, the lessee will approach the concerned authorities of **Dept. of Mines & Geology**.

The information furnished in the Modification in mining plan with progressive mine closure plan is true and correct to the best of our knowledge.

Place: Udaipur
Date:

Nimish Singhwi,
Mining Engineer & RQP
RQP No. RQP/UDP/247/2003-A

PLATES			
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2.	Route Map	Not to be scale	2
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4.	Geological Plan & Sections	1:2000	4
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6.	Individual year wise development plans & section	1:2000	6 A - 6 E
7.	Environment Plan	1:5000	7
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9.	Conceptual Plan	1:2000	9

List of Annexure

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2	Approved Mining Scheme Cover Page/Latter	2
3	Renewal of Lease & Agreement	3
4	Pollution Consent	4
5	Bank Guaranty	5
6	Copy of EC	6
7	Mineral /Noise/air/water/Analysis Report	7
8	Map & Demarcation Report of the M.L. area	8
9	Superimposed Khasra Map and its Jamabandi Report	9
10	ID & address Proof	10
11	Monitoring Report	11
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