

EXECUTIVE SUMMARY

**EXPANSION IN PRODUCTION OF QUARTZITE MINERALS
FROM 9000 TPA TO 84916 TPA (EXISTING PRODUCTION OF KYANITE, SILLIMANITE,
CORRUNDUM AND PYROPHILLITE 4000 TPA AND QUARTZITE 9000 TPA), 14.33
HECTARES
AT
KHASARA NO. 155, DIGHORI VILLAGE, TAHSIL LAKHANDUR, DISTRICT BHANDARA,
M.S.**



PROJECT ACTIVITY - MINING OF MINERALS 1 (a)

PROJECT CATEGORY – B

PROJECT PROPONENT

M/S. DIGHORI KYANITE MINE

Shri P. M Golchha

Civil Lines, Nagpur, Maharashtra- 440001

MONITORING PERIOD: - MARCH TO MAY-2022

PROJECT COST: 67 Lakhs



Prepared by:

Open Arch Design & Enviro Solutions LLP

NABET Accreditation No: NABET/EIA/2124/IA0081

302, Big Splash, Plot No 78 & 79,
Sector, 17, Vashi, Navi Mumbai (Maharashtra)

MARCH 2023

Executive Summary

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1. INTRODUCTION:

M/s. Dighori kyanite mine having an area of 14.33 hectares in village - Dighori, Tahsil - Lakhandur, District - Bhandara in Maharashtra state, granted to shri P. M. Golchha, Nagpur for the production of Kyanite, Sillimanite, Quartzite, Corundum, Pyrophyllite and quartzite vide Govt. of Maharashtra order No. MMN/620/8020/Desk 4 Trade, commerce & Mining Department, Mantralaya, Mumbai dated 11.08.2000.

The said mining lease has been executed by the lessee on dated 29th December 2000 for a period thirty years thus valid up to 28.12.2030. Due to new amendment the lease period will be 50 years from the date of execution and will thus valid up to 28.12.2050. Execution for extended period is yet to be done by the lessee.

Mining plan of the above area was prepared under rule 22 of MCR 1960 for fresh grant and was approved by the regional controller of mines [NR], Indian Bureau of mines, Nagpur vide letter No. BHD/KYU/MPLN-715/NGP dated 04.10.2000.

Mining scheme has been prepared for the further period of five years from 2006 - 2007 to 2010-2011 and approved by the regional controller of Mines, Nagpur vide letter No. BHD/KYA/MPLN -715/NGP dated 23.07.2012.

As per the new amendment in the mining rules and regulations as the quartzite is being categorized under minor mineral, scheme of Mining for quartzite this been prepared separately after expiry of mining plan period and approval has been granted by the Directorate of Geology & Mining, Govt. of Maharashtra, Nagpur vide letter No. BON/MINING/MMP/215/2015/1226 dated 6th June 2016 and valid up to March 2021. This scheme of mining is prepared for further period of five years from 2021-22 to 2025- 26 with vide BON/MINING/MMP/215/2015/1226 dated 6th June 2016 and valid up to March 2021.

The lessee has obtained Environment Clearance for M L Area 14.33 ha, production capacity 14000 TPA for production of (Kyanite, Sillimanite, Corundum and Pyrophyllite 4000 TPA and Quartzite 9000 TPA) vide letter number SEAC-2015/CR-106/TC-2 dated 16th January 2016.

This scheme of mining plan is prepared under MMME (D & R) Rules, 2013 for further period of five years from 2021- 22 to 2025 – 26 approvals dated on 21st May 2021.

The ToR application submitted to SEIAA, Maharashtra on 19.01.2022 with proposal No.

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SIA/MH/MIN/71250/2022. ToR was issued SIA/MH/MIN/71250/2022 dated: 25.01.2022.

2. PROJECT DETAILS:

Project Name	Expansion in production of Quartzite Mineral from 9000 TPA to 84916 TPA (Existing production of Kyanite, Sillimanite, Corundum and Pyrophyllite 4000 TPA and Quartzite 9000 TPA) at Village: Dighori, Tahsil: Lakhandur, District - Bhandara, Maharashtra by M/s Dighori Kyanite Mine (Lessee Mr. P M Golchha)
Mining Lease Area	14.33 Hectares
Mineral	Kyanite, Sillimanite, Corundum, Pyrophyllite and Quartzite
Location of Mine	Khasara No. 155, Village: Dighori, Tahsil: Lakhandur, District Bhandara and Maharashtra State.
Toposheet number	53P/13
Proposed production of mine	Quartzite Mineral from 9000 TPA to 84916 TPA (Existing production of Kyanite, Sillimanite, Corundum and Pyrophyllite 4000 TPA and Quartzite 9000 TPA)
Method of mining	Open cast Semi mechanized mining
Drilling/Blasting	Drilling and Controlled Blasting is proposed.
No. of working days	280 days in a year
Water demand	10.0 KLD
Man power	32
Nearest Railway station	Arjuni Railway station – 12.30 Km, SE
Nearest Airport	Dr. Babasaheb Ambedkar International Airport Nagpur - 90.83 Km, NW
Nearest Habitation	Dighori – 1.0 km [NW]
Nearest City	Lakhandur Tahsil HQ -14.20 Km, SW

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Nearest Roads	1. NH – 6.18 Km, N, 2. SH-271, 21.68, N 3. District Road – 300 m
Water bodies	Chulband River 250 m, NW
Reserve Forests	Gum Gaon Pimpalgoan Reserve Forest 1.6 Km SE Wakal Reserve Forest 6.8 Km NW
Availability of water	The ground water table in the area is about 18 to 21 mtrs. from the general ground level
Hills/Valleys	Nil
Ecologically Sensitive Zone (Wild Life Sanctuaries)	There is no National Park, Wild Life Sanctuary and Biosphere Reserve within 10 Km of Project site. So, no approval is required. However, Reserve Forest area falling in 10 Km lease area is as under: 1. Gum Gaon Pimpalgoan Reserve Forest 1.6 Km SE 2. Wakal Reserve Forest 6.8 Km NW
Defense Installation/ Historical Monuments/ Archaeological/ Ports	Nil
State Boundary	Maharashtra–Chhattisgarh boundary, 55 km, E direction
Historical Places	Nil
Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects.	The area is not sensitive to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions. Zone- II (Least Active)
Hills/Valleys	Nil

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Ecologically Sensitive Zone (Wild Life Sanctuaries)	Nil
Defense Installation/ Historical Monuments/ Archaeological/Ports	Nil
State Boundary	Telangana – Karnataka boundary, 53km, WSW
Historical Places	Nil
Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects.	The area is not sensitive to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions. Zone- II (Least Active)

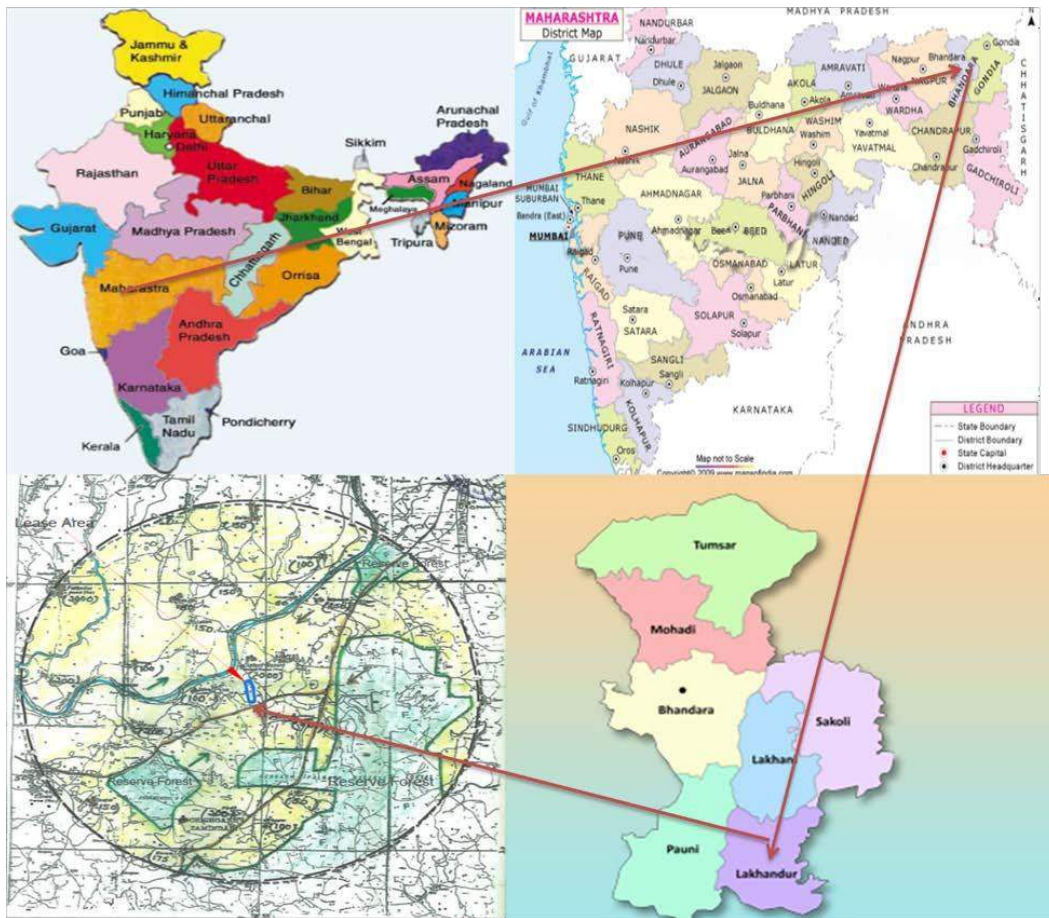


Figure - 1. Location Map

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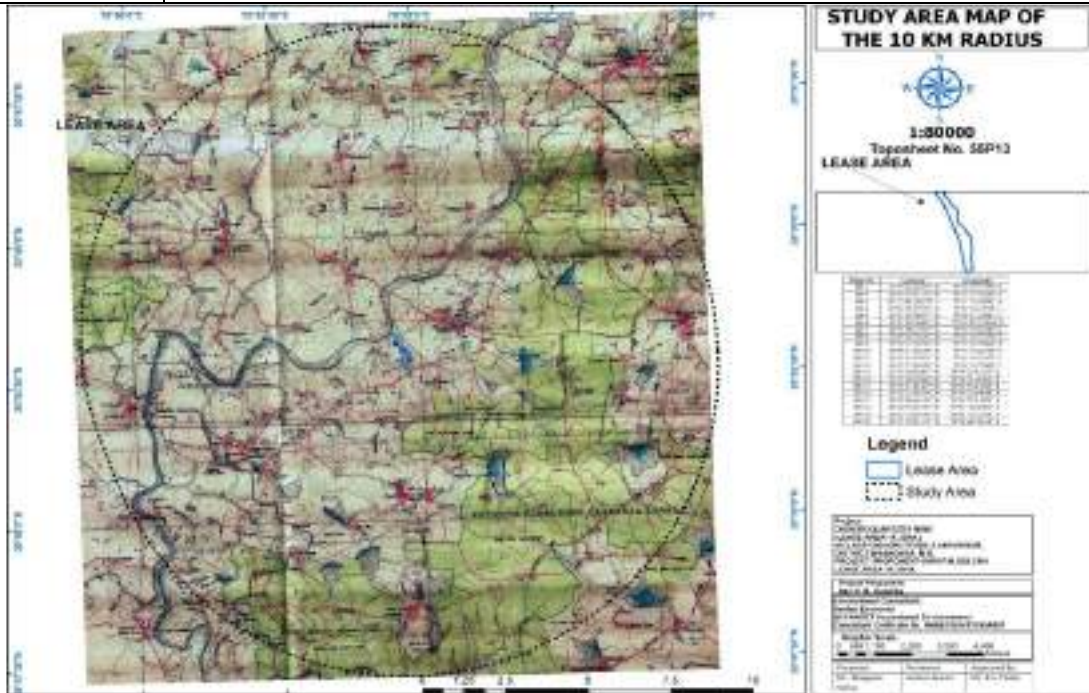


Figure - 2. Topo Map 10 Km radius from the Project Site

3. DETAILS OF MINING:

The mining lease over an extent of 14.33 Hectares Khasra No. 155, Village: Dighori, Tahsil: Lakhandur, District - Bhandara, Maharashtra. The expansion of Quartzite Mineral from 9000 TPA to 84916 TPA (Existing production of Kyanite, Sillimanite, Corundum and Pyrophyllite 4000 TPA and Quartzite 9000 TPA). This is an open cast mine and it is proposed to do mining by Semi Mechanical method will be adopted which includes drilling, blasting, loading and transportation.

4. WATER REQUIREMENTS

The total water requirement for each project is 10.0 KLD which will be used for Dust Suppression, Greenbelt Development & Domestic purposes and will be sourced from nearby villages through Tankers.

WATER REQUIREMENTS	KLD
Dust suppression, process & others	3.0
Green belt	3.0
Domestic Activities	4.0
Total water required	10.0

5. BASELINE STUDY:

The study area covers an area of 10 km radius around the mining site. As part of Environmental Impact Assessment study, baseline environmental monitoring was carried

out during the period of March 2022 to May 2022. Baseline environmental monitoring study is very important aspect of EIA study, which covers Direct & Indirect Impacts of the project activity and measures to be adopted. The main concept of the study is to assess the present environmental status of the project area and proposed impacts due to the project activity.

5.1. AIR ENVIRONMENT

Ambient Air Quality of the study area has been assessed through a network of 8 Ambient Air Quality locations.

The concentration of PM₁₀ for all the 8 AAQM stations ranges between 38.2 µg/m³ to 68.7 µg/m³. The concentration of PM_{2.5} for all the 8 AAQM stations ranges between 13.6 µg/m³ to 36.8 µg/m³. As far as the gaseous pollutants SO₂ and NO₂ are concerned, the CPCB limit of 80 µg/m³ for residential and rural areas has never been surpassed at any station. The SO₂ concentrations are in the range of 7.2 µg/m³ to 31.8 µg/m³ and the NO₂ concentration is in the range of 11.5 µg/m³ to 38.7 µg/m³. The CO concentrations are in the range of 76.8 mg/m³ to 287.0 mg/m³ for all 8 AAQM stations.

5.2. NOISE ENVIRONMENT

Ambient noise levels were measured at 8 locations around the proposed project site. Noise levels vary from 47.4 to 61.8 Leq dB(A) during the day time and during the night time noise levels range from 38.0 to 43.5 Leq dB(A). Thus, noise levels at all locations were observed to be within the prescribed limits. From the above study and interpretation, it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB and State Pollution Control Board.

5.3. WATER ENVIRONMENT

To assess the quality of Ground water and Surface water, Water samples were collected from 7 locations for Ground Water and 5 locations for Surface Water. The parameters thus analyzed were compared with drinking water standards of IS 10500.

Analysis results of Ground Water

- pH varies from 6.6 to 7.2
- Total hardness varies from 206.7 mg/l to 290.0 mg/l
- Total Dissolved Solids vary from 296.3 mg/l to 479.7 mg/l.

All the parameters were found to be well within the Limits.

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Analysis results of Surface Water

- pH varies from 7.09 to 7.39
- Total hardness varies from 134 mg/l to 206 mg/l
- Total Dissolved Solids vary from 190 mg/l to 272 mg/l.

All parameter values in surface water sources are well and within the permissible limits laid by the Ministry of Health, Govt. of India, for potable water.

5.4. SOIL ENVIRONMENT

To assess the quality of Soil in the study area, 6 Soil samples were collected in the Buffer zone and 1 Soil sample from mine site.

Analysis results of Soil

- pH of the soil quality ranged from 6.62-8.3.
- Nitrogen ranged from 372.4 kg/ha to 651.7 kg/ha
- Organic matter ranged from 0.97% to 1.69%

5.5. BIOLOGICAL ENVIRONMENT:

Study of biological environment is one of the most important aspects for Environment Impact Assessment, in view of the need conservation of environmental quality and biodiversity. The biodiversity component of the study focused on a few groups of biological components comprising of Flora, Birds, Reptiles, Amphibians, Mammals, Butterflies, Fisheries as well as the surrounding ecosystems. The overall objective of this study is to establish the baseline data for flora and fauna of this proposed project study area. Ecological study was undertaken in and around mine covering an extent of 10 km radius from mine boundary. From the study it has been observed that there are no endangered, endemic or threatened species in 10 km radius of the project site.

6. ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES:

The air borne particulate matter is the main air pollutant contributed by open cast mining. Various emission sources are identified from the mining operations of proposed mine. Incremental ground level concentrations are estimated considering emissions from proposed mine including fugitive dust from transport of material in the mine. Ground Level Concentration (GLC) values have been computed for considering topographical features around the mine site and applicable stability classes.

6.1. AIR POLLUTION CONTROL MEASURES

The environmental control measures which are proposed to control the fugitive dust released are given below:

- Regular sprinkling of water on haul roads and approach roads
- Wet drilling to suppress the dust emission from the drill machine at its source by inbuilt water injection system.
- Jack hammers will be provided with Gunny bags
- Green belt will be developed Haul Roads & Service Roads to control the dust.
- Best practices at Quarry Area and Loading & Un Loading points.

6.2. NOISE POLLUTION CONTROL MEASURES

Noise is produced at the mine due to movement of drilling, machinery and transport etc. The noise generated by the mining activity dissipates within a small zone around the mine. There will be no major impact of the mining activity on the vicinity. However, pronounced effect of above noise levels was felt only near the active working area. The impact of noise on the villages is negligible as the villages are far located from the mine site. Greenbelt will be developed all along the buffer zone, hence the impact on the mine vicinity due to noise levels will be nil.

The following noise abatement measurements are implemented for control of noise:

- Selection of Machinery & Equipment
- Proper and regular maintenance of vehicles, machinery and other equipment.
- Limiting time exposure of workers to excessive noise
- The workers employed at high noise levels will be provided with protection equipment, earmuffs and ear-plugs, as a protection from the high noise level generated at the mine site wherever required.
- Shift system to employ workers working in high noise area.
- Speed of trucks entering or leaving the mine will be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
- Greenbelt development all along the 7.5 mts Buffer Zone.

6.3. WATER POLLUTION CONTROL MEASURES

- There will be no generation of waste water from the mine lease area except domestic waste water of 2.4 KLD which will be treated in septic tank followed by soak pit.
- During the rainy season the rain water will be collected in the mine pit. This water will be used for dust suppression and green belt.
- There are no dug wells or open wells in the lease area. Based on the observations in the nearby villages, the ground water level in the quarry area and its surroundings ranges between 18M to 21M below ground level.
- There will be no seepage as the quarry progresses and also water table will not be intercepted. Thus, there will not be any impact on ground water due to the proposed quarry activities.

6.4. LAND ENVIRONMENT

- The Top Soil generated will be stored separately and will be used for Development of Greenbelt.
- There will not be any impact on land as there is no generation of any poisonous product due to proposed mining.
- Retaining walls will be constructed around the waste dump followed by Garland drains to collect runoff water. Siltation tanks will be constructed at the discharge end of garland drains to arrest silt.

6.5. SOCIO ECONOMIC ENVIRONMENT:

- The mine area does not cover any habitation. Hence, the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc. exist within the lease area or in the vicinity. The mining operations will not disturb/relocate any village or need resettlement. Thus, no adverse impact is anticipated.
- The mining activity can improve the economic status of the people around the mine area. Local people will get employment with the continued mining activities and infra-structural facilities will be developed. Hence there is possibility of positive impact on socio – economic status of people living in the neighboring villages.
- The budget allocated for Corporate Social Responsibility is 5.0 Lakhs and the same will be used for Health Camps, Drinking Water facility, Solar Street Lights

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& Plantation.

7. GREENBELT DEVELOPMENT PROGRAMME:

Greenbelt will be developed in the lease area. Plantation is developed in Buffer zone, Haul roads and Approach roads. The Greenbelt development programme is given below;

Year	Saplings to be planted	Survival (@70%)
I	25	17
II	25	17
III	25	17
IV	25	17
V	25	17
Total	125	85

8. BUDGET FOR IMPLEMENTATION OF EMP:

The estimated cost of the project is Rs. 67.0 Lakhs. A budget of Rs 14 Lakhs as capital cost. The details are given below:

S. No.	Particulars	Capital Cost (INR lakhs)
1	Pollution monitoring – Air, Water, Noise and Soil	3.00
2	Dust Suppression	4.00
3	Plantation including maintenance	2.50
4	Rainwater harvesting	0.50
5	Haul Road and other Roads Repair and Maintenance	4.00
Total		14.00

9. ENVIRONMENTAL MONITORING PROGRAMME:

To evaluate the effectiveness of Environmental Management Programme, regular monitoring of the environment parameters will be taken up. Environmental Monitoring for Air, Noise and Water will be carried once in every six months.

10. CONCLUSION:

The project proponent M/s Dighori Kyanite Mine will adopt Environment friendly mining operations and will implement the Environmental Management Plan by taking up various Socio-Economic development activities to have the positive impact on the surrounding environment.