Jan, 2021

EXECUTIVE SUMMARY
OF

MINING OF STONE MINOR MINERAL FROM GARHI STONE MINE LOCATED AT VILLAGE GARHI TEHSIL & DISTRICT MAHENDRAGARH STATE- HARYANA

STUDY PERIOD: OCTOBER TO DECEMBER 2021

[The Project Falls under category –B" as per EIA Notification dated 14th September 2006 and its amendments dated 12/12/18]

PROJECT PROPONENT

M/S NKC PROJECTS PVT. LIMITED

R/O- PLOT NO. 872, PHASE -V, UDHYOG VIHAR'
GURUGRAM , HARYANA

ENVIRONMENT CONSULTANT

VARDAN ENVIRONET

(QCI/NABET ACCREDITED NO. NABET/EIA/1922/RA0166)
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Mining of stone minor mineral from Garhi Stone Mine with 2.5 MTPA production capacity over an area of 6.70 ha. located at Village Garhi Tehsil & District Mahendragarh State- Haryana proposed by M/s NKC Projects Pvt. Limited

1. Project Description

Project is proposed for the Mining of Stone minor minerals from the Garhi Stone mine with 2.50 MTPA production capacity over an area of 6.70 Hectare located in Village- Garhi, Tehsil & District Mahendergarh, State- Haryana by M/s NKC Projects Pvt. Limited.

Department of Mines and Geology conducted auction of Stone minor mineral mine of "Garhi Stone mine and M/s NKC Projects Pvt. Limited was considered as highest bidder by paying Rs.18,08,00,000.

As per EIA Notification dated 14th September, 2006 and its amendments project falls under Category "B1", as total project area is 6.70 ha.

2. Status of Statutory Clearances and Approvals

CLEARANCES / APPROVALS	DATE
The LOI has been issued by the Director, Mines & Geology, Haryana vide Memo No. DMG/HY Garhi/MGR/2021/3852 dated 30.09.2021 in favour of M/s NKC Projects Pvt. Limited for a period of 10 Years	30.09.2021
Online application submitted for grant of ToR for preparation of Environmental Impact Assessment report.	20.11.2021
Date of online acceptance of Project at SEAC Haryana	07.12.2021
Project consideration for TOR Presentation at SEAC Haryana in its 229th meeting	17.12.2021
ToR was granted for M/s NKC Projects Pvt. Limited by SEIAA Haryana vide letter F.No. SEIAA(133)HR/2021/10	3.01.2022

3. Mine Site Details

S. No.	Particulars	Details		
A.	**Mining Lease Details**			
1.	Name of the Project	Mining of stone minor mineral from Garhi stone mine with 2.50 MTPA production capacity over an area of 6.70 Hectare located at Village-Garhi, Tehsil & District- Mahendergarh, and State- Haryana proposed by **M/s NKC Projects Pvt. Limited.**		
2.	Location	Village-Garhi, Tehsil & District- Mahendergarh, and State- Haryana		
3.	Plot/Survey No,/Khasra No.	7		
4.	Latitude and Longitude	**Pillar No**	**Latitude**	**Longitude**
		A	N 28° 26'39.06"	E 76° 06'30.00"
		B	N 28° 26'38.01"	E 76° 06'36.10"
		C	N 28° 26'24.00"	E 76° 06'30.40"
		D	N 28° 26'21.6"	E 76° 06'25.70"

S. No.	Particulars	Details
5.	Toposheet No.	54 A/1 (H43W2 & H43W3)
6.	Method of mining	Open cast Machanized Mining
7.	Life of Mine	6.1 Year
8.	Lease period of Mining	10 year
9.	Geological reserve	14016997.5 Tons
10.	Mineable reserves	6365616.747 Tons
11.	Elevation range of the mine site	Minimum- 235 m RL Maximum- 280 m RL
12.	Water Table	80-100 m (bgl)
13.	Working Regime	300 days / 2 Shifts per day / 8 hours per Shift
14.	Bench height / bench width	9 m/ more than 9 meters
15.	Overburden to be generated	125000 MT in five years
16.	Employment Potential	46
17.	Water requirement	Water requirement will be 90 KLD.This water will be sourced from ground after taking necessary clearance from the CGWA. Dust Suppression = 80 KLD Plantation= 8 KLD Domestic Purpose= 2 KLD
18.	Ecological Sensitive Park, Wildlife Sanctuary, Reserve etc.) Within 10 km of the project area.	There are following RF/PF present in the study area Basai RF: 6.0 km in SE Naurangabad RF: 6.70 km in SW Nangal Mala RF: 6.7 Km in SW
19.	**Cost Details**	
20.	Cost of the project	Rs. 5 Crores
21.	Cost for EMP	Rs. 82 lakhs for 5 years
22.	OH&S	Rs. 7 Lakhs/- for 5 years

4. Need of Project:

- The stone extracted will be consumed by the Stone crusher of district itself. The raw stone as well as the crushed material of stone is in high demand in real estate as well as in building construction projects.
- Stone will be used as building material, roofing flooring, road making and there is huge demand in infrastructure industry & Township Project.

- The revenue taxes from the mining activities to State Government will result in the increase in the aesthetic and social development of the region.
- Project will create direct and indirect employment opportunities within the surrounding region

5. Benefits of the Project

- Shall add to revenue generation of the District / State.
- Shall generate additional employment, both direct and indirect which will lead to economic growth.
- Shall provide services like medical facilities and other facilities to local villages under the company's community development program.
- Establishment of small and medium scale ancillary industries with cascading effect on the economy and skill development of the locality.

6. Machinery to be Deployed is listed Below:

S.No.	Machine	No's	Make	Capacity
1.	Excavator	4+1*	L&T	3.6 m3
3.	Dumper/trucks	24+5*	Ashok Leyland	30 Tonne
4.	Drilling Machine	2+1*	Atlas Copco	100 mm dia
5.	Air Compressor	2+1*	Atlas copco	450 cfm
6.	Rock Breaker	1	L&T	1.2 m2
7.	Diesel Operated Pump	1	Kirloskar	5.0 H.P. Motor
8.	Generator	1	----	----
11.	Bolero Jeep	1	Mahindra	7 Seater
12.	Maintenance Van	1	----	----

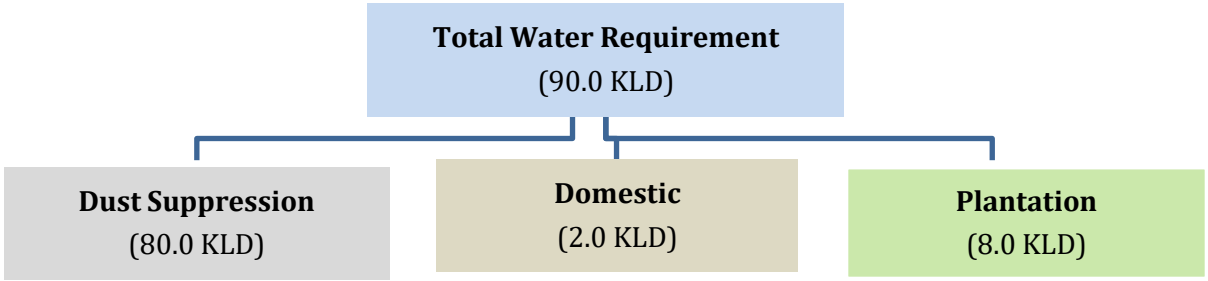
7. Baseline Study:

Parameters	Baseline Status
Ambient Air Quality	PM_{10} – 98.50 to 70.40 µg/m^3 $PM_{2.5}$ – 57.00 to 39.30 µg/m^3 SO_2 – 15.80 to 7.00 µg/m^3 NOx – 30.50 to 12.40 µg/m
Noise Level	Noise Level During Day Time – 47.80 to 71.86 Leq.(dB)A Noise Level During Night Time –40.75 to 61.80 Leq.(dB)A
Water Quality	**Ground Water:** All the Parameters Like pH varies from 7.51 to 7.71, Total Hardness varies from 235.47 to 294.56 mg/L, Total Dissolved Solids varies from 410.00 to 545.00 mg/L, Chlorides from 60.55 to 88.31 mg/l etc. are found within the permissible limits.
	Surface Water: All the Parameters Like pH varies from 7.62 to 7.89, Total Hardness varies from 603 to 756 mg/L, Total Dissolved Solids varies 803 to 1046 mg/L, Dissolved Oxygen – 5.2 to 6.9 mg/L etc. are found within the permissible limits.
Soil Quality	pH – 7.62 to 7.98, Organic Matter – 0.27 % - 0.43 % Water holding capacity –30.52 to 36.42%

Parameters	Baseline Status
Ecology and Biodiversity	There is no wildlife sanctuary/biosphere reserve/national parks present within 10 Km radius of the study area. 3 No.s of species of schedule-I were observed during study. Subsequently, a budget of Rs.30.00 Lakhs has been earmarked for conservation of Wildlife for the life of the mine.
Socio Economic	The proposed project will provide positive impact to the nearby area. The project will provide direct employment to the 46 persons which will be hired through the nearby villages
Traffic	The proposed project will not cause major impacts due to increase in the PCU/hr which is 108 PCU/hr.

8. Water Requirement:

Total water requirement at Garhi Stone Mine for domestic, dust suppression, & Planation use is 90KLD.This water will be sourced from ground after taking necessary clearance from the CGWA.



9. Power Requirement

The mine will operate in two shifts. Electricity required for mining will be supplied by Dakshin Haryana Bijli Vitaran Nigam (DHBVN), DG set are also proposed to be kept in case of failure of electricity.

10. Man Power Requirement:

The proposed stone mining project will generate employment for about 46 (Skilled- 25, Semi-skilled-21). In addition, more than 100-150 people will be benefited indirectly, preference of the employment will be given to the nearby villagers.

11. Environmental Impact and Mitigation Measures

12.1. Land Environment

The proposed land use of the area is govt. land having small undulations. Garhi stone mine area is spread over 6.70 Ha in the villages Garhi. No additional land shall be required for the project, The project area does not consist of any forest land. At the end of the mining operations, a part of the mining lease area (excavated region) would be used as water reservoir and backfilling and the surroundings would be fenced.

12.2. Air Environment

Impact

- Fugitive dust emissions during drilling of blast holes
- Dust generation due to loading and unloading of mineral & transportation
- Dust and gaseous emissions during blasting
- Gaseous emissions from mining fleet machineries and transport vehicles

Mitigation Measures

- Controlled and wet drilling shall be used.
- Before loading of material water shall be applied on blasted material.
- Increased frequency of water spray on haul roads to avoid dust generation during transportation.
- Transportation of material shall be carried out during day time only.
- The speed of dumpers plying on the haul road should limited to avoid generation of dust.
- Haul road shall be covered with gravels.
- Covering of material when transport through trucks/dumpers.
- Regular maintenance and overhaul of mining fleet machineries and vehicles.

12.3. Water Environment

Impact

There will be no impact of mining in the natural flow of water and the drainage system in the area. The Mining is proposed above the water table, so there will be no effect on ground water table. The general ground water table in the area varies from 80-100 m below the surface level of the lease area. Hence no measures will be required.

Mitigation Measures

- The project proponent will be construction of garland drains around the dumps to arrest silt and sediment flows. The drains will connected to a settling tank and/or mine pits and accumulated water will be used for dust suppression and plantation. De-silting of garland drains is carried out at regular intervals, in addition to the already expedites a budget of Rs. 13 lakhs has been kept under the EMP head for construction and maintenance of Garland drain and settling tank.

12.4. Noise Environment

Impact

Followings are the major noise source from the Mine:

- Drilling
- Blasting
- Operation of HEMM & Vehicular Movement

Mitigation Measures

- Drilling will be carried out with the help of sharp drill bits which will help in reducing noise.

- Secondary blasting shall be totally avoided and hydraulic rock breaker shall be used for breaking.
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay shall be maintained.
- The blasting will be carried out during favourable atmospheric condition and less human activity timings.
- Minimum quantity of detonating fuse will be consumed by using alternatively excel non-electrical initiation system.
- Proper maintenance, oiling and greasing of machines at regular intervals shall be done to reduce generation of noise.
- The prime movers/diesel engines are properly maintained.
- Provision of sound insulated chambers for the workers deployed on machines (HEMM) producing higher levels of noise.
- Proper designing of plant & machinery by providing inbuilt mechanism like silencers, mufflers and enclosures for noise generating parts and shock absorbing pads at the foundation of vibrating equipment.
- Green Belt/Plantation shall be developed around the mining activity area and along haul roads. The plantation minimizes propagation of noise

12.5. Ground Vibration, Air Blast and Fly-rock

Ground vibration, fly rock, air blast, noise, dust and fumes are the deleterious effects of blasting on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants. When an explosive charge is fired inside the blast hole, it is instantly converted into hot gases, which exert intense pressure on the blast hole walls.

Mitigation Measures

The following measures shall be taken at the mines for control of vibrations due to blasting:

- Using optimum maximum explosive charge per delay to keep the ppv below the threshold limit.
- Optimizing blast design by exercising strict control over blast design parameters such as burden, spacing, proper stemming orientation of all blast drill holes and accurate drilling based on rock type, jointing pattern, proper face preparation etc.
- Blasting will be done in favorable weather condition.

The following measures will be taken to control the fly rock during blasting operations at the proposed mining blocks:

- Muffle blasting will be done wherever any blasting is to be taken within 200 m of any structure.
- Proper burden and spacing will be maintained according to the bench height, nature of rocks and dia of the holes.
- Length of the stemming column shall not be less than the burden.
- Angular holes will be made in conformity with the slope of the bench.
- As far as possible holes will be located beyond weak zones

- All loose pieces of rocks from the blasting site will be cleared before charging the hole.
- Drill hole depths will be checked before loading by the Blasting Incharge.
- Proper warning signals, flags are posted before blasting at various locations.
- Blasting Shelters have been constructed with thick MS sheets with enclosures on all sides except one side, to take shelter for persons engaged in blasting.
- Guards are be posted on all access roads leading to the blasting site, who prevent unauthorized entry of mine personnel.

12.6. Ecology & Bio-diversity

Impact

- There may be some impact on the biological environment due to the air pollution during transportation & loading & unloading of mineral.
- Noise and vibrations due to the blasting operations may have some impact on the fauna present in the area

Mitigation Measures

- Transportation of stone in truck, covered with tarpaulin and regular water sprinkling on the approach road.
- Plantation along the approach road will further reduce the impact.
- Blasting operations will be during daytime, preferably before 15.00 hrs.
- No National Park, Wild Life Sanctuary, Bio-sphere Reserve, Elephant Reserve, Tiger Reserve or Elephant Corridor etc. is present within 10 km of mining lease area.
- There is 3 no's of Schedule-I species of fauna has been found in the study area for which conservation plan has been prepared and for that a budget of Rs. 30 lakh.
- The project does not involve any fresh tree felling for the proposed mine instead of 5525 trees will be planted inside the mining lease area during the planned period.

12.7. Socio-economic Environment

- The project does not envisage any leasing or acquisition of private land. Hence R&R plan is not applicable under the present proposal.
- Additionally, project will generate employment for about 46 (Skilled- 25, Semi-skilled- 21).
- Minimum burden on existing infrastructure as local people will be given preference in employment.
- Improved infrastructural facilities such as developments of approach routes within the village area, street light, health facilities etc.

12. Waste Management

During the process of mining, 98% quantity of ROM will be stone and rest 2% of ROM quantity associated mineral will also be generated. Though negligible soil and OB will be generated the provision has been taken for alluvial soil, mine waste of five years to be temporary stacked in the stacking yard. Care has been taken in selecting the site for the stacking yards for the stacking purpose as such it is located in a secure place and having solid base. These stacking yards have been protected by toe walls. The toe walls will be constructed during first year's period. Ultimate waste

will be used for backfilled some part of the excavated area and soil will used for plantation over backfilled area.

13. Development of Green Belt

It is proposed to plant 5525 trees in 5 years with consultation of Forest department with some fruit bearing and medicinal trees, along the haul roads, community land and government building. Budget of Rs. 26 lakhs has been kept for Greenbelt development.

14. Occupational Health Measures

An Occupational Health Centre (OHC) is already in place at the Mine. A systematic program for medical check-up at regular intervals is being followed at the Occupational Health Centre (OHC) of the Mine for all workers (including contractor workers) to ascertain any changes in the health condition of workers due to the working conditions. Employees health is being checked at the time of joining and at regulat interval, thereafter. A budget of Rs. 7 has been kept for Occupational health measures.

15. Environment Management Plan

The Environmental Management Plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during the implementation and operation of the project, to eliminate adverse environmental impacts or reduce them to acceptable levels. To implement EMP, a capital budget of Rs. 82 lakhs for five years.
