इस माइनिंग प्लान का अनुमोदन
पत्र क्रमांक 18181 11/10/19

SCHEME OF MINING ALONG WITH PROGRESSIVE MINE CLOSURE PLAN FOR MUGDARA DOLOMITE MINES

VILLAGE	:	MUGDARA
TEHSIL	:	NAINPUR
DISTRICT	:	MANDLA
STATE	:	MADHYA PRADESH
MINERAL	:	DOLOMITE
AREA	:	19.223 HECTARES
AREA IN FOREST	:	19.223 HECTARES
CATEGORY	:	'A' OTFM CATEGORY
PROPOSAL PERIOD	:	2019-20 TO 2023-24

SUBMITTED UNDER RULE 42 (F) & 42 (J-2) OF MP MMR 1996

LESSEE

M/s OCL INDIA LTD.

PO: RAJGANGPUR, DISTRICT SUNDERGARH (ODISHA)

PHONE NO. *09438227717,06624220307*

Email Address: ocl_rajgangpur @ocl.in

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

PREPARED BY

INDRANEEL DAWANDE

RQP/DGMMP/002/2013

VALIDITY OF REGN NO.
17-04-2023

APPROVED
Director
Geology & Mining
Madhya Pradesh

ENGEOTECH CONSULTANT

1338, VIJAY NAGAR, JABALPUR (M.P.)

PH. 0761-2641694, MOBILE: 09425387402

Email: engeotech@rediffmail.com

YEAR

2018-19

CONTENTS

PARTICULARS	PAGE NO.
Introductory Notes	
General	5
Location and accessibility	6-7
Details of approved Mining Plan/ Scheme of Mining (if any)	8-12
Part - A	
1.0 Geology and Exploration	13-27
2.0 Mining	28-45
A. Open Cast Mining	
B. Underground Mining	
3.0 Mine Drainage	46-47
4.0 Stacking of Mineral Reject/ Sub Grade Material and Disposal of Waste	48-50
5.0 Use of Mineral and Mineral Reject	51
6.0 Processing of ROM and Mineral Reject	52
7.0 Other	53
8.0 Progressive Mine Closure Plan - Under Rule 23 of MCDR' 1988	54-61
Part - B	
9.0 Certificates/ Undertakings/ Consents	
A. Consent letter/ Undertaking/ Certificate from the Applicant	62
B. Certificate from RQP	63
10.0 List of the Plans and Sections to be submitted.	4

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

ANNEXURES

PARTICULARS	CERTIFICATE
ANNEXED AT THE BEGINNING OF THE TEXT	
CERTIFICATES FROM LESSEE	
CONSENT LETTER FROM LESSEE	CERTIFICATE NO. I
BOUNDARY PILLAR UNDERTAKING	CERTIFICATE NO. I
PMCP CERTIFICATE	CERTIFICATE NO. I
CLOSURE PLAN CERTIFICATE	CERTIFICATE NO. I
DGMS CERTIFICATE	CERTIFICATE NO. I
CERTIFICATE FROM RQP	
MP MMR CERTIFICATE	CERTIFICATE NO. II
MCDR CERTIFICATE	CERTIFICATE NO. II
CORRECTNESS CERTIFICATE	CERTIFICATE NO. II
ANNEXED AT THE END OF THE TEXT	
CONSENT LETTER FROM FOREST DEPARTMENT	ANNEXURE NO. I
ORIGINAL LEASE DEED COPY	ANNEXURE NO. II
CHEMICAL ANALYSIS OF DOLOMITE	ANNEXURE NO. III
APPOINTMENT/DECLARATION OF NOMINATED OWNER	ANNEXURE NO. IV
PHOTO ID COPY OF NOMINATED OWNER	ANNEXURE NO. V
PERMANENT ADDRESS COPY OF NOMINATED OWNER	ANNEXURE NO. VI
7.5M BARRIER ZONE BACKFILLING UNDERTAKING	ANNEXURE NO. VII
PREVIOUSLY APPROVED SCHEME OF MINING LETTER COPY	ANNEXURE NO. VIII
EC COPY	ANNEXURE NO. IX
COMPANY MEMORANDUM AND ARTICLESHIP COPY	ANNEXURE NO. X
NEW AGREEMENT FOR 50 YEARS	ANNEXURE NO. XI
RQP REGISTRATION COPY	ANNEXURE NO. XII

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

PLATES

PARTICULARS	PLATE NO.	SCALE
KEY PLAN	PLATE NO. I	1:50000
LOCATION PLAN	PLATE NO. II	1:50000
KHASRA MAP	PLATE NO. III	1:4000
SURFACE PLAN	PLATE NO. IV	1:1000
SURFACE GEOLOGICAL PLAN & SECTION	PLATE NO. V	1:1000
FIVE YEAR DEV. & PROD. PLAN & SECTION	PLATE NO. VI	1:1000
ENVIRONMENT MANAGEMENT PLAN & SECTION	PLATE NO. VII	1:1000
CONCEPTUAL PLAN AND SECTION	PLATE NO. VIII	1:1000
ENVIRONMENT PLAN	PLATE NO. IX	1:5000
PROGRESSIVE MINE CLOSURE PLAN	PLATE NO. X	1:1000

PHOTOGRAPHS

PARTICULARS	PHOTOGRAPH NO.
PHOTOGRAPHS SHOWING THE GEOLOGY, PIT SHAPE, PROPOSED FIVE YEAR WORKING, BOUNDARY PILLAR AND PLANTATION	PHOTO NO. 1-4

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

SCHEME OF MINING ALONG WITH PROGRESSIVE MINE CLOSURE PLAN FOR MUGDARA DOLOMITE MINES, AREA 19.223 HECTARES, TEHSIL NAINPUR & DISTRICT MANDLA (M.P.)

CHAPTER - I

1.0 GENERAL

This **Scheme of Mining** of **Mugdara Dolomite Mines** over an area of **19.223 hectares** situated at Village Mugdara Tehsil Nainpur and District Mandla of State Madhya Pradesh of lessee **M/s OCL India Limited,** Address: P.O. Rajgangpur, District Sundergarh (Odisha), PIN - 770017 is being submitted under **Rule 42 (F) & 42 (J-2)** of **MP MMR 1996**.

The details of **Mugdara** Mines are given below:

S.No.	Particulars	Details
a)	Name of the lessee	**M/s OCL India Limited** Address: P.O. Rajgangpur, District Sundergarh (Odisha) PIN -770017 Phone No. 09437965493
b)	Status of Lessee	It is a Limited Company
c)	Mineral(s) which are included in the PL	Dolomite
d)	Mineral(s) which is/ are included in the letter of Intent/ lease deed	Dolomite
e)	Mineral(s) which is the applicant/ lessee intends to mine	Dolomite
f)	Name of Recognized Person under MP MMR 1996	**Indraneel Dawande**
	Address	1338, Vijay Nagar, Jabalpur (M.P.) Phone & Fax: 0761-2641694, 09425387402 Email: engeotech@rediffmail.com
	Regn no.	RQP/DGMMP/002/2013
	Date of issue/ Registration Valid up to	18-04-2013 17-04-2023

मध्यप्रदेश गौण खनिज नियम 1996
नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMMP/002/2013

CHAPTER - II

2.0 LOCATION AND ACCESSIBILITY

<table>
<tr><td>a)</td><td>Lease Detail
Name of the mine</td><td colspan="4">MUGDARA DOLOMITE MINES
Latitude : 22° 26' 24.9" to 22° 26' 37.9"
Longitude : 80° 22' 41.1" to 80° 23' 20.8"
Lease area is 19.223 ha and the extended agreement for 50 years period is from 25-04-1994 to 24-04-2024 (30 Years Period) (see annexure no. I)</td></tr>
<tr><td></td><td>Date of Original Grant/ Sanctioned</td><td colspan="4">M/s OCL India Limited
PO: Rajgangpur, District Sundergarh (Odisha), PIN -770017, Vide State Govt. Sanctioned Letter No. F13-96/93/12/2 dated 10-11-1993 (see annexure no. I)</td></tr>
<tr><td>b)</td><td>Name of the lease holder & Postal Address</td><td colspan="4">M/s OCL India Limited
PO: Rajgangpur, District Sundergarh (Odisha)
PIN -770017
Phone No. 09437965493</td></tr>
<tr><td>c)</td><td>Details of lease area with location Map</td><td colspan="4">Please refer to Plate no. II
मध्यप्रदेश गौण खनिज नियम 1996 नियम 42 के अन्तर्गत अनुमोदित</td></tr>
<tr><td></td><td>DETAILS OF LAND</td><td colspan="2">FOREST</td><td colspan="2">NON FOREST</td></tr>
<tr><td></td><td></td><td>Forest (specify)</td><td>AREA (HA)</td><td>WASTE LAND, GRAZING LAND, AGRICULTURE LAND, OTHER</td><td>AREA (HA)</td></tr>
<tr><td></td><td></td><td>FOREST LAND</td><td>807/1(Part), 808/2(Part) & 811/1(Part) Total- 19.223 ha</td><td>NIL</td><td>NIL</td></tr>
<tr><td></td><td>TOTAL LEASE AREA</td><td colspan="4">19.223 ha
State: Madhya Pradesh, District: Mandla, Tehsil: Nainpur, Village: Mugdara</td></tr>
<tr><td></td><td>Whether area falls under Coastal Regulation Zone (CRZ)? If yes, details</td><td colspan="4">No.</td></tr>
<tr><td></td><td>Existence of public road/ railway line, if any nearby and approximate distance</td><td colspan="4">No.</td></tr>
<tr><td></td><td>Toposheet No. with latitude & longitude of all corner boundary point/ pillar</td><td colspan="4">64 B/ 7 and Boundary Pillar Coordinates are given on page no. 7</td></tr>
<tr><td></td><td>Attach a general location map showing area and access routes. It is preferred that the area be marked on a Survey of India topographical map or a cadastral Map or forest map as the case may be. However, if none of these are available, the area may be shown on an administrative map.</td><td colspan="4">Please refer to Plate no. I - III and Plate no. IX</td></tr>
</table>

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

Coordinates of lease pillar: See Plate no. IV

LEASE BOUNDARY PILLAR POINT COORDINATE:

PILLAR NO.	LATITUDE	LONGITUDE
PILLAR NO. 1	22° 26' 36.70"	80° 23' 16.10"
PILLAR NO. 2	22° 26' 34.10"	80° 23' 17.80"
PILLAR NO. 2A	22° 26' 32.40"	80° 23' 17.10"
PILLAR NO. 3	22° 26' 30.50"	80° 23' 16.40"
PILLAR NO. 4	22° 26' 29.30"	80° 23' 17.20"
PILLAR NO. 5	22° 26' 30.80"	80° 23' 19.60"
PILLAR NO.6	22° 26' 26.80"	80° 23' 20.80"
PILLAR NO. 7	22° 26' 24.90"	80° 23' 13.06"
PILLAR NO. 8	22° 26' 26.20"	80° 23' 11.60"
PILLAR NO. 9	22° 26' 29.40"	80° 23' 11.80"
PILLAR NO. 10	22° 26' 32.70"	80° 23' 02.80"
PILLAR NO. 11	22° 26' 33.00"	80° 22' 57.10"
PILLAR NO. 12	22° 26' 29.60"	80° 22' 57.30"
PILLAR NO. 13	22° 26' 29.70"	80° 22' 56.10"
PILLAR NO. 14	22° 26' 32.70"	80° 22' 54.80"
PILLAR NO. 15	22° 26' 32.80"	80° 22' 51.90"
PILLAR NO. 16	22° 26' 34.50"	80° 22' 51.60"
PILLAR NO. 17	22° 26' 34.00"	80° 22' 43.70"
PILLAR NO.18	22° 26' 31.70"	80° 22' 44.10"
PILLAR NO. 19	22° 26' 31.50"	80° 22' 41.80"
PILLAR NO. 20	22° 26' 36.10"	80° 22' 41.10"
PILLAR NO. 21	22° 26' 37.90"	80° 22' 51.80"

Land use Forest land.

Key pattern: Key Plan is enclosed as Plate No. - **I**

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGM/MP/002/2013

CHAPTER - III

3.0 DETAILS OF APPROVED MINING PLAN/ SCHEME OF MINING (IF ANY):

3.1 DATE AND REFERENCE OF EARLIER APPROVED MP/ SOM:

Earlier Renewal of Mining Plan was approved under Rule **24 (A) MCR 1960** & 23(B) of MCDR 1988 for renewal of mining lease by IBM Jabalpur through its letter no. MP/Mandla/Dolomite/MPLN/R-14/2013-14, dated 02-06-2014 for a period of 5 years i.e. from **2014-15 to 2018-19.**

3.2 DETAILS OF LAST MODIFICATIONS IF ANY (FOR THE PREVIOUS APPROVED PERIOD) OF APPROVED MP/ SOM INDICATING DATE OF APPROVAL, REASON OF MODIFICATION:

Not applicable.

3.3 REVIEW OF EARLIER APPROVED MINING PLAN/ SCHEME OF MINING:

- **REVIEW OF COMPLIANCE POSITION OF SALIENT FEATURES OF THE MINING PLAN ON CHAPTER WISE BASIS BRINGING OUT MARKED DEVIATIONS, IF ANY, AND JUSTIFICATIONS/ REASONS THEREOF. ITEMS TO BE COVERED MAY INCLUDE EXPLORATION, MINE DEVELOPMENT, EXPLOITATION, AFFORESTATION PROGRAMME, RECLAMATION AND REHABILITATION, CONTROL OF DUST, NOISE AND GROUND VIBRATION AND ANY OTHER SIGNIFICANT FEATURES:**

[i] EXPLORATION *(as per last approved M. Plan for Yr 2014-15 to 2018-19)*

PROPOSAL			ACHIEVEMENT*	
TYPE OF EXPLORATION	QUANTUM SIZE/ NOS.	LOCATION	TYPE	QUANTUM SIZE/ NOS.
TP	NOT PROPOSED	-	TP	NOT DONE
TRENCH	NOT PROPOSED	-	TRENCH	NOT DONE
BH	Avg. 30-60m each/ 11 no.	As shown on plan	BH	02 Bore holes for avg. 23-26m depth each has been done

* Location as per Surface Geological Plan.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

***Achievement:**

It has been done partly and in coming period it will be done as per proposal.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

[ii] DEVELOPMENT *(as per last approved M. Plan for Yr 2014-15 to 2018-19)*

Before the start of mining plan period there were 07 pits in the area and proposal was given towards the eastern side pit 3-5 and pit was proposed to be advanced in western and northern direction however during the period meagre development has been done and pit 3-5 has been advanced meagrely in western and northern direction.

As on date following pits have been measured and their details are as under:

PIT NO.	BROKEN AREA HA	PIT BOTTOM AREA-HA	SURFACE RL - M	PIT BOTTOM RL-M	BENCHES			
					TYPE	BENCH NO	AVG HT-M	AVG WIDTH-M
PIT- 1	0.2204	0.21	456	450	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT -2	0.9216	0.85	458-454	450				
PIT NO.3+4+5	(1.9610+0.3750+0.9490 =3.285	2.15	462-453	446	CHERT WITH DOLOMITE 462-451M (EASTERN PART) DOLOMITE	B1 B2 B3 B4	460-457=3-4M 457-451=5-6M 451-449=3M 449-447=2M	3-4 8-10 3-4 3-4
*PIT NO.6	0.0330	0.030	456	451	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
*PIT NO.7	0.0816	0.079	456	450				
TOTAL	4.5416	3.319						

*Already backfilled

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमो

PROPOSAL:

AS SHOWN ON FIVE YEAR PLAN			BROKEN AREA - HA			PIT BOTTOM RL	
BENCHES		SIZE - (H x W)	ALREADY	PROPOSED	CUMULATIVE	PREVIOUS	PROPOSED
DOLOMITE	B1 B2 B3	462-456m 456-451m 451-449m	3.6916	3.30	6.9916	447m	449/447m

ACHIEVEMENT: As on date

PIT-I			BROKEN AREA - HA			PIT BOTTOM RL
BENCHES		SIZE-M (HxW)	PREVIOUS	ADDITIONAL	PRESENT	PRESENT PIT BOTTOM RL
DOLOMITE	B1 B2 B3	2-6 - -	3.6916	0.85	4.5416	447m

LOCATION AS PER SURFACE PLAN PLATE NO IV

a) OB MANAGEMENT - *(as per last approved M. Plan for Yr 2014-15 to 2018-19)*

OB: It is in the form of murum along with Cherty material

Rehandling proposal: During the proposal period Dump no. 13 = 480m^3 + Dump no -14 = 1725 m^3= 2205m^3 were proposed to be used for backfilling. While Dump no = 1 to 3, 17-18 & 22 = 10756 m^3 (total quantity) was proposed to be rehandled and adjusted in 7.5m barrier zone. And the proposal period generated intercalated waste i.e. 195483 m^3 (after SF x CF - 112) to be dumped in the lease area.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

PROPOSAL - 5 YR				ACHIEVEMENT - 5 YR			
GENERATION - M^3	DISPOSAL			GENERATION - M^3	DISPOSAL		
	BACKFILLING - M^3	EXTERNAL DUMPING - M^3	OTHERS - M^3		BACK-FILLING	EXTERNAL DUMPING	OTHERS
195483 m^3 (after SF x CF 112%) waste was proposed to be generated.	As rehandling of dump 2205 m^3	-	Single dump of 1.17ha x17-20m ht	887 m^3	-	-	Used for making haulage road

Present Dumps details:

DUMP NO	TYPE ACTIVE/ INACTIVE	QUANTITY - M^3	BASE AREA HA	(AVG) HEIGHT - M	REMARK
D-1	INACTIVE	500	0.025	2m	WEATHERED SILICEOUS MATERIAL
D-2	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-3	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-4	INACTIVE	1000	0.05	2	WEATHERED SILICEOUS MATERIAL
D-5	INACTIVE	1152	0.0384	3	WEATHERED SILICEOUS MATERIAL
D-6	INACTIVE	9000	0.2250	3.5	WEATHERED SILICEOUS MATERIAL
D-7	INACTIVE	2625	0.0750	3.5	WEATHERED SILICEOUS MATERIAL
D-8	INACTIVE	1960	0.056	3.5	WEATHERED SILICEOUS MATERIAL
D-9	INACTIVE	2352	0.0784	3	WEATHERED SILICEOUS MATERIAL
D-10	INACTIVE	720	0.036	2	WEATHERED SILICEOUS MATERIAL
D-11	INACTIVE	1750	0.05	3.5	WEATHERED SILICEOUS MATERIAL
D-12	INACTIVE	5700	0.19	3	WEATHERED SILICEOUS MATERIAL
D-13	INACTIVE	480	0.024	2	WEATHERED SILICEOUS MATERIAL
D-14	INACTIVE	1725	0.0575	3	WEATHERED SILICEOUS MATERIAL
D-15	INACTIVE	840	0.042	2	WEATHERED SILICEOUS MATERIAL
D16	INACTIVE	672	0.0336	2	WEATHERED SILICEOUS MATERIAL
D-17	INACTIVE	1620	0.0540	3	WEATHERED SILICEOUS MATERIAL
D-18	INACTIVE	1500	0.075	2	WEATHERED SILICEOUS MATERIAL
D-19	INACTIVE	2880	0.096	3	WEATHERED SILICEOUS MATERIAL
D-20	INACTIVE	1238	0.0495	2.5	WEATHERED SILICEOUS MATERIAL
D-21	INACTIVE	4050	0.09	4.5	WEATHERED SILICEOUS MATERIAL
D-22	INACTIVE	6336	0.1584	4	WEATHERED SILICEOUS MATERIAL
TOTAL		**48900**	**1.5438**		

[iii] EXPLOITATION *(as per last approved M. Plan for Yr 2014-15 to 2018-19)*

PIT	PROPOSAL						ACHIEVEMENT				
	YEAR	SOIL M^3	IC WASTE M^3	TOTAL OB M^3	DOLOMITE - T	SR	TOP SOIL M^3	IC WASTE M^3	TOTAL OB	DOLOMITE-T	SR
As shown on five year plan	2014-15	-	44472	44472	48542	1:1.28	-	887	887	3420	1:0.25
	2015-16	-	37719	37719	48940	1:1.08	-	-	-	-	-
	2016-17	-	26998	26998	48310	1:078	-	-		-	-
	2017-18	-	30459	30459	48859	1:0.87	-	-	-	-	-
	2018-19		34891	34891	48118	1:0.01	-	-	-	-	-

**All Production data & information provided by lessee*

Note: Bulk Density used for dolomite - 2.65 t/ cu.m. & Waste - 1.40 t/ cu.m.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

[iv] AFFORESTATION: *(as per last approved M. Plan for Yr 2014-15 to 2018-19)*

PROPOSAL

YEAR	AFFORESTATION PROGRAMME ON										
	BACKFILLED AREA - M²		WASTE DUMPS		GREEN BELT		BENCH/ BF SLOPE		OTHER areas		SURVIVAL RATE
	AREA	NOS	NOS	AREA	NOS	AREA	NOS	AREA	NOS	AREA	
2014-15	-	-	-	-	58	525m²	-	-	-	-	70%
2015-16	-	-	-	-	10	90m²	-	-	-	-	70%
2016-17	-	-	-	-	10	90m²	-	-	-	-	70%
2017-18	-	-	-	-	10	90m²	-	-	-	-	70%
2018-19	-	-	-	-	10	90m²	-	-	-	-	70%
TOTAL	-	-	-	-	98	885m²	-	-	-	-	70%

ACHIEVEMENT

YEAR	AFFORESTATION DONE ON										
	BACKFILLED AREA - M²		WASTE DUMPS		GREEN BELT		BENCH/ BF SLOPE		OTHER areas		SURVIVAL RATE
	AREA	NOS	NOS	AREA	NOS	AREA	NOS	AREA	NOS	AREA	
2014-15	-	-	-	-	58	525m²	-	-	-	-	0.00%
2015-16	-	-	-	-	10	90m²	-	-	-	-	0.00%
2016-17	-	-	-	-	10	90m²	-	-	-	-	0.00%
2017-18	-	-	-	-	10	90m²	-	-	-	-	0.00%
2018-19	-	-	-	-	10	90m²	-	-	-	-	0.00%
TOTAL	-	-	-	-	98	885m²	-	-	-	-	0.00%

Precaution: Now in ensuing years, the lessee will take care of plantation by appointing a gardener, fencing around the plantation, regular watering and manuring at required intervals, and special attention will be given for better survival of the proposed afforestation.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 12 के अन्तर्गत अनुमोदित

[v] MINE RECLAMATION & REHABILITATION OF MINED OUT AREA AND MATURED DUMPS

Since mineral is continued depth wise hence no reclamation has been proposed however the 525 m² area under 7.5m barrier zone was proposed to be backfilled for average 3m depth. Considering meagre mining activity the desired area could not be backfilled but during the proposal period it will be as per proposal.

[vi] CONTROL OF DUST:

As per proposal, sprinkling of water around the working area, wet drilling, plantation has been proposed. During the period it was as per proposal hence such problem has not been noticed.

[vii] GROUND VIBRATION

This being a small mine require very little blasting operation hence ground vibration problem was not apprehended and no proposal for their measurement/ monitoring was given.

INDRANEEL DAWANDE
Recognised Qualified Person
For DGM-MP

[viii] ANY OTHER SIGNIFICANT FEATURES

No.

➢ **REVIEW OF THE COMPLIANCE POSITION OF CONDITIONS AND STIPULATIONS IMPOSED IF ANY, WHILE APPROVING THE MINING PLAN. IN CASE OF NON-COMPLIANCE/ PARTIAL COMPLIANCE DETAILED JUSTIFICATIONS/ REASONS THEREOF MAY BE FURNISHED ALONG WITH PROPOSAL FOR COMPLIANCE IN THE ENSUING PERIOD:**

No conditions and stipulations were imposed.

3.4 REVIEW OF THE COMPLIANCE OF VIOLATIONS POINTED OUT AFTER INSPECTION DURING THE LAST 5 YEARS THE POSITION EMERGING OUT OF THE YEARLY REVIEW OF THE MINING PLAN BY CHECKING UP THE IMPLEMENTATION OF MINING PLAN IN THE FIELD SHALL ALSO BE TAKEN NOTE OF AT THIS STAGE:

As per information given by lessee, no violation has been raised out.

3.5 INDICATE AND GIVE DETAILS OF ANY SUSPENSION/ CLOSURE/ PROHIBITORY ORDER ISSUED BY ANY GOVERNMENT UNDER ANY RULE OR COURT OF LAW:

No.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत प्रस्तुत

3.6 IN CASE THE MP/ SOM ARE SUBMITTED UNDER RULES 42 D OF THE MP MMR 1996 OR UNDER RULE 42 (D) OF THE MP MMR 1996 FOR APPROVAL OF MODIFICATION SPECIFY REASON AND JUSTIFICATION FOR MODIFICATION UNDER THESE RULES:

Not applicable because this case is being submitted under Rule 42(F) & 42(J-2) of MP MMR 1996.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

PART - A

CHAPTER A - 1.0

1.0 GEOLOGY AND EXPLORATION

a) TOPOGRAPHY

Topographically, the lease area is having moderate to gentle rolling topography, the eastern part is having the high relief with highest elevation of 462m at the top of the hillock in the NE part and the lowest one is 448m in the southern part thus the elevation difference is of 14 m. The gradient of the area is radial meeting to Southern side local nala. The lease area is developed with seven pits and there are 21 dumps all over the lease area mostly placed near working pits and along the barrier zone. In the lease area mines office, site services magazine and crusher unit etc. been installed and shown on plan.

b) DRAINAGE PATTERN

The Lease area is having moderate to gentle rolling topography and the gradient is towards south. The drainage of the area is governed by Banjar River in the southern part of the lease area.

➢ CLIMATE/ RAINFALL

The area witnesses the subtropical climate with an averaging rainfall of 1200 mm annually. The variation in temperature is 46°C to 4°C during summer and winter respectively. The wind generally blows in northeast direction. From November to February the area experiences pleasant winter. March is start of summer, which continues up to June. The monsoon sets in by June and retreats by September. Relative humidity varies from 18% to 80% in a year.

Proposed operations are of moderate scale and will not cause adverse effect on environment of the area. Standard norms will be adopted for protection of environment.

YEAR	ANNUAL RAINFALL	TEMPERATURE °C	
	IN M.M.	MAXIMUM	MINIMUM
1994	1093.3	45.8	4.3
1995	1144.2	46.2	4.2
1996	1140	45.7	4.8
1997	1280	46.5	4.6
1998	1180	46.5	4.2
1999	1400	46.5	4.6
2000	1210	47.6	4.1
2001	1234	47.2	4.0
2002	1240	47.1	4.1
2003	1130	48.0	4.0
2004	1248	47.2	4.5
2005	1885	44.6	5.8
2006	1145	44.9	6.2
2007	1080	44.3	5.8
2008	1120	44.6	6.2
2009	1105	43.9	4.8
2010	1180	44.2	5.2
2011	1265	44.3	4.9
2012	1268	44.7	5.1
2013	1655	44.2	4.3
2014	1229	45.1	6.8
2015	1011	46.8	6.2
2016	1105	45.9	5.1
2017	1158	45.7	5.7
2018	1138	45.3	5.8

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

b) REGIONAL GEOLOGY

Rock formation ranging in age from Archaean to quaternary is exposed in the Mandla District. The oldest rocks are represented by Tirodi Gneissic Complex of Archaean to Palaeo Proterozoic age. Sausar Group represented by Bichua, Junewani, Chorbaoli and Mansar of Mesoproterozoic age is exposed in the southern part of the Mandla District. The Aravalli Group of rock formation is comprised of an immense thickness of predominantly argillaceous rocks, which exhibits prograde metamorphosed character and belongs to the Mahakaushal Group of rocks of lower to middle Proterozoic age. The major litho units are metamorphosed sandstone (ites), Dolomite and Dolomitic (ite) and weathered BIF. The regional trend of rocks is NE- SW. These have been intruded by acid and basic intrusive. Structurally both primary and secondary structures have been developed. The rocks have been subjected to poly phase deformation and two sets of joints have been developed.

The regional succession is as follows:

Alluvium		Quarternary
Deccan Traps		Cretaceous
----------Disconfirmity----------		
Lameta		
Green Sand MNB Sandstone		
----------Unconfirmity----------		
Sandstone, shale, Gondwana Super Group		Carboniferrous to Jurassic
----------Thrust----------		
Acid and Basic intrusives	M	
Basic flows	A	
Calcphyllites marbles	H	Middle to
Dolomite/ slate	A	Lower
Carbonate with chert bands	K	Proterozoic
Phyllite	A	
ite	U	
Conglomerate	S	
BHQ/ BIF	H	
Granite Gneiss	A	
	L	

REFERENCE [A] Special Publication GSI Vol. 28, 83

[B] Fundamentals of Historical Geology and Stratigraphy of India, by Ravindra Kumar

c) DESCRIPTION OF GEOLOGY OF THE LEASE AREA SUCH AS SHAPE AND SIZE OF THE MINERAL/ ORE DEPOSIT, DISPOSITION OF VARIOUS LITHO-UNITS INDICATING STRUCTURAL FEATURES IF ANY ETC. (APPLICABLE FOR MINING PLAN FOR GRANT & RENEWAL AND NOT FOR SCHEME OF MINING/ MODIFICATIONS IN THE APPROVED MINING PLAN/ SCHEME OF MINING)

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुज्ञप्ति

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGM/MP/002/2013

LOCAL GEOLOGY:

Local geology follows the trend of regional geology; the lease area has been geologically proved by detailed exploration i.e. two existing bore holes/presently working and old pits, further continuity of mineralization has been seen in adjacent and nearby mines. The eastern part is capped by chert with dolomite from MRL 462m to 451m and below this chert capping dolomite is continued up to pit bottom i.e. from MRL 451m to 427m and dolomite continuity has been explored with in pit & drilled bore holes in the eastern direction from MRL 450m to 427m while western part is capped by alluvial soil of average 1m thickness over the dolomite formation having average depth of 4m in dolomite zone up to MRL 450m. All the pits are within 100-150m radial influence from each other hence whole area is considered mineralized and categorization point of view, G1 is considered for the eastern part where dolomite occurs from MRL 462m to 427m and lateral influence is considered up to 150m from the pit face i.e. approx **8.17 ha** comes under G1 and rest area in western direction **11.053 ha** is considered under G2 and here dolomite is considered from MRL 454m to 450m as per geological findings while below G2, G3 is considered for average 8m depthwise in 11.053ha area upto MRL 442m. The chert zone findings respective to G1, G2 and G3 plotting has been discussed in coming paras. The dolomite beds are steeply dipping towards south and belong to the Mahakaushals.

Dolomite bed should be mineralized depth wise. Succession of local geology -

Lateritic Soil + chert with dolomite

Dolomite

Base not known

STRUCTURAL FINDINGS

Strike is ENE-WSW to E-W, and dipping is 60°-70° towards S.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित।

d) Name of Prospecting Agency

Lessee himself, under the guidance of mining geologist:

M/s OCL India Limited

PO: Rajgangpur, District Sundergarh (Odisha)

PIN -770017

Phone No. 09437965493

e) DETAILS OF PROSPECTING/ EXPLORATION ALREADY CARRIED OUT:

i) NUMBER OF PITS AND TRENCHES INDICATING DIMENSIONS, SPACING ETC. ALONG AND ACROSS THE STRIKE/ FOLIATION WITH REFERENCE TO GEOLOGICAL PLAN.

PIT DETAILS:

The area is under mining operation for last 25 years and is being explored and exploited by means of following pits/ excavations and bore hole in the lease area:

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

PIT NO.	BROKEN AREA HA	PIT BOTTOM AREA-HA	SURFACE RL - M	PIT BOTTOM RL-M	BENCHES			
					TYPE	BENCH NO	AVG HT-M	AVG WIDTH-M
PIT- 1	0.2204	0.21	456	450	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT -2	0.9216	0.85	458-454	450				
PIT NO.3+4+5	(1.9610+0.3750+0.9490 =3.285	2.15	462-453	446	CHERT WITH DOLOMITE 462-451M (EASTERN PART) DOLOMITE	B1 B2 B3 B4	460-457=3-4M 457-451=5-6M 451-449=3M 449-447=2M	3-4 8-10 3-4 3-4
*PIT NO.6	0.0330	0.030	456	451	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
*PIT NO.7	0.0816	0.079	456	450				
TOTAL	4.5416	3.319						

AREA COVERED BY SEVEN PITS = 4.5416 HA

*Already backfilled

ii) NUMBER OF BOREHOLES INDICATING TYPE (CORE/ RC/ DTH), DIAMETER, SPACING, INCLINATION, COLLAR LEVEL, DEPTH ETC. WITH STANDARD BOREHOLE LOGS DULY MARKED ON GEOLOGICAL PLAN/ SECTIONS.

मध्यप्रदेश गौण खनिज नियम 1996 के नियम 42 के अन्तर्गत अनुमोदित

BORE HOLE DETAILS

S. NO.	BORE HOLE	TYPE	DEPTH	DIA	COLLAR RL	FROM TO	LOGGING IN METER	Avg. Recovery	LOCATION
1.	BH-1	NON CORE BORE	23 m	4"	450 m	450-427 m	450-445 m DOLOMITE 445-440 m DOLOMITE 440-435 m DOLOMITE 435-430 m DOLOMITE 430-427 m DOLOMITE	80%	AS SHOWN ON PLAN
1.	BH-2	NON CORE BORE	26 m	4"	453 m	453-427 m	453-448 m DOLOMITE 448-443 m DOLOMITE 443-438 m DOLOMITE 438-433 m DOLOMITE 433-427 m DOLOMITE	80%	

**Remarks: In the pit, exposed continuous Dolomite thickness up to pit bottom and as per given information there was no core, only chips/ fines have been collected and as per exploration agency and furnished information in the Form K, the average recoverable quantum of Dolomite in the lease area should be around 80%.*

iii) DETAILS OF SAMPLES ANALYSIS INDICATING TYPE OF SAMPLE (SURFACE/ SUB-SURFACE FROM PITS/ TRENCHES/ BOREHOLE ETC.) COMPLETE CHEMICAL ANALYSIS FOR ENTIRE STRATA FOR ALL RADICALS MAY BE UNDER TAKEN FOR SELECTED SAMPLES FROM A NABL ACCREDITED LABORATORY OR GOVERNMENT LABORATORY OR EQUIVALENT. ENTIRE MINERALIZED AREA MAY BE ANALYZED METER WISE WITH 10% OF CHECK SAMPLES. (AT LEAST FOR 10% OF TOTAL SAMPLES MAY BE ANALYZED IN ACCORDANCE TO BIS AND REPORTS FROM NABL ACCREDITED/ OTHER GOVERNMENT LABORATORY):

Samples collection:-

SAMPLE COLLECTION	SURFACE	PITS	BORE HOLES
DOLOMITE	01 (NEW)	01 (OLD)	02 (NEW)

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/0

Please refer to Chemical Analysis - Annexure no. III

e) Expenditure incurred in various prospecting operations.

Drilling: Rs. 10000.00

Sample collection: Rs. 2000.00

Analysis: Rs. 15000.00

Out of pocket expenses: Rs. 5000.00

Total expenses: Rs. 32000.00

* Note: - All approx. expenditure cost data has been provided by lessee.

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 10 M DEPENDING UPON THE TOPOGRAPHY AND SIZE OF THE AREA DULY MARKED BY GRID LINES SHOWING ALL FEATURES TO BE INDICATED:

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

Please refer to Plate no. IV

g) FOR PREPARATION OF GEOLOGICAL PLAN, SURFACE PLAN PREPARED ON A SCALE OF 1: 1000 OR 1: 2000 SCALE SPECIFIED UNDER PARA 1.0 (F) OF PART A OF THE FORMAT MAY BE TAKEN AS THE BASE PLAN. THE DETAILS OF EXPLORATION ALREADY CARRIED OUT ALONG WITH SUPPORTING DATA FOR EXISTENCE OF MINERAL, LOCATIONS PROPOSED EXPLORATION, VARIOUS LITHOUNITS ALONG WITH STRUCTURAL FEATURES, MINERALIZED/ ORE ZONE WITH GRADE VARIATION IF ANY MAY BE MARKED ON THE GEOLOGICAL PLAN ALONG WITH OTHER FEATURES TO BE INDICATED:

PIT DETAILS:

The area is under mining operation for last 25 years and is being explored and exploited by means of following pits / excavation and bore hole in the lease area:

PIT NO.	BROKEN AREA HA	PIT BOTTOM AREA-HA	SURFACE RL - M	PIT BOTTOM RL-M	BENCHES			
					TYPE	BENCH NO	AVG HT-M	AVG WIDTH-M
PIT- 1	0.2204	0.21	456	450	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT -2	0.9216	0.85	458-454	450				
PIT NO.3+4+5	(1.9610+0.3750+0.9490 =3.285	2.15	462-453	446	CHERT WITH DOLOMITE 462-451M (EASTERN PART) DOLOMITE	B1 B2 B3 B4	460-457=3-4M 457-451=5-6M 451-449=3M 449-447=2M	3-4 8-10 3-4 3-4
*PIT NO.6	0.0330	0.030	456	451	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT NO.7	0.0816	0.079	456	450				
TOTAL	4.5416	3.319						

AREA COVERED BY SEVEN PITS = 4.5416 HA

*Already backfilled

INDRANEEL DAWANDE
Recognised Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

ii) NUMBER OF BOREHOLES INDICATING TYPE (CORE/ RC/ DTH), DIAMETER, SPACING, INCLINATION, COLLAR LEVEL, DEPTH ETC. WITH STANDARD BOREHOLE LOGS DULY MARKED ON GEOLOGICAL PLAN/ SECTIONS.

Please refer to Plate no. IV

h) GEOLOGICAL SECTIONS MAY BE PREPARED ON NATURAL SCALE OF GEOLOGICAL PLAN AT SUITABLE INTERVAL ACROSS THE LEASE AREA FROM BOUNDARY TO BOUNDARY:

Please refer to Plate no. V-A

i) BROADLY INDICATE THE FUTURE PROGRAMME OF EXPLORATION WITH DUE JUSTIFICATION (DULY MARKED ON GEOLOGICAL PLAN YEAR WISE LOCATION IN DIFFERENT COLOURS) TAKING INTO CONSIDERATION THE FUTURE TENTATIVE EXCAVATION PROGRAMME PLANNED IN NEXT FIVE YEARS AS IN TABLE BELOW: -

To know out further depth i.e. influence of Dolomite, ten vertical core-bore holes for avg. 30 m depth each has been proposed as under:

YEAR	NO. OF BORE HOLES (CORE/RC/DTH)	GRID INTERVAL	TOTAL METERAGE	NO. OF PITS DIMENSION AND VOLUME	NO. OF TRENCHES DIMENSION AND VOLUME
DURING SOM PERIOD	10 NO. CORE	100 m	300 m	NOT PROPOSED	NOT PROPOSED

Justification

In compliance of UNFC norms and cover the entire area under G1 i.e. 111/ 211, ten bore holes have been proposed to establish the reserves in G1 category.

j) RESERVES AND RESOURCES AS PER UNFC WITH RESPECT TO THE THRESHOLD VALUE NOTIFIED BY IBM MAY BE FURNISHED IN TABULAR FORM AS GIVEN BELOW: (AREA EXPLORED UNDER DIFFERENT LEVEL OF EXPLORATION MAY BE MARKED ON THE GEOLOGICAL PLAN AND UNFC CODE FOR AREA CONSIDERED FOR DIFFERENT CATEGORIES OF RESERVES/ RESOURCES ESTIMATION MAY ALSO BE MARKED ON GEOLOGICAL CROSS SECTIONS).

SUBMIT A FEASIBILITY/ PRE-FEASIBILITY STUDY REPORT ALONG WITH FINANCIAL ANALYSIS FOR ECONOMIC VIABILITY OF THE DEPOSIT AS SPECIFIED UNDER THE UNFC FIELD GUIDELINES MAY BE INCORPORATED:

RESERVES

UNITED NATIONS FRAMEWORK CLASSIFICATION (UNFC) OF MINERAL RESERVES AND RESOURCES

The reserves/ resources have been recalculated under the Stratiform, Stratabound and Tabular deposit of irregular habit.

Geological Reserves

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

Geological study of the area:

The lease area has been geologically proved by detailed exploration i.e. two bore holes/presently working and old pits, further continuity of mineralization has been seen in adjacent and nearby mines. The eastern part is capped by chert with dolomite from MRL 462m to 451m and below this chert capping dolomite is continued up to pit bottom i.e. from MRL 451m to 427m and dolomite continuity has been explored with in

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/20--

pit & drilled bore holes in the eastern direction from MRL 450m to 427m while western part is capped by alluvial of average 1m thickness over the dolomite formation having average depth of 4m in dolomite zone up to MRL 450m. All the pits are within 100-150m radial influence from each other hence whole area is considered mineralized and categorization point of view, G1 is considered for the eastern part where dolomite occurs from MRL 462m to 427m and lateral influence is considered up to 150m from the pit face i.e. approx **8.17 ha** comes under G1 and rest area in western direction **11.053 ha** is considered under G2 and here dolomite is considered from MRL 454m to 450m as per geological findings, while below G2,G3 is considered for average8m depthwise in 11.053 ha area upto MRL 442m. The chert zone findings respective to G1, G2 and G3 plotting has been discussed in coming paras. The dolomite beds are steeply dipping towards south and belong to the Mahakaushals.

Dolomite bed should be mineralized depth wise. Succession of local geology -

Lateritic Soil + chert with dolomite

Dolomite

Base not known

STRUCTURAL FINDINGS

Strike is ENE-WSW to E-W, and dipping is 60°-70° towards S.

The UNFC consist of a three dimensional system with following three axes-

1. Geological Assessment
2. Feasibility Assessment
3. Economic Viability

The reserves/ resources have been recalculated under the Stratiform, Stratabound and Tabular deposit of irregular habit.

Evaluation of area on UNFC Classification Basis
Tabulated information is as follows-

1. **Stratiform, Stratabound and Tabular Deposits of irregular Habit**

UNFC Categorization = 121/122		
1.Geological Axis:1	**G1 & G2 (Detailed & General Exploration) UNFC norms**	**ACTUAL**
	1.Geological Survey: (i) Mapping-1:For coal, mapping 1:5000;for other minerals1:1000 (ii)Preparation of detailed topographical-cum-geological map including all surface geological features, extent of deposit, structure, location of boreholes, assay plan and sections of exploratory mine development and borehole data; (iii)Topogrid/ triangulation stations/identified fiducial linking in the maps.	**Geological Survey:** (i) & (ii) Area is surveyed and geology is marked on a map prepared on 1:1000 scale. The lease area has been developed with seven pits with average area of 4.5416ha and pit wise influence eastern side has MRL 447m at pit bottom while western side has average pit bottom of 450m Keeping 100-150m radial influence from Pit no. 3 about 8.17ha area has been considered under G1 with Chert capping along with dolomite from MRL 462m to 451m (average 7m) then dolomite is considered from 451m to 427m (24m) thick dolomite deposit and rest area 11.053ha is coming under 200m influence from each pit thus considered under G2 and in this zone about 2.20ha area is coming under chert zone (chert with dolomite) for average 3m thickness MRL(454-451m) resting over dolomite up to MRL 450m while the area other than chert zone has average 1m alluvial soil which is resting over dolomite for average 4m thick deposit MRL(454-450m) and has been marked on Geological Plan and Section. Structurally it is showing ENE-WSW to E-W

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

		strike and dipping 60° to 70° due South. LD & SMS grade is uniform over the demarcated area of the lease. (iii) Area is small; the lease area boundary pillar points have been given with latitudes and longitudes. Please refer to Plate no.IV & V
	2. Geochemical Survey: Detailed grid pattern sampling and analysis.	**2. Geochemical Survey:** Not required
	3. Geophysical Survey: Detailed and specific borehole geophysical survey.	**3. Geophysical Survey:** Not required
	4.Technological: (i) Pitting - 2 to 5 per sq. km. for simple deposits; (ii) Trenching - At spacing of 200-300m; (iii) Drilling- closer spaced (with definite grid pattern) than that for G2 category; For coal, i) Density of boreholes to be 12 to 15 per sq.km. depending on the complexities for geo-structural proving. ii) For opencast project grid spacing may be 100m x 50m depending on the geology, weather mantle cover, burning nature of coal. (iv) Exploratory mining and check drilling results if possible; (v) Sampling- systematic pit and trench sampling, core and sludge sampling for laboratory scale and bulk sample for the pilot plant scale beneficiation studies.	i) Pitting: 07pits, total area 4.5416 ha for 3-14m (see the details above) Working- (ii) Trenching: Not done (iii) Drilling: Two noncore bore holes up to MRL 427 m i.e. lease area has Dolomite from 465 m to 427/450 m under G1/G2 respectively. For Chemical analysis (please refer to annexure no.III) मध्यप्रदेश गौण खनिज नियम 1996 के नियम 42 के अन्तर्गत अनुसोदित
	5. Petrographic and mineragraphic study: Refining of data on the petrographic character of rocks of the deposit and its surroundings, alterations (if any), including study of grain size texture gangue and its liberation characteristics for further refining of data	5. It has been done only megascopically where all necessary characteristics like non crystalline, medium to fine grained grayish white color, white streak and non metallic lustre are matching Dolomite.
	6. Geostatistical analysis of borehole data (thickness of ore : waste encountered in holes, assay values of samples if considered necessary.	6. The lease area metasedimentary beds (Dolomite) are steeply dipping. The proposed exploration will establish additional reserves.
Feasibility Axis:2	**F 2(Feasibility Study) UNFC norms**	
	1.Geology: Local geology, mineralogy, identification of ore types and geometry.	Local geology belongs to Mahakaushal Group of rocks of lower to middle Proterozoic age. The major litho unit is Chert along with dolomite. The trend of rocks is ENE-WSW and dipping 60°-70° towards S.
	2. Mining: Methods, pre-production plan, development plan, manpower (rough estimate).	Opencast mine, 80% recovery, avg. production will be **303737 t** say **3.0 Lac t** for the period, lateral and depth wise development proposal to previous excavation manpower will be around 50 along with all statutory qualified skilled, semiskilled and unskilled to achieve the proposed production.
	3. Environment: Base line data on environment.	Lessee has obtained EC for 48000t per year and after the approval of this document lessee will proceed to obtain new EC/NOC as per SOM production. All air, water and noise pollution is within permissible limit. There are no major surface water bodies. The ground water is available in the form of hand pump, near the lease area. Ground water level is below the conceptual pit depth proposed as per the present knowledge of deposit. Present OB dumps are of Chert and alluvial soil and will be rehandled as per given details in conceptual plan.
	4. Processing: Proven laboratory scale/pilot	The winned dolomite can be sold in the market and

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. ROP/DGMMP/002/

	scale beneficiation, investigation data, likely establishment.	simultaneously it can be used in their captive plant in Odisha. In due course of time dolomite as per requirement will be used for their plant and further it will be directly purchased by lessee crushing units for sizing of dolomite (details are given in Chapter A-6.0)
	5. Infrastructure and services, construction activities: Brief details	5. As shown on Surface Plan the lessee has developed road, site office etc.
	6. Costing: Capital and operating cost rough estimates based on comparable mining operations. **7.Marketing**: Overview like industrial structure, demand supply relation, pricing, etc. **8. Economic viability:** Preliminary study of cash flow forecasts.	6-8. This is a running mines for last 25 years, dolomite of the area is of well accepted as SMS and LD grade and further profit is Rs. 60-70/- per tonne which is quite higher than the interest incurred on invested amount.
	9. Other factors: Statutory provisions relating to labor, land, mining, taxation, etc.	Lessee is following all the statutory provisions under different heads.
	Economic Inference UNFC norms	
Economic Axis:1	1. Detailed exploration.	Detail exploration is meant by working pits of 4.5416 ha for average 3-14m thick dolomite.
	2. Mining report /mining plan / working mines.	Present exploration has proved that the mineral is Dolomite; this Scheme of Mining is being submitted under Rule 42(F) & 42(J-2) of MP MMR 1996. Please refer to page no. 5-61.
	3. Specific end-use grades of reserves (above economic cut-off grade).	Please refer to next Para
	4. Specific knowledge of forest/non-forest and other land use data.	It is a forest land Sanctioned and used for Dolomite mining.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमति

UNFC Categorization = 333		
1.Geological Axis:3	**G3 (PROSPECTING) UNFC norms**	**ACTUAL**
	1.Geological Survey : (i) Mapping on 1:50,000 to 1:25,000 (for coal ,lignite exploration on 1:10000) (ii) Linking of maps so prepared with topo-grid; (iii) Assessment of lithology, structure, surface mineralization, analysis of old history of mining.	**1.Geological Survey :** Area is surveyed and geology is marked on a map prepared on 1:1000 scales. Keeping the parameters of G2 and present knowledge of the deposit and nearly working mines, the lease area has more 25-30m thick dolomite, thus it is concluded and assumed that at least 8m i.e. up to 442m RL thick deposit should be continued below the G2 area i.e. the entire lease area is considered for avg. 8m thick deposit under G3 and is marked on Geological Plan and Section. Refer to Plate no. V
	2. Geochemical Survey: Grid geochemical sampling - rock type wise and if necessary soil domain wise (for all metallic mineral exploration)	**2. Geochemical Survey:** Not required
	3.Geophysical Survey: Detailed ground geophysical wok	**3. Geophysical Survey:** Not required.
	4.Technological: (i) Pitting / trenching/ drilling depending on variability (ii) Selection of drilling sites best suited to unravel the lithological/structural complexities :	**4. Technological:** Keeping the parameters as per Geological Study the entire area should have 8m avg. (up to MRL 440m) thick dolomite bed below the G2 area.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

	5.Petrographic: Petrographic study of rocks of the deposit and its surroundings alterations(if any) connected mineralization (iii) Determination of phase in which minerals of interest occur (iii) Mineralogical studies including paragenesis identification of zones grain size distribution, overall characteristics useful minerals etc.	5. It has been done only megascopically where all necessary characteristics like non crystalline, medium to fine grained grayish white color, white streak, non metallic lustre are matching dolomite.
Feasibility Axis:3	**F3 (Geological Study) UNFC norms**	
	1. Geological and related study (i)Geological study encompassing reconnaissance to prospecting, general/ detail exploration. (ii)Geological map depicting extent of mineralization lithology/ host rock, mineralogical and chemical data and its interpretations studies on amenability to beneficiation, recoveries and their estimates	(i) Local geology belongs to Mahakaushal Group of rocks of lower to middle Proterozoic age. The major litho unit is dolomite. The trend of rocks is ENE-WSW and dipping 60^0-70^0 due S . (ii) Keeping the geological consideration and extent of the area below G2 should have 8m average thick dolomite zone.
	(iii) Infrastructure (iv) Environmental: Meteorological and preliminary ecological data of area if possible 2. The activities as above or less than that required for F-2	(iii) Infrastructural point of view it is well connected by tar road, all facilities like water and electricity is easily available near the area. (iv) As discussed earlier para the environmental point of view air water and noise pollution is within permissible limit and production limit will be as per SPPCB NOC. 2. None
	Economic (Intrinsically Economic) UNFC norms	
Economic Axis:3	1. Reconnaissance to detailed geological study, rough estimate of grades (may be below economic cutoff) general idea about forest non forest and land use status 2. The activities as above or less than that required for E-2	The reconnaissance to detail study of the area is showing steeply bedded deposit. The recovery is taken as per G2 i.e. 80% of ore zone. The present resource of Dolomite is 1874589 t. The area is forest land being used for mining since 25 years 2. None

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

k) FURNISH DETAILED CALCULATION OF RESERVES/ RESOURCES SECTION WISE (WHEN THE MINE IS FULLY MECHANIZED AND DEPOSIT IS OF COMPLEX NATURE WITH VARIATION OF SIZE, SHAPE OF MINERALIZED ZONES, GRADE DUE TO INTRUSION WITHIN ORE ZONE ETC., AN ATTEMPT MAY BE MADE TO ESTIMATE RESERVES/ RESOURCES BY SLICE PLAN METHOD). IN CASE OF DEPOSITS WHERE UNDERGROUND MINING IS PROPOSED, RESERVES/ RESOURCES MAY BE ESTIMATED BY LEVEL PLAN METHOD, AS APPLICABLE, AS PER THE PROPOSED MINING PARAMETERS:

GEOLOGICAL AXIS: In Stratiform deposit.

The lease area is geologically proved by detailed exploration by existing working pits/ nearby working mines /drilled bore holes. The eastern part is capped by chert with dolomite from 462m to 451 and below the chert capping dolomite is continued up to the pit bottom i.e. 451m to 427m while western part is capped by alluvial soil of 1m average thickness over the dolomite formation up to 450m. All the pits are within 100-150m radial influence from each other hence whole area is considered mineralized and categorization point of view, G1 is considered for the eastern part where dolomite is from MRL 462m to 427m and lateral influence is considered up to 150m from the pit face while G2 is considered in western

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMM/002/2013

considering the present knowledge of the deposit and surroundings the working mines have more than 25m thick dolomite zone therefore average 8-10m thick dolomite (up to MRL 442m) has been considered under G3 i.e. below the area of G2.

FEASIBILITY AXIS:

As this is a small mine, feasibility has already been established from mines opening with Rs. 60-70/- per tonne profit hence the present feasibility for this area is considered to be of pre-feasibility status. Therefore feasibility axis under UNFC for the deposit is F = 2.

ECONOMIC AXIS:

On the basis of feasibility of Dolomite, economic viability of the deposit has been established presently to workout for G1 + G2 = 31 m.

Sub-grade: No sub-grade Dolomite is likely to be generated.

UNFC CATEGORIZATION OF RESERVES

ORE ZONE VOLUME IN M^3

Parameters considered -

1. Category : 'A' Category (OTFM)
2. Area : **19.223 hectares**
3. Area of G1 = 8.17ha (Capping area of Chert with Dolomite resting over dolomite) upto MRL 450m
   G2 = 11.053 ha (Capping area of Chert with Dolomite 2.20 ha) upto MRL 450m
   G3 = depth wise below G2 in 11.053 ha upto MRL 442m
4. Total mineralized area: 19.223 ha (MRL up to 450/427 m)
5. Stratiform Dolomite
6. OB: Western part Alluvial for 1m (average) and eastern part has Chert with dolomite capping for average 7m thick (462m-451m).
7. Bulk Density: Dolomite = 2.65 t/cu.m. & Waste: 1.4 t/cu.m. (weathered formation), lateritic soil: 2.7 t/cu.m. (chert formation)
8. Recovery of Dolomite: 20% within chert zone and 80% within dolomite zone

Dolomite zone in m^3

G1

CHERT WITH DOLOMITE FROM 462M TO 427M

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमो...

CATEGORY	AREA - M^2	THICKNESS - M	VOLUME M^3	DEPLETED VOLUME OF PIT - M3	LEFT VOLUME - M^3
MEASURED MINERAL RESOURCE 331	81700	7m	571900	104150	467750
TOTAL 331					**467750m^3**

**VOLUME OF PIT IN MINERAL ZONE*

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

DOLOMITE ZONE 451-427M

CATEGORY	AREA - M^2	THICKNESS - M	VOLUME - M^3	DEPLETED VOLUME OF PIT - M^3	LEFT VOLUME - M^3
MEASURED MINERAL RESOURCE 331	81700	24m	1960800	49150	1911650
TOTAL 331					**1911650m^3**

**VOLUME OF PIT IN MINERAL ZONE*

G2

CHERT WITH DOLOMITE FROM 459M TO 451M

CATEGORY	AREA - M^2	THICKNESS - M	VOLUME - M^3	DEPLETED VOLUME OF PIT - M^3	LEFT VOLUME - M^3
INDICATED MINERAL RESOURCE 332	22000	3m	66000	2790	63210
TOTAL 332					**63210m^3**

**VOLUME OF PIT IN MINERAL ZONE*

CATEGORY	AREA - M^2	THICKNESS - M	VOLUME - M^3	DEPLETED VOLUME OF PIT - M^3	LEFT VOLUME - M^3
INDICATED MINERAL RESOURCE 332	110530	4m	442120	50264	391856
TOTAL 332					**391856m^3**

**VOLUME OF PIT IN MINERAL ZONE*

G3 (From MRL 450m to 442m, below G2)

CATEGORY	AREA - M^2	THICKNESS - M	VOLUME - M^3	DOLOMITE M^3
INFERRED MINERAL RESOURCE 333	110530	8m	884240	884240
TOTAL 333				**884240m^3**

➢ GEOLOGICAL RESOURCES IN TONNES

Parameters considered

Sub-grade Dolomite = Nil

Mineral rejects = Nil

Intercalated waste + volume of voids = **20%** or I = Incidence of geological resource in ore zone **80%** by volume in dolomite zone (below the chert capping) while in chert zone dolomite is **20%** and waste is considered for **80%.**

MEASURED MINERAL RESOURCE (331)

Measured Mineral Resource has been considered for eastern part and calculated up to present pit depth of MRL 427m from recovery point of view the Chert zone has dolomite recovery considered with 20% (from 462m to 451m) and below the capping of Chert the dolomite (451m to 427m) has rest 80% recovery and area of mineralization under this category is 8.17 ha area.

Under this category the 121 will be the reserve and rest will be resource under 221 as prefeasibility resource.

Chert zone along with dolomite- MRL 462-451m

467750 x 20% x 2.65 t/cu.m. = 247908 t

Dolomite from 451-427m

1911650 x 80% x 2.65 t/cu.m. = 4052698 t

331 = 247908 + 4052698 = 4300606 t

INDICATED MINERAL RESOURCE (332)

Indicated Mineral Resource has been considered for western part and calculated up to present pit depth of MRL 450m in western part i.e. average 4m thick dolomite deposit is measured between 454-450m over the 11.053 ha area and in this category about 2.20 ha area is coming under chert capping zone for average 3m depth. Under this category 122 will be the reserve and rest will be resource under 222 as prefeasibility resource.

Chert zone along with dolomite- MRL 459m to 451m

63210 x 20% x 2.65 t/cu.m.= 33501 TONNES

Dolomite from 454-450m (average)

391856 x 80% x 2.65 t/cu.m. = 830735 TONNES

332 = 33501+830735 = 864236 t

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INFERRED MINERAL RESOURCE (333)

Inferred mineral resource has been calculated for extrapolation made below the G2 area i.e. average 8m average thick dolomite i.e. up to MRL 442m is considered over the lease area. In this category resources will be converted to reserves only after result of proposed exploration.

884240 x 80% x 2.65 t/cu.m. = **1874589 TONNES**

I) RESERVES/ RESOURCES:

MINERAL RESOURCES: (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	Resources in Tonnes	Grade
	DOLOMITE	
G1 - Detailed Exploration	4300606t	SMS & LD GRADE
G2 - General Exploration	864236t	
G3 - Prospecting	1874589t	
G4 - Reconnaissance	-	

➢ **122 RESERVES**

Parameters considered-

Unmineable portion of lease area due to

Barrier zone

P1= Average perimeter along lease boundary for loss in 7.5m (G1) = 1020 m & G2 = 1880m & 316m

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. ROP/DGMMP/002/2013

P2= Average cross sectional area along slope loss in G1 zone = 9m² and 300m² in chert and dolomite zone with average 980m and 790m perimeter while in G2 negligible area will be blocked as the bench height will be 6m.

Electric line barrier zone area: 50m safe distance from electric line on either side of electric line approx area comes under 8000 m² with average 4m thickness deposit of dolomite in G2

Further there are no other losses due to legal provisions or cut of grade problem of dolomite hence not considered.

121 IN TONNES

Reserves: Out of 331

PROBABLE RESERVES (121) = (331- 221)

221=Reserves blocked in boundary and slope from G1 area

PREFEASIBILITY MINERAL RESOURCE (221):

Under the statutory Rules (ore blocked in barrier zone and for maintaining the benches slope) the exploitation cannot be done in this area.

CATEGORY	ORE BLOCKED IN 7.5m BARRIER ZONE-T	ORE BLOCKED IN MAINTAINING THE SLOPE OF BENCHES - T
PRE FEASIBILITY MINERAL RESOURCE (221)	P1x7.5M x MINERAL THICKNESS-M x BD **CHERT ZONE 462m-451m** 1020 x 7.5 x 7 x 0.20 x 2.65 = 28382 t **DOLOMITE ZONE 451m-447m** 1020 x 7.5 x 24 x 0.80 x 2.65 = 389232 t	Average cross sectional area in m² x mean length-m(P2) x BD **CHERT ZONE 462m-451m** 9m² x 980 x 0.20 x 2.65 = 4675 t **DOLOMITE ZONE 451m-447m** 300m² x 790 x 0.80 x 2.65 = 502440 t
TOTAL	**924729 t**	

121 = (4300606 t - 924729 t) = **3375877 t**

122 IN TONNES

Reserves: Out of 332

PROBABLE RESERVES (122) = (332 - 222)

222 = Reserves blocked in boundary and slope from G2 area

PREFEASIBILITY MINERAL RESOURCE (222):

Under the statutory Rules (ore blocked in barrier zone and for maintaining the benches slope) the exploitation cannot be done in this area.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMMP/002/2013

CATEGORY	ORE BLOCKED IN 7.5m BARRIER ZONE- T	ORE BLOCKED IN MAINTAINING THE SLOPE OF BENCHES - T
PRE FEASIBILITY MINERAL RESOURCE (222)	P1 x 7.5M x MINERAL THICKNESS-M x BD **CHERT ZONE 459m-451m** 316 x 7.5 x 3 x 0.20 x 2.65 = 3768 t **DOLOMITE ZONE 454m-450m** 1880 x 7.5 x 4 x 0.80 x 2.65 = 119568 t	Average cross sectional area in m^2 x mean length-m(P2) x BD Negligible area will be blocked
	AREA BLOCKED IN ELECTRIC LINE BARRIER ZONE (50M EACH SIDE) AVG. AREA x MINERAL THICKNESS x RECOVERY x BD 8000m^2 x 4 x 0.8 x 2.65 = 67840 t	
TOTAL	**191176 t**	

122 = (864236 - 191176) = **639559 t**

- **RECOVERABLE RESERVES**

C-MINING LOSSES (Loss of mineral during blasting, loading, transportation and other handling operation=neglible)

This is small manual mines hence the mineral will be negligible hence not considered

Recoverable Reserves = 121 x Recovery

3375877 t x 100% = 3375877 t

Recoverable Reserves = 122 x Recovery

673060 t x 100% = 673060 t

APPROVED
Director
Geology & Mining
Madhya Pradesh
मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

- **SALEABLE DOLOMITE**

ROM - (SUB GRADE, MINERAL REJECTS)

In the lease area there is no sub-grade/mineral reject likely to be generated hence ROM and saleable will be the same, thus saleable ore is **121 = 3375877 t** & **122 = 673060 t**

3.4 CATEGORY WISE UPDATED RESERFEVES WITH GRADE (INDICATED END USE GARADE WITH ANALYSIS) AS WELL AS MARGINAL GRADE

GEOLOGICAL RESERVES AS PER UNFC CLASSIFICATION FOR MUGDARA DOLOMITE MINES, AREA 19.223 HECTARES

Classification	Code	Quantity - t	Grade
A. MINERAL RESERVE			
Probable Mineral Reserves	121	3375877 t	LD & SMS
Probable Mineral Reserves	122	673060 t	LD & SMS
B.REMAINING RESOURCES			
Prefeasibility Mineral Resource	221	924729 t	LD & SMS
Prefeasibility Mineral Resource	222	191176 t	LD & SMS
Inferred Mineral Resource	333	1874589 t	LD & SMS

Chemical analysis: Please refer to annexure no.: III

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 2.0

2.0 MINING

a) OPEN CAST MINING

SALIENT DESCRIPTION OF PRESENT MINING METHOD

Presently the mining activity is closed due to operational issue & extension of lease for 50 years. Earlier the mining was being carried out by open cast manual method of mining using hand tools such as spades, chisel, hammer etc. Lumps of Ore minerals are being transported from pit bottom to surface manually on head load using pan wherever required sorting of all minerals was being done and the waste was in the form of lateritic soil as OB and intercalated waste along with chert. From loading point of view, mineral is transported by truck/dumper to user industries. Now open cast method of mining ('A' category Other Than Fully Mechanized Mines) Operation of mining is being carried out by very deployment of heavy earth moving machineries for excavation, loading & transportation on single shift basis in the ore zone. Eight to Nine development cum production benches of 5-6 m height will be developed in the east central part of the mines & width of benches will be as per DGMS requirements not less than the height whereas mineral bench length will be as per production requirement which has been shown in five year table. The use of rock breaker will be done to loosen the boulder and massive formation. Loading of mineral in to truck/ dumper is being done mechanically.

b) YEARWISE TENTATIVE EXCAVATION INDICATING DEVELOPMENT, ROM PITS WISE:

I. INSITU TENTATIVE EXCAVATION

YEAR	PIT NO.(S)	TOTAL TENTATIVE EXCAVATION M³	ROM ORE - M³ / SALEABLE ORE - M³		ROM M³		MINERAL REJECTS - M³	ROM WASTE RATIO
			TOP SOIL	OB/ SB/ IB- M³	ORE - m³	Mineral reject		
1	2	3	4	5	6	7	8	9
					Dolomite			
YEAR 2019-20	As shown on Five year Plan	165482	-	52371	**113111**	-	-	1:0.24
YEAR 2020-21		182151	-	62946	**119205**	-	-	1:0.27
YEAR 2021-22		154572	-	41121	**113451**	-	-	1:0.19
YEAR 2022-23		182876	-	69406	**113471**	-	-	1:0.32
YEAR 2023-24		142314	-	28462	**113852**	-	-	1:0.13

II. DUMP REHANDLING (FOR THE PURPOSE OF RECOVERY OF MINERAL):

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

There are no such dumps.

c) ENCLOSE INDIVIDUAL YEAR WISE DEVELOPMENT PLANS AND SECTIONS SHOWING PIT LAYOUTS, DUMPS, STACKS OF MINERAL REJECT, IF ANY, ETC. IN CASE OF 'A' CATEGORY MINES. COMPOSITE DEVELOPMENT PLANS SHOWING PIT LAYOUTS, DUMPS, STACKS OF MINERAL REJECT, IF ANY, ETC. AND YEAR WISE SECTIONS IN CASE OF 'B' CATEGORY MINES.

Please refer to Plate no. VI

INDRANEEL DAWANDE
Recognised Qualified Person
From DGMMP
Regn. RQP/DGMMP/00212/

d) DESCRIBE BRIEFLY GIVING SALIENT FEATURES OF THE PROPOSED METHOD OF WORKING INDICATING CATEGORY OF MINE:

PROPOSED METHOD OF MINING

Opencast method of mining ('A' category - Other Than Fully Mechanized Mines) has been proposed. All operations of mining will be been done by deployment of heavy earth moving machineries for excavation, loading & transport. Regular drilling will be done for heaving purpose in the lease area. Blasting will be done on regular basis. Random holes of 1.8 m depth will be drilled. Haulage road has been extended to every working bench and to the floor of the quarry.

As per earlier approved SOM, five years of SOM period has ended by 31-03-2019. Hence in continuation of previous period, five year proposal is due from **01-04-2019-20** to **2023-24** under the 'A' category (OTFM) of mining. The mining operations are proposed within the pit as shown on plan. Now in the ensuing years there will be five to six development and production benches i.e. 460 m to 427 m and production benches will be from **B1**-461/460m to 455/ 454m, **B2**- 455/454 m to 451m, **B3** – 451m to 445m, **B4**- 445m to 439m, **B5** – 439m to 433m & **B6**- 433m to 427m. (end of Proposal period). Ensuing year production will be applicable after getting NOC from MoEF/ MPPCB.

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.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

REASONS FOR CHOOSING THE WORK SITE ARE:

Keeping the present development and lessee's interest, the proposed development around the working pit A is to be developed in a better scientific pattern.

Layout of Haulage road: Haulage roads 8-10 m wide will be maintained and developed at required places, it will be laid at maximum 1: 16 gradient from surface stack yard to pit bottom at MRL 427m within bye roads to the faces of individual benches.

Benches in Dolomite: Five to six benches of avg. 5-6 m height as shown on plan in Dolomite will be developed (however sub benching will be done to facilitate jackhammer drilling & blasting). Width of benches will be as per DGMS requirements, and not less than height, whereas the Dolomite bench length will be as per production requirements.

The ROM quantity of Dolomite from individual bench will depend on presence of waste as Weathered Siliceous Dolomite.

DISPOSAL OF OB/ WASTE ALONG WITH GROUND PREPARATION PRIOR TO DISPOSAL OF WASTE REJECT ETC.:

The generated OB/interburden will be dumped within the lease are as shown on plan (See Plate NO. VII). while few existing dumps will be used for backfilling the 7.5m barrier zone, few will be rehandled to from a

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

single dump along 7.5m barrier zone and rest will be kept as it is. For details please refer to Chapter A-4.0 (Waste Management).

YEARWISE DEVELOPMENT AND PRODUCTION

The previous Scheme of Mining period was from 2014-15 to 2018-19 and the lease period expires by **20-04-2024** and then in continuation, hence next Scheme of Mining is due from **2019-20 to 2023-24** and will be effective for the same.

Yearwise details of five year development and production have been given in the below:

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

FIVE YEAR DEVELOPMENT AND PRODUCTION TABLE MUGDARA DOLOMITE MINES AREA 19.223HA

YEAR	YEAR 2019-20				YEAR 2020-21				
BENCH	*PROD B1*	*PROD. B2*	*PROD. B3*	*PROD B4*	*PROD. B4*	*PROD. B1*	*PROD. B2*	*PROD. B3*	*PROD. B4*
AVG. AREA OF EXCAVATION M^2	10708	13748	9864	*6154	*6154	6407	9674	14192	12945*
AVG. HT. OF EXCVATION M	3.0	4.5	6.0	2.0	4.0	3.5	2.25	5.25	3.0
VOLUME M^3	32124	61866	59184	12308	24616	22425	21767	74508	38835
WASTE 80% m^3 } chert +	25699	-	-	-	-	17940	17414	-	-
DOLOMITE IN 20 % T } dolo.	**17026**	-	-	-	-	**11885**	**11535**	-	-
WASTE 20% m^3 }	-	12373	11837	2462	4923	-	-	14902	7767
DOLOMITE IN 80 % T } dolo.	-	**131156**	**125470**	**26092**	**52186**	-	-	**157956**	**82330**
MRL-M	456-451	451-445	445-439	439-437	437-433	460-454	454-451	451-445	445-442
STRIPPING RATIO	1:0.24				1:0.27				
OB IN m^3 OR T	(25699+12373+11837+2462= 52371 m^3) or 73319 t				(4923+17940+17414+14902+7767= 62946 m^3) or 88124 t				
TOTAL PRODUCTION T	**299744 t**				**315892 t**				

BD FOR DOLOMITE - 2.65 t/ cu.m., OB = 1.4 t/cu.m.

**** single bench***

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMMP/002/2013

FIVE YEAR DEVELOPMENT AND PRODUCTION TABLE MUGDARA DOLOMITE MINES AREA 19.223HA

YEAR	YEAR 2021-22					YEAR 2022-23					
BENCH	***PROD B4***	***PROD. B5***	***PROD. B1***	***PROD. B2***	***PROD. B3***	***PROD. B4***	***PROD. B1***	***PROD. B2***	***PROD. B3***	***PROD. B4***	***PROD. B5***
AVG. AREA OF EXCAVATION M^2	12945*	10200	4860	4361	4074	3787	4776	4742	8433	7771	6213*
AVG. HT. OF EXCVATION M	3.0	6.0	3.5	3.0	6.0	6.0	5.5	6.0	5.5	6.0	2.0
VOLUME M^3	38835	61200	17010	13083	24444	22722	26268	28452	46382	46626	12426
WASTE 80% m^3 } chert +	-	-	13608	-	-	-	21014	22762	-	-	-
DOLOMITE IN 20 % T } dolo.	-	-	**9015**	-	-	-	**13923**	**15079**	-	-	-
WASTE 20% m^3 }	7767	12240	-	2617	4889	4544	-	-	9276	9325	2485
DOLOMITE IN 80 % T } dolo.	**82330**	**129744**	-	**27735**	**51821**	**48172**	-	-	**98331**	**98848**	**26344**
MRL-M	442-439	439-433	457-451	451-445	445-439	439-433	461-455	455-451	451-445	445-439	439-437
STRIPPING RATIO	1:0.19					1:0.32					
OB IN m^3 OR T	(7767+12240+13608+2617+4889= 41121 m^3) or 57569 t					(4544+21014+22762+9276+9325+2485= 69406 m^3) or 97168 t					
TOTAL PRODUCTION T	**300645 t**					**300697 t**					

BD FOR DOLOMITE - 2.65 t/ cu.m., OB = 1.4 t/cu.m.

**** single bench***

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMiMP/002/2013

FIVE YEAR DEVELOPMENT AND PRODUCTION TABLE MUGDARA DOLOMITE MINES, AREA 19.223 HA

YEAR	YEAR 2023-24	
BENCH	***PROD B5***	***PROD B6***
AVG. AREA OF EXCAVATION M^2	6213*	19577
AVG. HT. OF EXCVATION M	4.0	6.0
VOLUME M^3	24852	117462
WASTE 80% m^3 } chert +	-	-
DOLOMITE IN 20 % T } dolo.	-	-
WASTE 20% m^3 }	4970	23492
DOLOMITE IN 80 % T } dolo.	**52687**	**249021**
MRL-M	437-433	433-427
STRIPPING RATIO	1:0.13	
OB IN m^3 OR T	(4970+23492= 28462 m^3) or 39847 t	
TOTAL PRODUCTION T	**301708 t**	

BD FOR DOLOMITE - 2.65 t/ cu.m., OB = 1.4 t/cu.m.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMMP/002/2013

APPROVED
Director
Geology & Mining
Madhya Pradesh

TOTAL PRODUCTION AT A GLANCE

YEAR	DOLOMITE - T
YEAR 2019-20	**299744**
YEAR 2020-21	**315892**
YEAR 2021-22	**300645**
YEAR 2022-23	**300697**
YEAR 2023-24	**301708**
Total	**1518686 t**

During the ensuing period i.e. up to 31-03-2024, **1.4175 ha** additional area will be broken while cumulative area will be **5.9591 ha** with average 30-35m depth as shown on plan. Dewatering will be required during the post monsoon season which will be done by 10hp pumps. Discharge water will be channelized through settling tank and desilted water will be used for agriculture or drained in to the nearby nala. During the plan period mine office and site office with all facilities viz. separate toilet for males and females will be maintained as it is in owner's private land.

YEARWISE PRODUCTION FOR ENSUING YEARS ALONG WITH GRADE, BLENDING PROPOSAL IF ANY:

Year wise productions for ensuing SOM period are given as follows:

YEAR	PIT NO.	OVERBURDEN IN M^3	ROM ORE - T/ SALEABLE ORE - T	TOTAL PROD. - T	MINERAL REJECTS/ SUB-GRADE ORE - T	ORE TO OVERBURDEN RATIO
			DOLOMITE - T			
YEAR 2019-20	As	52371	**299744**	**299744**	NIL	1:0.24
YEAR 2020-21	show	62946	**315892**	**315892**	NIL	1:0.27
YEAR 2021-22	n on	41121	**300645**	**300645**	NIL	1:0.19
YEAR 2022-23	plan	69406	**300697**	**300697**	NIL	1:0.32
YEAR 2023-24		28462	**301708**	**301708**	NIL	1:0.13

GRADE

The Dolomite of the lease area is of SMS & LD grade.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

BLENDING PROPOSAL:

Not required as the Dolomite of the area is directly purchased by the end users.

THERE WILL BE FOLLOWING PIT AT THE END OF (FIVE YEAR) PROPOSAL PERIOD i.e. YEAR 2023-24:

Pit No.	Size of the pit at the beginning of proposal period		Size of the pit at the end of (five year) proposal period		Remarks
	Broken Area - ha	Average Height/ Depth -m	Broken Area - ha	Average Height/ Depth-m	
PIT NO. – 1 to 7	4.5416 ha	3-14m	5.9591	30-35m	PROPOSALS ARE GIVEN LATERALLY AND DEPTH WISE

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn.No.RQP/DGMMP/002/2013

ANY CHANGES IN THE PROPOSED METHOD OF MINING AND DEPLOYMENT OF MACHINERY, TOGETHER WITH REASON THEREOF:

Opencast method of mining will be done. All operations of mining will be done by deployment of heavy earth moving machineries for excavation, loading & transport. The formation of the area is directly amenable after drilling and blasting.

Rate of yearly excavation:

Total Volume: 182876 m^3 (maximum including waste)

Minerals in the volume: Dolomite & weathered siliceous waste

Waste: Nil

Bulk Density: Dolomite 2.65 t/ cu.m., Waste: 1.4 t/ cu.m.

Extent of Mechanization:

The Dolomite is compact in nature, hence regular blasting will be required. Drilling of the blast holes is proposed to be done by the compressed air fed jack hammers.

Height of the bench is proposed to be kept at 5 m, where as the Jack hammer drill will make 1.5 m deep hole which will be done in three to four stages.

The specifications of the jack hammer are given below:

मध्यप्रदेश गौण खनिज नियम 1996 के नियम 42 के अन्तर्गत अनुमोदित

A) BROAD DRILLING PARAMETERS:

BURDEN A	SPACING B	DEPTH OF THE HOLE C	OUTPUT/ HOLE A x B x C	METERAGE CAN BE DRILLED PER JACK HAMMER PER DAY OF ONE SHIFT WORKING
1 m	1.2 m	1.5 m	1 x1.2x1.5=1.8m^3	30 m

PROPOSED MAXIMUM GENERATION OF TOTAL VOLUME: 182876 m^3 (avg.)

As per present knowledge of the deposit only 70% will be required for blasting

Hence the total volume required for blasting will be 128013 m^3

NO. OF HOLES = REQUIRED BLASTING QUANTUM IN m^3/ OUT PUT/ HOLE IN m^3

i.e. 128013 m^3/ 1.8 m^3 = 71118 HOLES PER YEAR

PER DAY HOLES = TOTAL HOLES/ NO.OF WORKING DAYS = 71118/ 300 = 237

Total meterage per day 237 x 1.5 = 355.5 say 356

Hence JH required 356/ 30 = 11.86 (Say 12)

About 20% of blasting will be done by JH hence required JH will be 12 x 0.2= 2.4 say 3

Stand by JH = 2

Total number of JH = 3+2 = 5

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

Drilling parameters are as follows:

TYPE	MANUFACTURE	NO.	DIAM. OF HOLE	DRILLING RODS	CAPACITY	MOTIVE POWER	HP
TRACTOR MOUNTED COMPRESSOR & JACK HAMMER	ATLAS COPCO	05	32 mm	1.8 m	210 CFM	DIESEL	50
			JACK HAMMER IS OPERATED PNEUMATICALLY				

COMPRESSOR REQUIREMENT

For the use of 1 jack hammer, one compressor of 6.0 cu.m./ min capacity each will be utilized to meet the requirement of one jackhammer

EXCAVATION AND LOADING

Loading operation at face will be done by excavator's hydraulic shovels of 1.00 cu.m. bucket capacity is proposed to be used for excavation and loading of total volume in m^3.

At the time of operation, proper safety will be taken care by whistling and keeping the person away at safer distance from excavator while it is in operation.

EXCAVATION AND LOADING

Hydraulic shovels of 1.00 cu.m. bucket capacity is proposed to be used for excavation and loading of total volume in m^3.

EXCAVATING PARAMETER

C = Nominal Bucket capacity = 1.00 cu.m.

F = Bucket fill factor = 0.9

S = Swell Factor (at 40% swell) = 0.7

T = Time cycle per pass at 90^0 swing = 30 sec

e = Overall efficiency for one working shift = 0.62

T = Seconds per hour = 3600 sec

n = Number o working shifts/ day = 1

h = Hours per shift = 8

w = Working days in a year = 300 days

Rate of Production

Output/ shovel/ hour = ***{C x F x S x T}/ (t)***

(1 x 0.90 x 0.7 x 3600)/ 30 = 75.6 cu.m.

Output/ Shovel/ year = 75.6 x ***h*** x ***n*** x ***w*** x ***e***

75.6 x 8 x 1 x 300 x 0.62 = 112493 cu.m.

Number of excavators

Maximum handling of the material required

Total volume (maximum) = 182876 m^3

No of excavators (shovels) required = 182876 m^3/ 112493 = 1.62, say two & 01 standby

TYPE	NO	Size/ Capacity	Manufacture
Hydraulic Shovels	03	1 cu.m. bucket	TATA HITACHI EX-100

The excavator will be used on hire basis at the time of requirement.

TRANSPORTATION

Transportation of ore and waste:

As the lease area is having the mineralization Dolomite with re-handling proposal of old waste dumps. The maximum production of Dolomite including waste is 404016 t per year.

1. Maximum annual production = (315892 + 88124) = 404016 t
2. Average daily quantum = 404016/ 300 = 1346.7 say 1347 t per day
3. Capacity of the dumper = 24 t
4. Average load from mines site to dumping yard = 2 km (to and fro)
5. Average speed of the dumper = 20 KMPH
6. Time required per trip = 60 (minutes) x 2 km (distance)/ 20 KMPH (SPEED) = 6 Minutes
7. Unloading time = 3 min
8. Loading time = 10min (digging, raising swinging and unloading)
9. Extra time for other activity = 8 min
10. Total time taken by one dumper = 27 min.
11. Per day quantum = 1347 tonnes
12. Number of trips of dumper = 1347/ 24 = 56.12 say 56
13. Total time for all trips = Total time x No. of trips/ 60min (per hour): 27x56/60 = 25.2 say 26 min
14. Effective hours per shift = 6hrs out of 8hrs
15. Required round per dumper per shift = 6 hrs/ per dumper capacity = 360 min/6min = 60 rounds.
16. Required per day dumper = Total trips of dumper/ total trip of one dumper = 26/ 27 =0.96 say 1

Stand by dumper =1

Total number of dumpers = 1+1 = 2

The Dolomite of the area is LD and SMS grade and presently it is being supplied to Bhilai Steel Plant and in future it is likely to be continued and will find the market in LD grade (refractory).

Miscellaneous: -

For drinking and sprinkling purpose water will be required.

Type	Nos.	Size/ Capacity	Manufacture	Motive Power	H. P.
Tractor with Water Tanker	1	10 kl	L&T	Diesel	50

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

LIST OF PROPOSED MACHINERY (ON HIRE BASIS)

S.NO.	LIST OF MACHINES	MANUFACTURE	EXISTING	PROPOSED
1.	HYDRAULIC EXCAVATOR (BACKHOE SYSTEM) TATA HITACHI 200	TATA	-	03
2.	DUMPERS -24 TONNES CAPACITY	TATA	-	03
3.	TRACTOR & WATER TANK	HINDUSTAN	01	-
4.	TRACTOR (HINDUSTAN) COMPRESSOR (ATLAS COPCO)	HINDUSTAN AND ATLAS COPCO	-	05
5.	JACK HAMMER	ATLAS COPCO 32MM DIA.	-	05
6.	PUMPS (DIESEL) 10HP	(CROMPTON)	-	01
7.	DRILL , OTHER TOOLS & SPARES	AS PER REQUIREMENT		
8.	MINING SAFETY EQUIPMENTS AS SAFETY SHOES, HELMETS, HAND GLOVES, LEG GUARD ETC.	AS PER REQUIREMENT MMR 1961		
9.	MINING EQUIPMENTS SUCH AS CROWBAR, PICK-AXE, SPADE, CHISEL ETC.	AS REQUIRED		

BLASTING: -

The mineralization in the lease area after blasting is amenable to direct excavation by hydraulic excavators, based up on the past mining activity, about 80% of the total excavation is considered for the blasting:

(A) BROAD BLASTING PARAMETERS:

PARAMETERS	JACK HAMMER
Spacing:	1
Burden:	1.2
Depth of Hole:	1.8
Powder Factor:	8 t/ kg
Dia. of hole:32mm	32 mm

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

B) TYPE OF EXPLOSIVES USED/ TO BE USED

Gunpowder with safety fuse or special gelatin having 80% strength will be used for blasting

(C) POWDER FACTOR IN ORE AND OVERBURDEN: -

Powder factor in ore & waste will be 8 tonnes per kg of explosive.

Explosive Consumption

Powder factor: 8 t/ kg

Max. Yearly production: 404016 m^3 (Including waste)

70% of excavation for blasting: 282811 m^3

Average daily excavation: 282811m^3/ 300 = 942.70 t Say 943 t

Average quantum of explosives to be required daily = 943/8 = 117.875 say 118 kg

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

D) WHETHER SECONDARY BLASTING IS NEEDED:

Secondary blasting will not be needed

STORAGE OF EXPLOSIVE:

As this is a running mine; the lessee will purchase explosives from an authorized agency holding the license from the Controller of Explosives Agra or Nagpur. In the mean time it is advised to apply for explosive license.

PRECAUTIONS TO BE OBSERVED DURING DRILLING AND BLASTING

Following precautions will be taken during blasting period. Sufficient warning by signal is given over the entire area within the danger zone & it will be ensured that all persons within such area have taken proper shelter. Wet drilling is to be done in land holes as well as jack hammer drilling. Suitable air respirator will be provided to the drillers. During blasting, controlled blasting will be done and not more than six holes will be blasted at a time and no hole will be over charged with explosives.

Muffle blasting will be done to prevent flying fragments, which may cause injury to local inhabitations within danger zone. Muffle blasting will be carried out by keeping sand filled bags on wire net placed on holes.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

Quality control:

In-spite of the fact that the grade variation in the production may arise, presently all the grades have good marketing. In the event of getting the sub grade of Dolomite, it will be stacked till the further directives.

Any change in proposed method of mining and development of machinery:

As discussed earlier, the mining in the area has to be done by semi- mechanized method with following machineries:

1. Drilling by Jackhammer drill.
2. Disposal of mineral rejects from mining faces to stockyard to dumping yard by trucks & tippers.
3. Supply of drinking water to storage tank near mine faces; from well, by diesel operated pump.
4. Spraying of water on mine roads by water tankers.

At the time of operation, proper safety will be taken care by whistling and keeping the person away at safer distance from excavator while it is in operation.

f) CONCEPTUAL MINE PLANNING UPTO THE END OF LEASE PERIOD TAKING INTO CONSIDERATION THE PRESENT AVAILABLE RESERVES AND RESOURCES DESCRIBING THE EXCAVATION, RECOVERY OF ROM, DISPOSAL OF WASTE, BACKFILLING OF VOIDS, RECLAMATION AND REHABILITATION SHOWING ON A PLAN WITH FEW RELEVANT SECTIONS

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

f. 1 Anticipated Mine Life

Mine life = Reserves/ avg. per year average production

= (3375877+673060) = **4048937 t** / 303737 t (avg. per year production) = 13.33 say **14 years**

Note: Mine life may change with respect to production. The workings are conceptualized on the basis of present knowledge of deposit which may change after further proving of deposit.

CONCEPTUAL EXPLORATION

Present exploration is in the form of excavations of present pits 4.5416 ha for avg. depth 3-14m and G1 & G2 has been proved for avg. thickness of 24 + 7 = 31m for dolomite.

EXPLORATION

AS ON DATE			DURING PROPOSAL PERIOD		
TYPE	QUANTUM NO./ SIZE	AREA COVERED	TYPE	QUANTUM NO./ SIZE	AREA COVERED
PITS	As per plan 4.5416 ha for 3-14m	19.223HA	PITS	NOT PROP	-
TRENCH	-	-	TRENCH	NOT PROP.	-
BH	02 BH/ 23-24m	19.223HA	BH	10 BH/ 30m each	19.223HA
OTHER	-	-	OTHER	-	-

LOCATIONS ARE SHOWN ON GEOLOGICAL PLAN

CONCEPTUAL DEVELOPMENT

Present mining is by open cast manual means, confined within the ultimate pit limit of 7.5m. The lease period will end by 24-04-2024 and total mine life is of **14 years**. The workings are conceptualized on the basis of present knowledge of deposit which may change after further proving of deposit.

a) Following pits are available in the area at present:

PIT NO.	BROKEN AREA HA	PIT BOTTOM AREA-HA	SURFACE RL - M	PIT BOTTOM RL-M	BENCHES			
					TYPE	BENCH NO	AVG HT-M	AVG WIDTH-M
PIT- 1	0.2204	0.21	456	450	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT -2	0.9216	0.85	458-454	450				
PIT NO.3+4+5	(1.9610+0.3750+0.9490 =3.285	2.15	462-453	446	CHERT WITH DOLOMITE 462-451M (EASTERN PART) DOLOMITE	B1 B2 B3 B4	460-457=3-4M 457-451=5-6M 451-449=3M 449-447=2M	3-4 8-10 3-4 3-4
*PIT NO.6	0.0330	0.030	456	451	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT NO.7	0.0816	0.079	456	450				
TOTAL	4.5416	3.319						

LOCATIONS ARE SHOWN ON GEOLOGICAL PLAN * single bench

*Already backfilled

b) Following pits will be available at the end of SOM period:

During this period old dumps D1, D2, D3, D4, D5, D19, D20 will be rehandled and dumped in 7.5m barrier zone and pit no.3-4-5 will be merged in to single pit and new dimension of pits will be available at the end of five year as under:

PIT NO.	BROKEN AREA-HA	PIT BOTTOM AREA-M	SURFACE RL-M	PIT BOTTOM RL-M	BENCHES			
					TYPE	BENCH NO	(AV) AVG HT	AVG WIDTH
PIT- 1	0.2204	0.21	456	450	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT -2	0.9216	0.85	458-454	450				
PIT NO.A (developed /merge with one single pit	4.7025	2.15	462-453	446	CHERT WITH DOLOMITE 462-451M (EASTERN PART) DOLOMITE	B1 B2 B3 B4 B5 B6	AS SHOWN ON PLAN FIVE DEVELOPMENT AND PRODUCTION PLAN PLATE ON VI	
PIT NO.6	0.0330	0.030	456	451	ALLUVIAL SOIL DOLOMITE (WESTERN PART)	B1	NO BENCHES HAVE BEEN DEVELOPED BENCH HT IS 6M ALLUVIAL SOIL=1M AND DOLOMITE =1-5MT	
PIT NO.7	0.0816	0.079	456	450				

LOCATIONS ARE SHOWN IN THE FIVE YEAR DEVELOPMENT PLAN

Dolomite to be generated during the proposal period = **1518686 t**

Intercalated Waste to be generated during proposal period = 254306m³ or after SF & CF (112%) **284823m³** will be dumped in the western & southern side of the lease area as shown on pla.

c) Following pits will be available at the end of conceptual period:

In the event of non proving the mineral zone after the carried out exploration, the mined out area will be wire fenced and necessary infrastructure will be shifted to safe distance. At the end of conceptual period following pits will be available:

PIT NO.	BROKEN AREA HA	PIT BOTTOM AREA-HA	SURFACE RL-M	PIT BOTTOM RL-M	BENCHES				OVERALL SLOPE
					TYPE	BENCH NO	Avg. Width	AVG HT	
PIT- A	**16.3005**	14.18	462-453	450/427m	CHERT ALLUVIAL DOLOMITE	B1 B2 B3 B4 B5 B6	5-6m 6m 6m 6m 6m 6m	5-6m 6m 6m 6m 6m 6m	45°

LOCATIONS ARE SHOWN IN THE COCEPTUAL PLAN

Dolomite to be generated during conceptual period = Total reserves - Five year production = (3375877 + 673150) = **4048937 t - 1518686 t** = 2530251 t

OB to be generated during conceptual period: 470018 m³ (192960 M³ CHERT + 277058 M³ ALLUVIAL SOIL) + 221440 m³ (INTERECALATED WASTE FROM DOLOMITE ZONE) = **691458 m³**

(ALL OB DUMPS AT THE END OF FIVE YEAR) = **321132 m³**

CUMUMLATIVE OB = 691458 + 321132 = **1012590 m³**

This conceptual OB will be used for backfilling the western to central part as shown on plan.

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

CONCEPTUAL OVERBURDEN DUMP MANAGEMENT

The conceptual dumping area is chosen beyond the ultimate pit limit on ground which may not cause any land or water pollution.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

a) Following OB dumps are available in the area

Existing Dumps

DUMP NO	TYPE ACTIVE/INACTIVE	QUANTITY M3	BASE AREA HA	(AV)Height	REMARK
D-1	INACTIVE	500	0.025	2m	WEATHERED SILICEOUS MATERIAL
D-2	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-3	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-4	INACTIVE	1000	0.05	2	WEATHERED SILICEOUS MATERIAL
D-5	INACTIVE	1152	0.0384	3	WEATHERED SILICEOUS MATERIAL
D-6	INACTIVE	9000	0.2250	3.5	WEATHERED SILICEOUS MATERIAL
D-7	INACTIVE	2625	0.0750	3.5	WEATHERED SILICEOUS MATERIAL
D-8	INACTIVE	1960	0.056	3.5	WEATHERED SILICEOUS MATERIAL
D-9	INACTIVE	2352	0.0784	3	WEATHERED SILICEOUS MATERIAL
D-10	INACTIVE	720	0.036	2	WEATHERED SILICEOUS MATERIAL
D-11	INACTIVE	1750	0.05	3.5	WEATHERED SILICEOUS MATERIAL
D-12	INACTIVE	5700	0.19	3	WEATHERED SILICEOUS MATERIAL
D-13	INACTIVE	480	0.024	2	WEATHERED SILICEOUS MATERIAL
D-14	INACTIVE	1725	0.0575	3	WEATHERED SILICEOUS MATERIAL
D-15	INACTIVE	840	0.042	2	WEATHERED SILICEOUS MATERIAL
D16	INACTIVE	672	0.0336	2	WEATHERED SILICEOUS MATERIAL
D-17	INACTIVE	1620	0.0540	3	WEATHERED SILICEOUS MATERIAL
D-18	INACTIVE	1500	0.075	2	WEATHERED SILICEOUS MATERIAL
D-19	INACTIVE	2880	0.096	3	WEATHERED SILICEOUS MATERIAL
D-20	INACTIVE	1238	0.0495	2.5	WEATHERED SILICEOUS MATERIAL
D-21	INACTIVE	4050	0.09	4.5	WEATHERED SILICEOUS MATERIAL
D-22	INACTIVE	6336	0.1584	4	WEATHERED SILICEOUS MATERIAL
TOTAL		48900	1.5438		

b) Following OB dumps will be available at the end of proposal period:

For Other details please refer to Chapter A - 4.0.

2019-20 YR PROPOSAL FOR BACKFILLING IN 7.5M BARRIER ZONE

Area to be backfilled	Height of backfilling	Required volume of waste to be backfilled - m^3	Available waste - m^3 (after SF & CF - 112%)	Rehabilitation of backfilled area
0.0525 (ALONG 7.5M BARRIER ZONE)	3 m	1575 m^3	(Old D13 & D14) = 2205m^3*	Afforestation of area will be rehabilitated by fast sowing grass seeds.
AFTER BACKFILLING MRL TO PROPOSED AREA		**ARL BEFORE BF**		**ARL AFTER BF**
ARL		450 m		453 m

*NOTE: 7.5m barrier zone undertaking is annexed at the end of the document. * remaining waste will be used for approach road maintenance*

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

REHANDLING PROPOSAL :-

The following dumps will be rehandled to form a single dump and will be adjusted in 7.5m barrier zone **(NE part)**.

DUMP NO	TYPE ACTIVE/INACTIVE	QUANTITY M3	VOLUME M3	AVERAGE AREA OF REHANDLED DUMP M2	AVG HEIGHT	NEW NAME OF DUMP
D-1	INACTIVE	500	7570	3584	2-3m	RD1 AS WEATHERED SILICEOUS MATERIAL
D-2	INACTIVE	400				
D-3	INACTIVE	400				
D-4	INACTIVE	1000				
D-5	INACTIVE	1152				
D-19	INACTIVE	2880				
D-20	INACTIVE	1238				

INDRANEEL DAWANDE
Recognised Qualified Person
FOR EC & FC

FOLLOWING DUMPS WILL BE PLACED AT THE END OF PROPOSAL PERIOD:

DUMP NO	TYPE ACTIVE/INACTIVE	QUANTITY M^3	BASE AREA - HA	Avg. Height - m	Location
D-6	INACTIVE	9000	0.2250	3.5	As shown on plan
D-7	INACTIVE	2625	0.0750	3.5	
D-8	INACTIVE	1960	0.056	3.5	
D-9	INACTIVE	2352	0.0784	3	
D-10	INACTIVE	720	0.036	2	
D-11	INACTIVE	1750	0.05	3.5	
D-12	INACTIVE	5700	0.19	3	
D-15	INACTIVE	840	0.042	2	
D16	INACTIVE	672	0.0336	2	
D-17	INACTIVE	1620	0.0540	3	
D-18	INACTIVE	1500	0.075	2	
RD1	INACTIVE	7570	0.3584	2-3	
MW1	INACTIVE	284823 (After SF x CF 112%)	1.4550	19-20	
TOTAL		**321132**	**2.7284**		

c) Following OB dumps will be available at the end of conceptual period:

No OB dumps will be available at the end of the conceptual period.

OB to be generated during conceptual period: 470018 m^3 (192960 M^3 CHERT + 277058M^3 ALLUVIAL SOIL) + 221440 m^3 (INTERCALATED WASTE FROM DOLOMITE ZONE) = **691458 m^3**

(ALL OB DUMPS AT THE END OF FIVE YEAR) = **321132 m^3**

CUMUMLATIVE OB = 691458 + 321132 = **1012590 m^3**

This conceptual OB will be used for backfilling the western to central part.

BACKFILLING DETAILS

मध्यप्रदेश गौण खनिज नियम 1996
नियम 42 के अन्तर्गत अनुमोदित

AREA OF BACKFILLING M^2	AVG. DEPTH - M	AVAILABLE AND REQUIRED VOLUME (AFTER SF X CF- 112%)	REHABILITATION
35000	28-30	1012590 m^3	Rehabilitated by afforestation

iv) CONCEPTUAL RECLAMATION AND REHABILITATION:

a) Presently there is 525m^2 broken area within 7.5m barrier zone considered as mined out.

b) The estimated mine life is 14 years from 01-04-2019 and by the end of 31-03-2024 the area will be explored with 10 bore holes and changes will be reflected in due document and with present calculation no mined out land is likely to be generated. Further the earlier generated mined out area of 0.0525ha will be backfilled during the proposal period

c) After proving the non mineral zone, the mined out area will be partly backfilled up to surface (western to central part) and rest will rehabilitated by water reservoir and bench afforestation.

Mined out area = 16.3005 ha will be reclaimed and rehabilitated as under

Backfilling

Average Area of backfilling	Average Depth of backfilling	Available waste - m^3	Rehabilitation
3.50 ha	28-30 m	1012590 m^3	3.50/0.0009 = 3889 trees

Bench afforestation = 7.8525 ha

Water reservoir = 4.948 ha

Depth of water reservoir = 20m

Volume of reservoir = 49480m^2 x 20m = 989600 m^3

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

RECLAMATION AND REHABILITATION STATUS

STATUS	MINED OUT AREA in ha	RECLAMATION BY BACKFILLING in ha	REHABILITATION in ha				REHABILITATION OF DUMP BY COMP. & AFFORESTATION	PROTECTIVE MEASURES FOR DUMPS (GD/RW/ST)
			OF BF AREA	OF BENCH/ SLOPE BY PLANTATION	WATER RESER-VOIR	TOTAL REHABIL-ITATED AREA		
AT PRESENT	0.0525	-	-	-	-	-	-	-
AT THE END OF FIVE YEAR	0.0525	0.0525	0.0525	-	-	-	-	-
AT THE END OF CONCEPTUAL PERIOD	16.3005	3.50	3.50	7.8525	4.948	16.3005	-	-

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

*Afforestation details

FIVE YEAR PLANTATION	CONCEPTUAL AFFORESTATION
Sowing fast growing grass seeds = 0.0525 ha over the backfilled area & 10 trees per year (10 x 5yrs = 50 trees)	Conceptual period Bench afforestation = 7.8525/ 0.0009 = 8725 trees Backfilling area = 3.50/ 0.0009 = 3889 trees

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

v) CONCEPTUAL LAND USE

At the end of conceptual period, total 16.3005 ha area will be developed up to a depth of 30-35 m i.e. RL 427m. The end use will be by making water reservoir which will recharge the ground water, proper haulage road will be developed up to water logged area where villagers can use the water for their needs and further this water reservoir will be used for fisheries. Point wise details of conceptual mining plan as on survey date is given as follows:

Lease area: **19.223 ha**

SR. NO.	HEADS	AT PRESENT - HA	AT THE END OF 5YRS - HA	AT THE END OF CONCEPTUAL PERIOD - HA
1	TOTAL AREA EXCAVATED (BROKEN)	4.5416	5.9591	16.3005
2	AREA FULLY MINED OUT (OUT OF 1)	0.0525	0.0525	16.3005
3	AREA FULLY RECLAIMED (BACKFILLED) (OUT OF 2)	-	0.0525	3.50
4	AREA REHABILITATED (OUT OF 3) BY AFFORESTATION, AGRI USE, HUTMENT ETC.	NIL	-	7.8525+3.50
5	AREA REHABILITATED BY WATER HARVESTING (OUT OF 2)	-	-	4.948
6	AREA FULLY REHABILITATED BY BENCH/ SLOPE AFFORESTATION (OUT OF 2)	-	-	7.8525
7	TOTAL AREA UNDER DUMPS	1.5438	2.7284	-
8	AREA UNDER ACTIVE DUMPS	-	-	-
9	DUMP AREA FULLY REHABILITATED (OUT OF 8)			
10	AREA UNDER DEAD DUMPS			
11	DUMP AREA FULLY REHABILITATED (OUT OF 10)	-	-	-
12	#AREA UNDER MINERAL STACK	-	-	-
13	AREA UNDER ROAD (OUT SIDE PIT)	0.2655	0.2655	-
14	AREA UNDER GREEN BELT (I.E: PLANTATION ON AREA OTHER THAN DUMP AND BACK FILLED AREA)	1.50	1.50+0.045	-
15	#AREA UNDER INFRASTRUCTURE	0.20	0.20	-
16	AREA UNDER TAILING DUMPS	-	-	-
17	AREA UNDER ANY OTHER USE	-	0.005	-
18	UNDISTURBED AREA	11.1721	8.52	2.9225

**DEPTH WISE DOLOMITE IS ANTICIPATED*

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

B. UNDERGROUND MINING

Not applicable.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 3.0

3.0 MINE DRAINAGE

a) MINIMUM AND MAXIMUM DEPTH OF WATER TABLE BASED ON OBSERVATIONS FROM NEARBY WELLS AND WATER BODIES:

As in the area there is no groundwater resource available, yet there is water resource in the form of hand pump/ well near the lease area and depth of WT informed by the lessee of the lease area GWT: 30 m BGL (post monsoon) & 40 m BGL (summer)

GL: 448m

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

b) INDICATE MAXIMUM AND MINIMUM DEPTH OF WORKINGS.

Ensuing five year to conceptual period proposals are given up to ARL 427m which is quite above the ground water table.

c) QUANTITY AND QUALITY OF WATER LIKELY TO BE ENCOUNTERED, PUMPING ARRANGEMENTS AND PLACES WHERE MINE WATER IS FINALLY PROPOSED TO BE DISCHARGED.

As such, there will be possibility of seepage during the rainy season; seepage water may come and whatever dewatering is required during the post monsoon season will be done by the 10 hp pump. Discharged water will be channelized through settling tank situated in the eastern part of the proposal area and de-silted water will be used for agriculture or drained to the nala.

d) DESCRIBE REGIONAL AND LOCAL DRAINAGE PATTERN. ALSO INDICATE ANNUAL RAIN FALL, CATCHMENTS AREA, AND LIKELY QUANTITY OF RAIN WATER TO FLOW THROUGH THE LEASE AREA, ARRANGEMENT FOR ARRESTING SOLID WASH OFF ETC.:

REGIONAL DRAINAGE

Regionally the area comes under Narmada basin, hemmed between Vindhya and Satpura ranges, extends over an area of 98,796 km² (38,145.3 sq mi) and lies between east longitudes 72 degrees 32' to 81 degrees 45' and north latitudes 21 degrees 20' to 23 degrees 45' lying on the northern extremity of the Deccan Plateau. The basin covers large areas in the states of Madhya Pradesh (86%), Gujarat (14%) and a comparatively smaller area (2%) in Maharashtra. In the river course of 1,312 km (815.2 mi) explained above, there are 41 tributaries, out of which 22 are from the Satpura range and the rest on the right bank are from the Vindhya range.[4] Dhupgarh (1,350 km), near Pachmarhi is the highest point of the Narmada basin. The basin has five well defined physiographic regions. They are: (1) The upper hilly areas covering the districts of Shahdol, Mandla, Durg, Balaghat and Seoni, (2) The upper plains covering the districts of Jabalpur, Narsinghpur, Sagar, Damoh, Chhindwara, Hoshangabad, Betul, Raisen and Sehore, (3) The middle plains covering the districts of Khandwa, part of Khargone, Dewas, Indore and Dhar, (4) The lower hilly areas covering part of the west Nimar, Jhabua, Dhulia, Narmada and parts of Vadodara, and (5) the lower plains covering mainly the districts of Narmada, Bharuch, and parts of Vadodara. The hill regions are well forested. The upper, middle and lower plains are broad and fertile areas, well suited for cultivation. The

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. ROP/DGMMP/002/2013

Narmada basin mainly consists of black soils. The coastal plains in Gujarat are composed of alluvial clays with a layer of black soils on the surface. The overall drainage pattern in the district is dendritic.

LOCAL DRAINAGE

Local drainage is governed by the local nala/ low gradient meeting to the Banjar River and this Banjar River is the main tributary of the Narmada River, passes through Mandla District in Madhya Pradesh. The Sulkum River is locally called a nala and is a tributary of the Banjar River.

Water Regime:

As in the area there is no groundwater resource available, yet there is water resource in the form of hand pump/ well near the near the lease area and depth of WT informed by the lessee of the lease area GWT: 30 m BGL (post monsoon) & 40 m BGL (summer)

GL: 448m

- **CLIMATE**

The area witnesses the subtropical climate with an averaging rainfall of 1200 mm annually. The variation in temperature is 46°C to 4°C during summer and winter respectively. The wind generally blows in northeast direction. From November to February the area experiences pleasant winter. March is start of summer, which continues up to June. The monsoon sets in by June and retreats by September. Relative humidity varies from 18% to 80% in a year (Jabalpur Meteorological Department).

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 4.0

4.0 STACKING OF MINERAL REJECT/ 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:

Quality of OB, in general:

1. Soil (Lateritic soil+ chert) as overburden

मध्यप्रदेश ... 1996
के नियम 42 के अन्तर्गत अनुमोदित

Intercalated weathered material:

Existing Dumps

DUMP NO.	TYPE ACTIVE/ INACTIVE	QUANTITY - M³	BASE AREA- HA	AVG. HEIGHT- M	REMARK
D-1	INACTIVE	500	0.025	2M	WEATHERED SILICEOUS MATERIAL
D-2	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-3	INACTIVE	400	0.02	2	WEATHERED SILICEOUS MATERIAL
D-4	INACTIVE	1000	0.05	2	WEATHERED SILICEOUS MATERIAL
D-5	INACTIVE	1152	0.0384	3	WEATHERED SILICEOUS MATERIAL
D-6	INACTIVE	9000	0.2250	3.5	WEATHERED SILICEOUS MATERIAL
D-7	INACTIVE	2625	0.0750	3.5	WEATHERED SILICEOUS MATERIAL
D-8	INACTIVE	1960	0.056	3.5	WEATHERED SILICEOUS MATERIAL
D-9	INACTIVE	2352	0.0784	3	WEATHERED SILICEOUS MATERIAL
D-10	INACTIVE	720	0.036	2	WEATHERED SILICEOUS MATERIAL
D-11	INACTIVE	1750	0.05	3.5	WEATHERED SILICEOUS MATERIAL
D-12	INACTIVE	5700	0.19	3	WEATHERED SILICEOUS MATERIAL
D-13	INACTIVE	480	0.024	2	WEATHERED SILICEOUS MATERIAL
D-14	INACTIVE	1725	0.0575	3	WEATHERED SILICEOUS MATERIAL
D-15	INACTIVE	840	0.042	2	WEATHERED SILICEOUS MATERIAL
D16	INACTIVE	672	0.0336	2	WEATHERED SILICEOUS MATERIAL
D-17	INACTIVE	1620	0.0540	3	WEATHERED SILICEOUS MATERIAL
D-18	INACTIVE	1500	0.075	2	WEATHERED SILICEOUS MATERIAL
D-19	INACTIVE	2880	0.096	3	WEATHERED SILICEOUS MATERIAL
D-20	INACTIVE	1238	0.0495	2.5	WEATHERED SILICEOUS MATERIAL
D-21	INACTIVE	4050	0.09	4.5	WEATHERED SILICEOUS MATERIAL
D-22	INACTIVE	6336	0.1584	4	WEATHERED SILICEOUS MATERIAL
TOTAL		**48900**	**1.5438**		

YEAR WISE GENERATION OB:

YEAR	LATERITIC SOIL	INTERCALATED WASTE	TOTAL - M³
YEAR 2019-20	-	52371 m³	52371 m³
YEAR 2020-21	-	62946 m³	62946 m³
YEAR 2021-22	-	41121 m³	41121 m³
YEAR 2022-23	-	69406 m³	69406 m³
YEAR 2023-24	-	28462 m³	28462 m³

AFTER SF & CF - 112% IN M³

YEAR	OB - M³	TOTAL - M³
	QUANTITY - M³	AFTER SF & CF - 112% IN M³
YEAR 2019-20	52371	58656
YEAR 2020-21	62946	70500
YEAR 2021-22	41121	46055
YEAR 2022-23	69406	77735
YEAR 2023-24	28462	31877

Mineral reject: No mineral rejects are likely to be generated.

Sub grade: No sub-grade Dolomite is likely to be generated.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. ROP/DGMMP/002/2013

b) THE PROPOSED DUMPING GROUND WITHIN THE LEASE AREA BE PROVED FOR PRESENCE OR 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:

Temporary dumping will be done and it will be near to five year working as shown on plate(see plate no. VII).

c) ATTACH A NOTE INDICATING THE MANNER OF DISPOSAL OF WASTE, CONFIGURATION AND SEQUENCE OF YEAR WISE BUILD UP OF DUMPS ALONG WITH THE PROPOSALS FOR PROTECTIVE MEASURES

During Year 2019-20, dump no. D13 & D14 will be rehandled and used for backfilling in 7.5m barrier zone excavation.

2019-20 YR PROPOSAL FOR BACKFILLING IN 7.5M BARRIER ZONE

Area to be backfilled	Height of backfilling	Required volume of waste to be backfilled - m^3	Available waste - m^3 (after SF & CF - 112%)	Rehabilitation of backfilled area
0.0525 (ALONG 7.5M BARRIER ZONE)	3 m	1575 m^3	(Old D13 & D14) = 2205m^3*	Afforestation of area will be rehabilitated by fast sowing grass seeds.
AFTER BACKFILLING MRL TO PROPOSED AREA	**ARL BEFORE BF**			**ARL AFTER BF**
ARL	450 m			453 m

NOTE: 7.5m barrier zone undertaking is annexed at the end of the document

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

REHANDLING PROPOSAL

The dumps in 5 year proposal area will be rehandled and adjusted in 7.5m barrier zone **(NE part)**

DUMP NO.	TYPE ACTIVE/INACTIVE	QUANTITY - M^3	VOLUME - M^3	AVERAGE AREA OF REHANDLED DUMP - M^2	AVG. HEIGHT - M	NEW NAME OF DUMP
D-1	INACTIVE	500	7570	3584	2-3m	RD1 AS WEATHERED SILICEOUS MATERIAL
D-2	INACTIVE	400				
D-3	INACTIVE	400				
D-4	INACTIVE	1000				
D-5	INACTIVE	1152				
D-19	INACTIVE	2880				
D-20	INACTIVE	1238				

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

DUMPING

DUMP MW-1

A	B			C		D		
YEAR	SIZE OF BEGINNING DUMP PORTION AT THE BEGINNING OF THE YEAR			EFFECTIVE QUANTITY DUMPED DURING THE YEAR - M^3	CUMULATIVE QUANTITY DUMPED AFTER SF & CF - 112%	SIZE OF DUMP PORTION AT THE END OF THE YEAR		
	Bottom area m^2	Top area m^2	Avg. height / thickness-m	m^3		Bottom area m^2	Top area m^2	Avg. height/ thickness-m
2019-20	-	-	-	52371 m^3	58656 m^3	3000 m^2	2500m^2	19-20
2020-21				62946 m^3	70500 m^3	6050 m^2	5500m^2	11-12
2021-22	6050 m^2	5500m^2	11-12	41121 m^3	116555 m^3	6050 m^2	5500m^2	12-20
2022-23				69406 m^3	77735 m3	5500 m^2	5000 m^2	14-15
2023-24	5500m^2	5000 m^2	14-15	28462 m^3	109612 m^3	5500 m^2	5000 m^2	14-20

FOLLOWING DUMPS WILL BE PLACED AT THE END OF PROPOSAL PERIOD:

DUMP NO.	TYPE ACTIVE/ INACTIVE	QUANTITY - M^3	BASE AREA-HA	AVG. HEIGHT-M	LOCATION
D-6	INACTIVE	9000	0.2250	3.5	As shown on plan
D-7	INACTIVE	2625	0.0750	3.5	
D-8	INACTIVE	1960	0.056	3.5	
D-9	INACTIVE	2352	0.0784	3	
D-10	INACTIVE	720	0.036	2	
D-11	INACTIVE	1750	0.05	3.5	
D-12	INACTIVE	5700	0.19	3	
D-15	INACTIVE	840	0.042	2	
D16	INACTIVE	672	0.0336	2	
D-17	INACTIVE	1620	0.0540	3	
D-18	INACTIVE	1500	0.075	2	
RD1	INACTIVE	7570	0.3584	2-3	
MW1	INACTIVE	284823 (After SF x CF 112%)	1.4550	19-20	
TOTAL		**321132**	**2.7284**		

4.2 RATE OF YEAR GENERATION OF SUB GRADE MINERAL WITH REFERENCE TO THRESHOLD VALUES AND PROPOSAL FOR STACKING FOR NEXT FIVE YEARS

No generation of sub grade is proposed during proposal period.

4.3 QUANTITY AND GRADE OF SUB-GRADE MATERIAL AVAILABLE AT THE MINE AS ON DATE DULY SUPPORTED BY PLANS AND SECTION

No sub grade mineral is likely to be generated. During proposal period if so generated dolomite <15% MgO,>6% Silica and >12% total insoluble then this dolomite will be blend with high grade dolomite and will be sold to the end users.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 5.0

5.0 USE OF MINERAL AND MINERAL REJECT

a) DESCRIBE BRIEFLY THE REQUIREMENT OF END-USE INDUSTRY SPECIFICALLY IN TERMS OF PHYSICAL AND CHEMICAL COMPOSITION:

The Dolomite of the area is of SMS & LD grade and presently is being supplied to Bhilai Steel Plant and in future it is likely to continue.

CHEMICAL ANALYSIS OF DOLOMITE

Constituent	%
LOI Magnesium Oxide as MgO Calcium Oxide as CaO Silica as SiO_2 Mixed Oxide as R_2O_3 Undetermined as UD	See annexure no. III

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अधीन अनुमोदित

SPECIFICATION - BHILAI STEEL PLANT

Constituent	SP/BF	SMS
MgO	19%(MIN)	20%(MIN)
CaO	29%(MIN)	30%(MIN)
SiO_2	4%(MAX)	3.5%(MAX)
Al_2O_3	-	-
Fe_2O_3	-	-
Al	6%(MAX)	5%(MAX)
Size	10-60 mm	8-20 mm

Specification of LD grade

Constituent	SP/BF
MgO	21%(MIN)
SiO_2	1%(MAX)
Al_2O_3	15(MAX)
Fe_2O_3	1%(MAX)

b) GIVE BRIEF REQUIREMENT OF INTERMEDIATE INDUSTRIES INVOLVED IN UPGRADATION OF MINERAL BEFORE ITS END-USE:

Not available.

c) GIVE DETAIL REQUIREMENTS FOR OTHER INDUSTRIES, CAPTIVE CONSUMPTION, EXPORT, ASSOCIATED INDUSTRIAL USE ETC.

Not applicable.

d) INDICATE PRECISE PHYSICAL AND CHEMICAL SPECIFICATION STIPULATED BY BUYERS

The physical and chemical specifications stipulated by buyers are as given in the above para V- (a) and the Dolomite is directly saleable in the industries after sorting.

e) GIVE DETAILS OF PROCESSES ADOPTED TO UPGRADE THE ROM TO SUIT THE USER REQUIREMENTS

Not applicable because the Dolomite is being purchased by middle person.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 6.0

6.00 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.:

Presently there is no mineral processing except dressing, sizing and sorting of Dolomite.

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

Only lumps of 8"-12" are being dispatched to end users/ middle person.

c) EXPLAIN THE DISPOSAL METHOD FOR TAILINGS OR REJECT FROM THE PROCESSING PLANT

No tailing generation.

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:

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

Not applicable.

e) SPECIFY QUANTITY AND TYPE OF CHEMICALS IF ANY TO BE USED IN THE PROCESSING PLANT:

Not applicable.

f) SPECIFY QUANTITY AND TYPE OF CHEMICALS TO BE STORED ON SITE/ PLANT:

Not applicable.

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:

As such there is no requirement for mining activity. The general requirement of water for drinking and other sprinkling purpose is about 0.5 KL per day. Please refer to previous paras.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A-7.0

7.0 OTHER

(a) SITE SERVICES

Site services in private land, required road has already been constructed, and the first aid facility will be more enhanced.

(b) EMPLOYMENT POTENTIAL

Rate of average annual production is 300000t. Assuming 300 numbers of working days in a year, 1000 t of marketable Dolomite is proposed to be obtained daily. Keeping the output per man, per shift, 2 t, about total 500 number of person should be there in mines, owing to mechanization, the number of persons will be reduced by 90%; hence the required number will be 50.

	EXISTING	ADDITIONAL
Supervisory staff	1	-
Mining engineer	-	1
Geologist	1	-
Compressor operator	1	-
Driller	-	1
Mining mate cum blaster	1	-
Time keeper/ Store keeper cum first aider	-	1
Gardener/ watchman/ pump operator	1	
Labor		
Skilled (10%)	1	3
Semi Skilled (15%)	1	15
Unskilled (75%)	05	25
Total manpower	50	300

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

Working days :-

Avg. annual production 300000 tonnes

Face OMS 20.00 tonnes per man per shift.

IMMEDIATE EFFECT (Under Rule 42 MCDR 1988 through GSR 216(E) dated 29-03-2010

DECLARATION

Statutory requirements regarding miner's health will be implemented as per Rules

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

CHAPTER A - 8.0

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

LAND USE PATTERN

(i) Existing land use pattern of area is as follows:

Degradation Type	Govt. land					Private land					Remarks
	FOREST LAND M²	AGRICUL-TURE LAND M²	GRASS LAND M²	WASTE LAND M²	OTHER	FOREST LAND M²	CROP LAND M²	GRASS LAND M²	WASTE LAND M²	OTHER	
Pits and trenches	-	-	-	45416	-	-	-	-	-	-	-
Dumps of waste and overburden	-	-	-	15438	-	-	-	-	-	-	-
Infrastructure inclusive of office workshop	-	-	-	200	-	-	-	-	-	-	-
Area occupied by roads (footpath)	-	-	-	2655	-	-	-	-	-	-	-
Water bodies like tank/ river/ nala/ plantation	-	-	-	15000	-	-	-	-	-	-	-
Others - unused	-	-	-	111721	-	-	-	-	-	-	-
Total	-	-	-	192230	-	-	-	-	-	-	-

मध्यप्रदेश गौण खनिज नियम 1996 के नियम 42 के अन्तर्गत अनुमोदित

Ownership Status: Govt. Waste Land.

Water Regime:

As in the area there is no groundwater resource available, yet there is water resource in the form of hand pump/ well near the near the lease area and depth of WT informed by the lessee of the lease area GWT: 30 m BGL (post monsoon) & 40 m BGL (summer)

GL: 448 m

The proposals are given quite above to GWT.

WATER QUALITY:

There are no surface water bodies; the ground water is potable and available in the form of well/ hand pump near the lease area. Ground water level is below the conceptual pit depth proposed as per the present knowledge of deposit. After the completion of mining operations in this area the surface water is likely to be contaminated due to wash off from the bench area however bench area will be stabilized and secured against dust being air borne by adequate plantation before the conceptual period is over.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

c) AIR ENVIRONMENT:

(i) Noise (ii) Air (iii) Climatic Condition

IMPACT OF MINING ACTIVITY ON AIR ENVIRONMENT SPECIFICALLY ON:

It is anticipated that the ongoing mining activity dust generation will be due to the movement of trucks and by mining activity like excavation movement of trucks/ tippers etc., which may pollute the air to some extent but spraying of water on road and bench faces before truck movement and loading will control its generation. Once the mining operation in this area is over the ambient air can only be polluted by dust raised from bench area however these bench area will be stabilized and secured against dust being air borne by adequate plantation before the conceptual period is over.

NOISE LEVEL

It will be created by movement of truck/ dumper etc. However noise generated by these will be occurring at very low level.

FLORA:

Regionally the area falls under subtropical climatic zone and sustaining dry tropical land. The common trees are Seja (*Terminalistomentosa*), Achar (*Anogcissuslatifolia*), Lundiya (*Lagerstoemiapurvilora*), Amaltas (*Cassiafistula*) and Mahuwa. In the lease area there are no trees except scattered bushes. Apart from this many varieties of grass creepers and climbers are found.

CLIMATIC CONDITIONS

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

- **CLIMATE**

The area witnesses the subtropical climate with an averaging rainfall of 1200 mm annually. The variation in temperature is 46°C to 4°C during summer and winter respectively. The wind generally blows in northeast direction. From November to February the area experiences pleasant winter. March is start of summer, which continues up to June. The monsoon sets in by June and retreats by September. Relative humidity varies from 18% to 80% in a year.

Proposed operations are of moderate scale and will not cause adverse effect on environment of the area. Standard norms will be adopted for protection of environment.

YEAR	ANNUAL RAINFALL	TEMPERATURE °C	
	IN M.M.	MAXIMUM	MINIMUM
1994	1093.3	45.8	4.3
1995	1144.2	46.2	4.2
1996	1140	45.7	4.8
1997	1280	46.5	4.6
1998	1180	46.5	4.2
1999	1400	46.5	4.6
2000	1210	47.6	4.1
2001	1234	47.2	4.0
2002	1240	47.1	4.1
2003	1130	48.0	4.0
2004	1248	47.2	4.5
2005	1885	44.6	5.8
2006	1145	44.9	6.2

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

2007	1080	41.3	5.1
2008	1120	44.6	6.2
2009	1105	43.9	4.8
2010	1180	44.2	5.2
2011	1265	44.3	4.9
2012	1268	44.7	5.1
2013	1655	44.2	4.3
2014	1229	45.1	6.8
2015	1011	46.8	6.2
2016	1105	45.9	5.1

HUMAN SETTLEMENT

S.No.	Name of Village	Direction from area	Distance (Km.)	Population	Occupation
1.	Jibratola	N	2.0	1250	Agri. / Mine Labourers.
2.	Kota	N	1.5	150	--- do ---
3.	Chandarpur	NE	3.5	150	--- do ----
4.	Moutola	NE	2.5	500	--- do ----
5.	Bhatiyatola	E	2.5	100	---- do ----
6.	Malora	SE	2.5	200	---- do ----
7.	Chhichari	SE	4.5	300	---- do ----
8.	Lohartola	SE	3.5	300	---- do----
9.	Dhutka	SE	3.0	300	--- do ---
10.	Bhoriya	S	2.0	400	--- do ---
11.	Bhatiya	S	1.5	150	----do ----
12.	Surkhi	S	3.5	500	--- do ----
13.	Boheri	SW	4.5	200	---- do ----
14.	Tiloi	SW	3.5	150	---- do ----
15.	Sewartola	SW	3.0	50	---- do ----
16.	Chiknadhi	SW	2.0	150	---- do----
17.	Bhathiya	SW	2.0	150	--- do ---
18.	Bhongadwar	SW	4.5	150	--- do ---
19	Jaharmaw	W	4.0	500	---- do----
20.	Pipartola	W	3.5	100	--- do ---
21	Mugdara	NW	3.0	300	---- do----
22.	Bamhni.	NW	4.0	2500	--- do ---

मध्यप्रदेश खनिज रियायत नियम, 1960
के नियम 42 के अधीन अनुज्ञप्ति

PUBLIC BUILDING, PLACES OF WORSHIP AND MONUMENT

No public buildings, places of worship or monuments are located within 500 m radius of the area.

INDICATE ANY SANCTUARY IS LOCATED IN THE VICINITY OF LEASEHOLD

No sanctuary in the vicinity of the area.

8.2 IMPACT ASSESSMENT: ATTACH AN ENVIRONMENTAL IMPACT ASSESSMENT STATEMENT DESCRIBING THE IMPACT OF MINING AND BENEFICIATION ON ENVIRONMENT ON THE FOLLOWING:

I) LAND AREA INDICATING THE AREA LIKELY TO BE DEGRADED DUE TO QUARRYING, DUMPING, ROADS, WORKSHOP, PROCESSING PLANT, TAILING POND/ DAM, TOWNSHIP ETC.:

II) AIR QUALITY

III) WATER QUALITY

IV) NOISE LEVELS

V) VIBRATION LEVELS (DUE TO BLASTING)

VI) WATER REGIME

VII) ACID MINE DRAINAGE

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

VII) SOCIO-ECONOMICS

VIII) HISTORICAL MONUMENTS ETC.

I) LAND AREA INDICATING THE AREA LIKELY TO BE DEGRADED DUE TO QUARRYING, DUMPING, ROADS, WORKSHOP, PROCESSING PLANT, TAILING POND/ DAM, TOWNSHIP ETC.:

I) LANDSCAPE AND LAND SUBSIDENCE

Topographically it has a very gentle rolling topography with average elevation difference of 1m the average surface RL is 454/461m while very gentle gradient is towards the western side. The area has been developed with seven pits /excavation an average depth of 4-14m. The working pit has been connected by kuchcha road from northwest direction. At the end of five years 5.9591 ha area will be developed with five to six development cum production bench in Ore Zone i.e. of 5-6m height in Dolomite zone i.e. ore zone. During this period, about 0.0525 ha will be backfilled by proposal period generated waste as OB. The drainage of the area is towards the southern, meeting in to the Banjar River.

Cumulative land degradation:

Sr. No.	Heads	At present- ha	At the end of 5 years- ha	At the end of conceptual period - ha
1.	PITS	4.5416	5.9591	16.3005
2.	DUMPS/ STACKS OF MINERAL	1.5438	2.7284	-
3.	ROAD	0.2655	0.2655	-
4.	GREEN BELT	1.50	1.50+ 0.045	-
5.	INFRASTRUCTURE	0.20	0.20	-
6.	PROCESSING PLANT	-	-	-
7.	TAILING PONDS/ DAM	-	-	-
8.	TOWNSHIP	-	-	-
9.	OTHERS	-	0.005	-
TOTAL		8.0509 ha	10.703 ha	16.3005

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

iii) WATER QUALITY:

In the lease area there is no water stream course or springs. The Dolomite, chert and lateritic soil (Laterite) is non-toxic in nature and will not affect the ground water quality. Even the conceptual pit limit is not reaching below the GWT; hence ground water quantity/ quality will not be adversely affected.

iv) NOISE LEVEL

It will be created by movement of truck/ dumper etc. However, noise generated by these will be occurring at very low level and will be in permissible limit.

v) VIBRATION LEVEL (DUE TO BLASTING)

It will be under permissible limits with muffle blasting parameter.

A. FACTORS CONTRIBUTING TO AIR POLLUTION

1. Dust

2. Fumes of blasting and Exhaust (Noxious Gases) of machinery

As earlier said mining activity dust generation will be due to the movement of trucks and by mining activity, which may pollute the air to some extent but spraying of water on roads and bench faces before movement of trucks.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

As earlier said mining activity dust generation will be due to the movement of trucks and by mining activity, which may pollute the air to some extent but spraying of water on roads and bench faces before movement of trucks.

B. Sources of their generation like,

1. Dust:

1. Traffic & Transport,
2. Drilling, blasting,
3. Loading,
4. Waste Dump,

This will be contained within permissible limit by spraying water on road and providing avenue plantation. Like dust collectors providing dust masks to operators, water infusion of benches before and after excavation, water spraying and use of bag filters in screening and dumps stabilization followed by afforestation. Plantation/ sowing of fast growing grass seed on dumps will further reduce the propagation of airborne dust.

iii) WATER QUALITY:

In the lease area there is no water stream course or springs. The Dolomite is non-toxic in nature and will not affect the ground water quality.

iv) NOISE LEVEL

It will be created by movement of truck/ dumper etc. However noise generated by these will be occurring at very low level as no blasting proposal while the noise generated by movement of trucks, dumpers will be in permissible limit.

v) VIBRATION LEVEL (DUE TO BLASTING)

Blasting will be done occasionally hence vibration level will be on marginal side.

vi) WATER REGIME

IMPACT OF MINING ON WATER ENVIRONMENT ON FOLLOWING HEADS:

I) SURFACE WATER:

From mines open up to conceptual period mining activity will interfere with water bodies and dewatering will be done by adequate capacity of pumps. As in the area there is no natural water course, nala or rivulet. The settling tank will take care of sedimentation proposed if any mine water, dump wash off, and further Dolomite along with associated waste is non toxic in nature hence there is no chance of toxicity.

II) GROUND WATER:

Use of water for mining purpose will be around 1 KL for workers which will be managed from hand pump/ bore well.

III) WATER QUALITY:

There are no surface water bodies; the ground water is potable and available in the form of well/ hand pump near the lease area. Ground water level is below the conceptual pit depth proposed as per the present knowledge of deposit. After the completion of mining operations in this area the surface water is

likely to be contaminated due to wash off from the bench area however bench area will be stabilized and secured against dust being air borne by adequate plantation before the conceptual period is over.

vii) ACID MINE DRAINAGE

As per present knowledge and chemical analysis, there is no acid mine secretion from production site or stacks hence this will not be applicable.

viii) SURFACE SUBSIDENSE

By the end of five year and end of the conceptual period will be total 6 benches of each 5-6 m height will be developed in OB & Ore zone, thus by the end of five years and by the end of the conceptual period it will be approx. about 16.3005 ha will be the excavated land, and their reclamation and rehabilitation will be as in previous paras.

viii) SOCIO-ECONOMICS

ix) SOCIAL AND DEMOGRAPHIC

II) OCCUPATIONAL HEALTH AND SAFETY

III) HUMAN SETTLEMENT

IV) RECREATIONAL FACILITIES

There will be no adverse impact of mining but up to some extent socio-economic environment of the area will improve as, the mining activity will assure the job security of already engaged workers and it may create further new job opportunities for the local people. Further the lessee will provide occupational health and safety by providing regular medical checkups and medicine distribution facilities at the local people permissible demand. Proposed mining operations may improve the financial status of the local people.

HISTORICAL MONUMENTS ETC.:

There are no historical monuments in and around 500 m radius of the lease area.

8.3 PROGRESSIVE RECLAMATION PLAN:

TO MITIGATE THE IMPACTS AND AMELIORATE THE CONDITION, DESCRIBE YEAR WISE STEPS PROPOSED FOR PHASED RESTORATION, RECLAMATION OF LANDS ALREADY/ TO BE DEGRADED IN RESPECT OF FOLLOWING ITEMS SEPARATELY FOR 5 YEARS PERIOD:

The mining activity has been started for 25 years and with the present knowledge of the deposit, exploration and proposed production no area is likely to be matured for reclamation however by the end of five years 5.9591 ha area will be degraded up to MRL 427 m and reclamation will be done and after the result of proposed exploration due changes will be reflected in next document.

8.3.1 MINED OUT LAND

Presently there is 525m^2 mined out land and at the end of five years no mined out land will be available as the minerals are continuing depth wise and if mineral ceases after the carried out exploration then reclamation and rehabilitation will be done as per para II-A.

8.3.2 TOP SOIL MANAGEMENT

There is no top soil in the lease area.

8.3.3 TAILING DAM MANAGEMENT

No tailings are generating hence not required

8.3.4 ACID MINE DRAINAGE, IF ANY AND ITS MITIGATIVE MEASURES:

No acid generation, hence not applicable.

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:

Items	Details	Proposed	Actual	Remarks
Dump management	Area afforested (ha) No of saplings planted Cumulative no of plants Cost including watch and care during the year	Not proposed	AS PER PROPOSAL	-
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) Cost including watch and care during the year	THE MINING ACTIVITY HAS STARTED 25 YEARS BACK AND AT THIS STAGE NO BENCHES ARE MATURED FOR REHABILITATION		
Reclamation and Rehabilitation by backfilling	Void available for Backfilling (L x B x D) pit wise/ slope wise Void filled by waste/ tailings Afforestation on the backfilled area Rehabilitation by making water reservoir Any other means (specify)	THE MINING ACTIVITY HAS STARTED 25 YEARS BACK AND AT THIS STAGE NO BENCHES ARE MATURED FOR REHABILITATION		
Rehabilitation of waste land within lease	Area available (ha) Area rehabilitated Method of rehabilitation	THE MINING ACTIVITY HAS STARTED 25 YEARS BACK AND AT THIS STAGE NO BENCHES ARE MATURED FOR REHABILITATION		
Others (specify)	NIL	NIL		

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमति

8.4 DISASTER MANAGEMENT:-

High-risk accidents are not anticipated in the area because proposed mining is of small-scale manual mining. In case of natural disaster such as earthquake, flood, storm etc., as per the situation, lessee will take the assistance from the local competent authority of Govt. and Non-Government, agency, similarly mines manager will be in touch of local people for immediate amelioration and in the case of flood through Banjar River (1.5 km north) and over flow he will take anticipatory care in coordination with State Govt. directives.

8.5 CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE

Proposed mining is of small category mine with production of about **3Lac** tonnes production per year, most of the mining facilities will be adopted on hire basis in such case care will be taken as per the terms and conditions of the contract. The contract will cover the job of care and maintenance of mined out area by providing fencing, stability, stability of benches and pit slope, dewatering watchman etc. with specific attention on safety and security.

INDRANEEL DAWANDE
Recognised Qualified Person
From DGM-MP
Regn. No. RQP/DGMMP/002/2013

8.6 FINANCIAL ASSURANCE

Financial assurance details:

Total area is 19.223 ha say 20.00 ha hence as per Rule 42 (6) of MP MMR 1996 financial assurance calculation will be-

AREA x Rs. 15,000.00

19.223 ha say 20.00 ha x 15,000 = Rs. 3,00000.00

This FA will be submitted after the necessary instruction from approval officer.

PLACE: Jabalpur

DATE: 02.10.2019

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के अन्तर्गत अनुमोदित

INDRANEEL DAWANDE

RQP/DGMMP/002/2013

CERTIFICATE NO. I

CONSENT LETTER/ UNDERTAKING/ CERTIFICATE FROM THE LESSEE:

01. The Scheme of Mining in respect of **Mugdara Dolomite Mines** over an area of **19.223 ha** in Village Mugdara, Tehsil Nainpur, District Mandla of State Madhya Pradesh, under **Rule 42(F)** of **MP MMR 1996** has been prepared by RQP Shri Indraneel Dawande, RQP/DGMMP/002/2013.

02. This is to request, the Director, DGM, Bhopal (M.P.), to make any further correspondence regarding any correction in the Scheme of Mining with the said recognized person at his address below:

Mr. Indraneel Dawande,
Address: Engeotech Consultant,
First floor, 1338, Vijay Nagar, Jabalpur, Pin code - 482002 (M.P.)
Tele/ Fax: 0761-2641694, Mobile: 09425387402
Email: engeotech@rediffmail.com

We hereby undertake that all modifications/ updating as made in the said Scheme of Mining by the said recognized person be deemed to have been made with our knowledge and consent and shall be acceptable and binding on us in all respects.

03. It is certified that the Progressive Mine Closure Plan prepared under Rule 42(J-2) of MP MMR 1996 for **Mugdara Dolomite Mines** of lessee **M/s OCL India Ltd., Rajgangpur, Sundargarh, Odisha** over an area of **19.233 ha** complies with all Statutory Rules, Regulations, Orders made by the Central or State Government, Statutory organization, 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.

04. "The provisions of Mines Act, Rules and Regulations made there under have been observed in the Scheme of Mining over an area of **19.223 hectares** in Mandla District of State Madhya Pradesh belonging to **M/s OCL India Ltd., Rajgangpur, Sundargarh, Odisha** 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".

05. Further, the Director, DGM, Bhopal (M.P), is requested to send/ handover the approved copy of Scheme of Mining to our RQP, Indraneel Dawande, 1338, Vijay Nagar, Jabalpur (M.P.).

मध्यप्रदेश गौण खनिज नियम 1996
के नियम 42 के ...

LESSEE

Date: 01 / 10/ 2019

(Authorized Signatory)

Place: Rajgangpur

M/s OCL India Ltd.
Rajgangpur, Sundargarh, Odisha

OCL India Limited
(Refractory Division)
Rajgangpur - 770017, Odisha, India
t (06624) 221 212, 220 121 f (06624) 220 133 w www.ocl.in
Regd Office : Dalmiapuram - 621651, Dist- Tiruchirapalli, Tamil Nadu, India
CIN: L26942TN1949PLC117481
A Dalmia Bharat Group company

CERTIFICATE No. II

CERTIFICATE BY RQP

The provisions of the Madhya Pradesh Minor Mineral Rules 1996 have been observed in the preparation of the Scheme of Mining for **Mugdara Dolomite Mines**, over an area of **19.223 ha** in Village Mugdara, Tehsil Nainpur & District Mandla of Madhya Pradesh State and whenever specific permissions are required, the lessee will approach the concerned authorities of State Govt./ DGM.

The information furnished in the Scheme of Mining is true and correct to the best of our knowledge.

मध्यप्रदेश खनिज [illegible] 1996
के नियम 42 के अन्तर्गत अनुमोदित

Place : Jabalpur

Date : 10 / 1 / 2019

Indraneel Dawande

RQP/DGMMP/002/2013