

Letter No. Msk/005/2021

To

Date: 14/04/2021

The Director,  
Ministry of Environment, Forests & Climate Change (IA Division),  
Indira Paryavaran Bhavan, Jor Bagh Road,  
New Delhi

**Sub:Submission of Six Monthly Compliance Report of Stipulated Conditions of Environmental Clearance for Stone Mining Project of M/s MSK (JV) with Production capacity of 6 MTPA located at Vill-AtelaKalan, Tehsil- CharkhiDadri, District – Bhiwani ,Haryana (54 ha) for submission period of June 2021.**

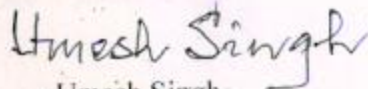
**Ref. No.J-11015/74/2014-IA.II(M)dated 11<sup>th</sup> June 2015**

Sir,

In accordance to the EC letter as above stated received from Ministry of Environment, Forests & Climate Change vide letter **J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June 2015**, We are submitting herewith six monthly compliance report of stipulated conditions of Environment Clearance (Soft only) along with laboratory analysis results the specific and general conditions and relevant annexure. We fully assure you that we will comply with all conditions as specified in the Environment clearance granted us.

**For M/s MSK (JV)**

Authorised Signatory,



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Copy to:

1. The Director, Ministry of Environment & Forests, Northern Regional Office, Sector-31, Dakshin Marg, Chandigarh-160030
2. The Member Secretary, Haryana State Pollution Control Board (HSPCB), Sector-6, Panchkula

**M/s MSK (JV), Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani (HR) (Capacity- 6 million TPA), (EC No- J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June, 2015).**

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**SIX-MONTHLY ENVIRONMENTAL COMPLIANCE REPORT OF  
STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE  
(Period-October 2020 to March 2021)**

**FOR**

**Stone Mine of Atela kalan , Village- Atela kalan, Tehsil- Dadri, District- Bhiwani (HR) (Capacity- 6 million TPA ),**

**Submitted by:**

**M/s MSK (JV), Village-Atela kalan  
Tehsil-Charkhi Dadri, Distt- Bhiwani (HR)**

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# 1

## INTRODUCTION

### 1.1 About Project

M/s MSK (JV) has obtained the Environmental Clearance Letter from MoEF & CC, New Delhi for the Mining of Stone Mine along with Associated Minor Minerals at Village “Atela Kalan Tehsil- Charkhi Dadri, over an area of **54Ha** in District-Bhiwani, Haryana Vide Ref. No. **J-11015/74/2014-IA.II (M) on dated: 11.06.2015.**

Total area of the mining site is 54 Ha. Total cost of the project is 30 Crores. The approval for the mining scheme and progressive mine closure plan was obtained from the Department of Mines & Geology, Haryana vide Letter no. **DMG/HY/AtelaKalan/MP/4154 on dated 15.09.2014.**

### 1.2 Purpose of the Report

As per the “Sub Para (i)” of “Para 10” of EIA Notification 2006, it is stated that “It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year” and as per compliance of condition mentioned in Environment Clearance Letter (i.e. PART B General Condition, point number XXVI), Six monthly compliance reports should be submitted to the Regulatory Authority of Central and State Government.

It is mandatory to submit a Six Monthly Compliance Report to show the status & compliance of all the Conditions mentioned in Environment clearance Letter, along with monitoring of various Environmental Parameters (as per CPCB Norms).

The regulatory authorities in this case are Ministry of Mines, New Delhi, MoEF& CC New Delhi Department of Environment, Chandigarh, Haryana State Pollution Control Board, Regional Office-MoEF& CC (Chandigarh), Central Ground Water Authority, Delhi, Dept. Of Forests, Chandigarh, Dept. of Mines & Geology, Chandigarh and District Collector (Bhiwani). Various scheduled Site Visits were conducted by a team of Experts to Monitor Pollution related parameters as defined by CPCB / HPCB. Samples for water and soil were also collected for further analysis.

Based on the Specific and General Conditions mentioned in the EC Letter, a Compliance Report was prepared by the Team on behalf of Project Proponent; details of which are present in Chapter – 2 entitled “**Adherence of specific and general conditions**”.

This report is supposed to submit after every six month as per the conditions stipulated in Environment Clearance Order. The Environmental assessment has been carried out to verify:

- 1) That the proposed project has not any adverse effect on the project site as well as its surrounding.
- 2) That there is compliance with the conditions stipulated in the Environmental Clearance Letter.
- 3) That the Project proponent is implementing the environmental safeguards in true spirit.
- 4) The non conformity in the project with respect to the environmental implication of the project.
- 5) That the project proponent is implementing the environmental pollution mitigative measures as suggested in approved Mining Plan and Form-1, Environmental Management Plan.

**1.3 Methodology for Preparation of Report is as follows:**

- 1) Study of EC Letter & Related Documents,
- 2) Site Visits by a Team of Experts,
- 3) Monitoring of Environment Parameters, viz. Ambient Air, Water, Noise, Soil & DG Sets,
- 4) Analysis of Samples collected during Monitoring,
- 5) Interpretation of Monitoring Results,
- 6) Preparation of Semi Annual Environmental Compliance Report.

**1.4 Generic Structure of Report:**

- 1) Purpose of the Report, explaining the need of a Compliance Report and Methodology Adopted for preparation of Report.
- 2) Environment Clearance Letter, prescribing all the conditions & guidelines to be followed during construction Phase and Operation Phase of the Project.
- 3) Site Study Report, showing status of the project and site photographs.
- 4) Compliance Report, explaining the entire General & specific conditions in the EC Letter and providing details w.r.t. each condition/ guideline.
- 5) Monitoring Reports & Analysis, showing the level of emission within the project site for various Environment Parameters.

# 2

## ADHERENCE TO SPECIFIC AND GENERAL CONDITIONS

### PART A – SPECIFIC CONDITIONS

A. SPECIFIC CONDITIONS		
SI. No.	Conditions	Reply
I.	Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Haryana and any other Court of Law, if any, as may be applicable to this project.	Agreed. Environmental Clearance was granted in favour of M/s MSK (JV) for proposed Stone along with Associated Minor Minerals at AtelaKalan, Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani by vide letter no. EC No- J-11015/74/2014-IA.II (M) dated 11th June, 2015. Copy of EC is enclosed as <b>Annexure-1</b> .
II.	Environmental clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the Competent Authority, as may be applicable to this project.	Agreed.
III.	The environmental clearance is valid for 12 years as the life of mine is 12 years.	Agreed.
IV.	No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.	Agreed. NOC Forest has been obtained from DFO Bhiwani vide letter no. <b>2046 dated 26.09.2014</b> . Copy of the same is enclosed as <b>Annexure- 2</b> .
V.	The project proponent shall obtain Consent to Operate, from the State Pollution Control Board, Haryana and effectively implement all the conditions stipulated therein.	Agreed. Consent to Operate has been granted by HSPCB vide letter no. <b>313100420BHICTO7791125 dated 01.08.2020</b> , which is <b>valid up to 30.09.2025</b> . Copy of the same is enclosed as <b>Annexure- 3</b> .
VI.	Proponent shall appoint an Occupational Health Specialist for regular and periodical medical examination of the workers engaged in the project and maintain records accordingly; also, Occupational health checkups for workers having some ailments like BP, diabetes, habitual smoking etc. shall be undertaken once in six months and necessary remedial /preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented.	Agreed. Dr. S.C. Gupta has been appointed for periodical medical examination of the workers engaged in the project and maintain records accordingly. He has also conducted occupational health checkups for workers having some ailments like BP, diabetes, habitual smoking etc. and will be undertaken once in six months and necessary remedial /preventive measures will be taken accordingly. Appointment letter is attached as <b>Annexure-7</b> .
VII.	An independent study has been organized during peak activity, to understand how the actual compare with the carrying capacities and further decisions taken to maintain sustainability of this essential stone extraction and supply activity. Project proponent shall ensure that the road may not be damaged due to transportation of stone.	Agreed and Complied.
VIII.	Implementation of Action Plan on the issues raised	Agreed.

**M/s MSK (JV), Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani (HR) (Capacity- 6 million TPA), (EC No- J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June, 2015).**

	during the Public Hearing shall be ensured. The PP shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the public hearing held on 10.10.2014.	
IX.	The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of Ministry of Environment, Forests & Climate Change and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological studies shall be carried out. The report on six monthly basis on changes in ground water level and quality shall be submitted to the Regional Office of the Ministry.	Agreed. Mining activity is being carried out as per approved mine plan. Copy of the same is enclosed as <b>Annexure- 4</b> .
X.	The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' Certificate for all the vehicles from authorized pollution testing centres.	Agreed and Complied. PUC certificate for all the vehicles has been obtained from authorized centres. During transportation all the haulage roads including the main ramp from the mines pit will be kept wide, levelled, compacted and properly maintained and watered regularly during the operation to prevent generation of dust due to movement of trucks dumpers and other vehicles.
XI.	There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis in consultation with Regional Director, Central Ground Water Board and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.	Noted & Agreed.
XII.	Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured	Agreed and Complied. Water Sprinkling is being regularly done at the haul road.
XIII.	A comprehensive study for slope stabilization of mine benches and OB dumps shall be undertaken within one year. The clearance is only for the stone and not for any associated mineral.	Agreed. OB dump at designated at site as per approved mining plan.
XIV.	Washing of all transport vehicles should be done inside the mining lease.	Agreed.
XV.	Native plant species of Amla, Tamarind, Neem, Arjun, Bauhinia and others as suggested by villagers/specialist may be planted.	Agreed.
XVI.	Implementation of Haryana Government Rehabilitation And Resettlement of Land Owners Policy As per applicability in the area.	Noted.
XVII.	Implementation of Environment Management Policy of the Company w.r.t. Judicious use of Mineral Resources for growth & development synchronizing mining & environment with prosperity.	Agreed.
XVIII.	The project proponent shall also take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted in the study area.	Agreed. Mining is being done as per Approved mining plan. Copy of the same is enclosed as <b>Annexure- 4</b> .



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XIX.	The illumination and sound at night at project site disturb the villages in respect of both human and animals population. Consequent sleeping disorders and stress may effect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise level at night. Project proponent must ensure that the biological clock of villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise level well within the prescribed limits for day light/night hours.	Agreed.
XX.	Where ever blasting is undertaken as part of mining activity, the project proponent shall carry out vibration studies well before approaching any such habitats or other buildings, to evaluate the zone of influence and impact of blasting on the neighbourhood. Within 500 meters of such sites vulnerable to blasting vibration, avoidance of use of explosive and adoption of alternative means of mineral extraction, such as ripper/dozer combination/rock breakers/ surface minor etc. Should be seriously considered and practiced wherever practicable. A provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the competent authority.	Agreed. Following precaution will be taken during the blasting: <ul style="list-style-type: none"> <li>➤ Drilling with sharp edges bits will minimize generation of noise.</li> <li>➤ Control blasting is being done with proper charge of explosive to minimize noise during blasting.</li> <li>➤ Regular Noise monitoring is being conducted at the project site.( Lab report attached as <b>Annexure- 5</b>)</li> <li>➤ Dense plantation in mining area is also reducing the propagation of noise.</li> <li>➤ Rock breakers are being used instead of secondary blasting.</li> <li>➤ Blasting is proposed to reduce the vibrations and check noise pollution. An earplug is being provided to the workers.</li> </ul>
XXI.	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers.	Agreed. Regularly water sprinkling is being done on main haulage roads and loading and unloading areas with water tankers fitted sprinklers.
XXII.	Transportation of the minerals by road passing through the villages shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the project. No road movement should be allowed on the existing village road network without appropriately increasing the carrying capacity of such roads.	Agreed.
XXIII.	Likewise, alteration or re-routing of foot paths, pagdandies, cart roads, and village infrastructure/public utilities or roads (for purpose	Agreed.

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	of land acquisition for mining) shall be avoided to the extents possible and in case such acquisition is inevitable, alternative arrangements shall be made first and only the area acquired. In these types of cases, inspection reports by site visit by experts may be insisted upon which should be done through reputed Institute.	
XXIV.	CSR activities by Companies including the Mining Establishments has become mandatory up to 2% of their financial Turn-over, Socio Economic Development of the neighborhood Habitats could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment & Forest and its Regional Office located at on six monthly basis.	Agreed. Rs 25 lakhs has been earmarked towards CSR activity under this project for fulfilling the requirements of villagers & Gram Panchyat.
XXV.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Agreed. Housing arrangement has been made for the labour near the site with all necessary amenities. Whereas rest shelter, first aid facility, crèche, soak pit and other basic sanitary facilities have been developed. All the temporary structure will be removed after the completion of the project.
XXVI.	A final mine closure plan along with details of corpus fund shall be submitted to the Ministry of Environment, Forest & Climate Change 5 years in advance of final mine closure for approval.	Agreed. A final mine closure plan along with details of corpus fund has already been submitted to the SEIAA well within the stipulated period as prescribed in the minor mineral concession rules 2012.

**B. GENERAL CONDITIONS**

SI. No.	Conditions	Response
I.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change	Agreed.
II.	No change in the calendar plan including excavation, quantum of mineral and waste shall be made.	Agreed. Work is being conducted as per the proposed mine scheme approved by DGM Haryana Vide letter no. <b>DMG/H1/Atela kalan/MP/4154 dated -13.09.2014.</b>
III.	The project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.	Agreed.
IV.	Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.	Monitoring of groundwater from existing dug wells and piezometers are being monitored regularly as per condition. In this reporting period, monitoring was done in Month of November ( <b>Post monsoon</b> ) and month of January ( <b>Winter</b> ).The monitoring reports of water quality are enclosed as <b>Annexure-5</b> ). Data of ground water level is given in <b>chapter-3 Table – 3.11</b> .
V.	Monitoring of Ambient air quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.	Agreed. Lab report of ambient air quality is attached as <b>Annexure- 5</b> .
VI.	The upliftment of scheduled caste/scheduled tribe population, specific programmes have been taken in to consideration specially with respect to education, health care, livelihood generation, infrastructure development & Promotion of sports & culture for SC/ST population and that these will be intensified in future.	Agreed.
VII.	The top-soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not be exceed 8m and the width 20m and overall slope of the dumps shall be maintained 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas	Agreed. Top soil is being used for reclamation and plantation purpose.

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	should continue until the vegetation becomes self sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office located at Chandigarh on Six monthly basis.	
VIII.	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and over burden dumps to prevent run off of water and flow of sediments directly in to the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drain shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dump to prevent run off of water and flow of sediments directly into the river and other water bodies and sumps capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pit shall be constructed at the corners of the garland drains and desilted at regular intervals.	Agreed.  Catch drains of appropriate size are constructed to arrest flow of silt and sediment. The collected water is being utilizing for watering the mine area, roads, green belt development etc. The drains are maintained regularly Mining Activity is being done as per approved mining plan.
IX.	Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. By planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within next five years.	Agreed. The Plantation has been done as per approved mining plan and with the consultation of DFO/Agriculture Department.
X.	Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check runoff and siltation shall be based on the rain fall data.	Noted.
XI.	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 & PM2.5 such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Agreed and complied. Lab reports are attached as <b>Annexure-5</b> .
XII.	Regularly monitoring of the flow rate of the springs	Agreed.

**M/s MSK (JV), Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani (HR) (Capacity- 6 million TPA), (EC No- J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June, 2015).**

	and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the ministry of Environment, Forest & Climate Change, its Regional Office Chandigarh, Central Ground water authority Regional Director, Ground Central Water Board, State Pollution Control Board and Central Pollution Control Board.	Lab reports enclosed as <b>Annexure-5</b> .
XIII.	Regularly Monitoring of Ground Water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year : Pre-monsoon (April-May), Monsoon ( August), Post monsoon ( November) and winter ( January) and the data collected may be sent regularly to the ministry of Environment, Forest & Climate Change, its Regional Office Chandigarh, Central Ground water authority Regional Director, Ground Central Water Board, State Pollution Control Board and Central Pollution Control Board	Regular monitoring of ground water level and ground water quality has been carried out in and around the mine lease. Lab reports are attached as <b>Annexur-5</b> . Ground water Level monitoring data in and around the mine area for <b>post monsoon (November)</b> and <b>January (Winter)</b> are given in <b>Table 3.11 of the chapter-3</b> .
XIV.	Blasting operation shall be carried out only during the day time, control blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Drills shall either be operated with dust extractors or equipped with water injection system.	Controlled blasting will be conducted during day time only and as per the approved mining scheme as well as DGMS guidelines. The mitigation measures to reduce the impact due to blasting are as follows: <ul style="list-style-type: none"> <li>➤ Controlled and Cushion blasting to reduce waste generation, ensuring the burden is one-third to one-half of the depth of hole</li> <li>➤ Proper warning signals are being used.</li> <li>➤ The number of rows in a blast is not more than four so that fly rock generation and ground vibration is reduced.</li> <li>➤ Maximum permissible charge per delay is decided on the basis of the distance of structure to be protected from the blasting.</li> <li>➤ The dampers or springs will be provided on the vehicles which are used for mining activities to reduce vibration</li> <li>➤ Regular Noise monitoring is being conducted regularly at the project site. (Lab report attached as <b>Annexure-5</b>).</li> </ul>
XV.	The critical parameters such as PM10 (size less than 10 micro meter), PM2.5 (size less than 2.5 micro meter), NOx in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of	Agreed. Lab reports enclosed as <b>Annexure- 5</b> .

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	discharged water shall also be monitored, (TDS, DO, pH & TSS). The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain. The circular no. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment, Forest & Climate Change, which is available on the website of the ministry <a href="http://www.envfor.nic.in">www.envfor.nic.in</a> shall also be referred in this regard for its compliance.	
XVI.	Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2 & NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. Data on ambient air quality should be regularly submitted to the ministry including its Regional Office located at Chandigarh and the State pollution Control Board/ Central Pollution Control Board once in six months.	Agreed. Monitoring of ambient air quality is being carried out in the core zone as well as in the buffer zone for PM10, PM2.5, SO2 & NOx. Lab reports are attached as <b>Annexure-5</b> .
XVII.	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Agreed.
XVIII.	Measures should be taken for control of noise level below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc should be provided with ear plugs/muffs	Following mitigation measure will be taken to reduce the noise impact in project site. <ul style="list-style-type: none"> <li>➤ All scientific blasting is proposed to reduce the vibrations and check noise pollution. An earplug is being provided to the workers.</li> <li>➤ All the machineries including transport vehicles are properly maintained to minimize generation of noise.</li> <li>➤ Drilling with sharp edges bits is provided to reduce generation of noise.</li> <li>➤ Noise source will be isolated.</li> </ul> Dense plantation in mining area is also reducing propagation of noise outside the core zone.(Noise report are attached as <b>Annexure- 5</b> .
XIX.	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluent.	Not Applicable.
XX.	Personnel working in dusty areas should wear protective respiratory devices and they should also	Following mitigation measures has been initiated for the workers who worked at critically dusty area.

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	be provided with adequate training and information on safety and healthy aspects.	<ul style="list-style-type: none"> <li>➤ Sprinkled with water at regular intervals</li> <li>➤ Operators and other persons near loading area are using the dust mask.</li> <li>➤ Scientific Mining has been proposed to minimize the effect of air pollution.</li> <li>➤ Wet drilling is being practiced.</li> <li>➤ Also allocated 08 lakh per annum for organizing health camps training purposes.</li> </ul>
XXI.	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	<p>Agreed.</p> <ul style="list-style-type: none"> <li>➤ Dust mask is being provided to the workers working in the dust prone areas as additional personal protective equipment's.</li> <li>➤ Workers are informed and kept aware about occupational health hazards due to such activities and preventive measures.</li> <li>➤ Workers health related problem is being properly addressed.</li> </ul>
XXII.	A separate environmental management cell with suitable qualified personnel should be set up under the control of a senior Executive, who will report directly to the head of the organization.	Agreed.
XXIII.	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the ministry and its Regional Office located at Chandigarh.	<p>Agreed &amp; Complied.</p> <p>Project Proponent is being reported Year wise expenditure of Environment protection Measures to the HSPCB and the Regional office of MoEF located at Chandigarh.</p>
XXIV.	The project authorities should inform to the Regional Office located at Chandigarh regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	<p>Agreed &amp; Complied.</p> <p>Already complied and already published Environmental Clearance conditions on website.</p>
XXV.	The regional office of this Ministry located at Chandigarh shall monitor compliance of the stipulated conditions. The project authorities should extend full co-operation to the officer(s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.	Agreed.
XXVI.	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest & Climate Change, its Regional Office, Chandigarh, Central Pollution Control Board and State Pollution Control Board.	We are regularly submitting six monthly compliance reports with monitoring reports to the northern regional office of MoEF & CC, HSPCB and SEIAA Haryana. Submission receipt of last compliance report is attached as <b>Annexure- 6</b> .
XXVII.	A copy of clearance letter will be marked to concerned panchayat/ local NGO, if any, from whom suggestion/ representation has been received while processing the proposal.	Noted.
XVIII.	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.	Agreed & Noted.
XXIX.	The Project authorities should advertise at least in	Complied.

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two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within the 7 days of the issue of the clearance and a copy of the clearance letter is available with the state pollution Control Board and also at the website of the Ministry of Environment, Forest & Climate change at <http://enfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Chandigarh.



# 3

## DETAILS OF ENVIRONMENTAL MONITORING

**3.0 Monitoring Portfolio:** This report is prepared for the period of October 2020 to March 2021 as per EC conditions. The samples were analyzed at NABL approved Environmental. Following environmental components has been monitored and analyzed.

1. Ambient Air Quality
2. Noise Quality
3. Water Quality
4. Soil Quality

### 3.1 AMBIENT AIR QUALITY MONITORING

#### 3.1.1 Ambient Air Quality Monitoring Stations

Ambient air quality monitoring has been carried out at 8 locations: Project site, Loading Area, 100 mtr from mine site, Haul Road, Vill- Atelakalan, Bilawal. Atela khurd, Dohka moji. This will enable to have a comparative analytical understanding about air quality and the changes in the air environment in the study area with respect to the condition prevailing. The locations of the ambient air quality monitoring stations are given in **Table 3.1**.

**Table 3.1 Details of Ambient Air Quality Monitoring Stations**

S. No.	Location	Location Name/ Description
1.	AAQ- 1	Project site
2.	AAQ- 2	Loading Area
3.	AAQ- 3	100 mtr from mine site
4.	AAQ- 4	Haul Road
5.	AAQ- 5	Vill- AtelaKalan
6.	AAQ- 6	Vill-Bilawal
7.	AAQ- 7	Vill-Atela khurd
8.	AAQ- 8	Vill-Dohka moji

#### 3.1.2 Ambient Air Quality Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Particulate Matter 2.5 (PM<sub>2.5</sub>)
- Particulate Matter 10 (PM<sub>10</sub>)
- Sulphur Dioxide (SO<sub>2</sub>)
- Nitrogen Dioxide (NO<sub>2</sub>)

Ambient Air Quality was monitored as per CPCB guidelines by installing RDS & FPS at each location for 24 hours.

The samples were analyzed as per standard methods specified by Central Pollution Control Board (CPCB) and IS: 5182. The techniques used for ambient air quality monitoring are given in **Table 3.2**.

Fine Particulate Sampler instruments have been used for monitoring Particulate Matter 2.5 (PM<sub>2.5</sub> i.e. <2.5 microns), and Respirable Dust Sampler was used for sampling Respirable fraction (<10 microns), gaseous pollutants like SO<sub>2</sub>, and NO<sub>2</sub>.

**Table 3.2 Techniques used for Ambient Air Quality Monitoring**

S. No.	Parameter	Technique	Technical Protocol
1	Particulate Matter 2.5	Fine Particulate Sampler, Gravimetric Method	#SOP No. VEL/SOP/01, Section No. SP 63
2	Particulate Matter 10	Respirable Dust Sampler, with cyclone separator, Gravimetric Method	IS-5182 (Part-23)
3	Sulphur dioxide	Modified West and Gaeke	IS-5182 (Part- II)
4	Nitrogen dioxide	Jacob &Hochheiser	IS-5182 (Part-VI)

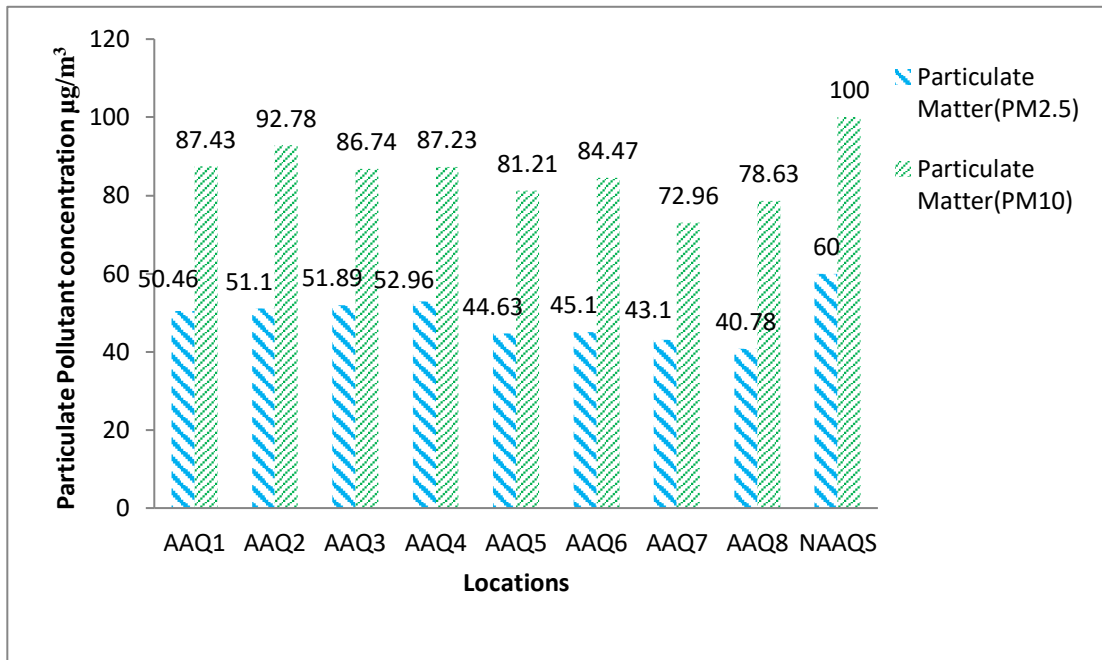
### 3.1.3 Ambient Air Quality Monitoring Results

The Detailed on-site monitoring results of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub> are presented in **Table 3.3**.

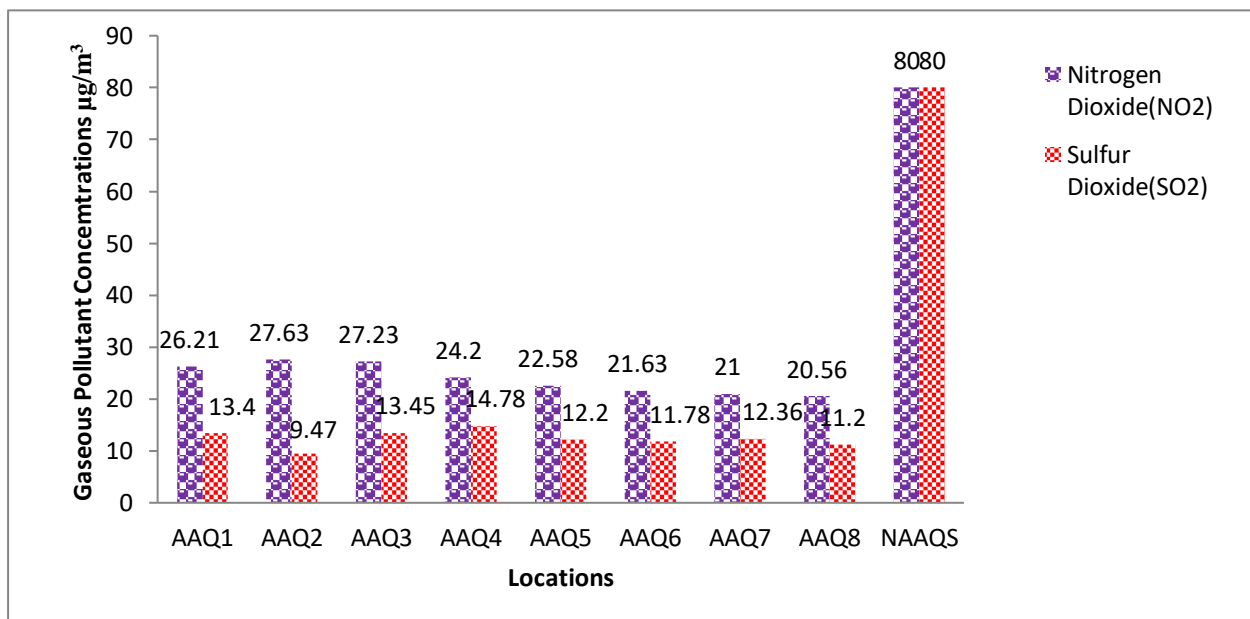
**Table 3.3 Ambient Air Quality Monitoring Results**

S. No.	Parameter	Test Result								NAAQS*
		AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8	
1.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	50.46	51.10	51.89	52.96	44.63	45.10	43.10	40.78	60
2.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	87.43	92.78	86.74	87.23	81.21	84.47	72.96	78.63	100
3.	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	26.21	27.63	27.23	24.20	22.58	21.63	21.00	20.56	80
4.	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	13.40	9.47	13.45	14.78	12.20	11.78	12.36	11.20	80

**Graphical Presentation of location wise variation of Ambient Air Quality**



**Fig. 3.1 Graphical representation of particulate pollutant**



**Fig.3.2 Graphical representation of gaseous pollutant**

**3.1.4 Discussion on Ambient Air Quality in the Study Area**

The level of PM<sub>2.5</sub> and PM<sub>10</sub> at all locations was found to be in range of 40.78 to 52.96 µg/m<sup>3</sup> and 72.96 to 92.78 µg/m<sup>3</sup> respectively. The level of NO<sub>2</sub> and SO<sub>2</sub> at all locations was found to be in range of 21.00 to 27.63 µg/m<sup>3</sup> and 9.47 to 14.78 µg/m<sup>3</sup> respectively. All the results were found to be well within the prescribed NAAQS limits.

## 3.2 AMBIENT NOISE MONITORING

### 3.2.1 Ambient Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels Near Project Site, Loading Area, 100 mtr from mine site, haul road, Vill-Atela Kalan and Village Bilawal due to various construction allied activities. A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Ambient noise monitoring was conducted at six locations at the boundary of the project site as given in **Table 3.4**.

**Table 3.4 Details of Ambient Noise Monitoring Stations**

S. No.	Location Code	Location Name/ Description
1.	N1	Near Project Site
2.	N2	Loading Area
3.	N3	100 mtr from mine site
4.	N4	Haul Road
5.	N5	Vill-AtelaKalan
6.	N6	Vill-Bilawal
7.	N7	Vill-Atela khurd
8.	N8	Vill-Dohka moji

### 3.2.2 Methodology of Noise Monitoring

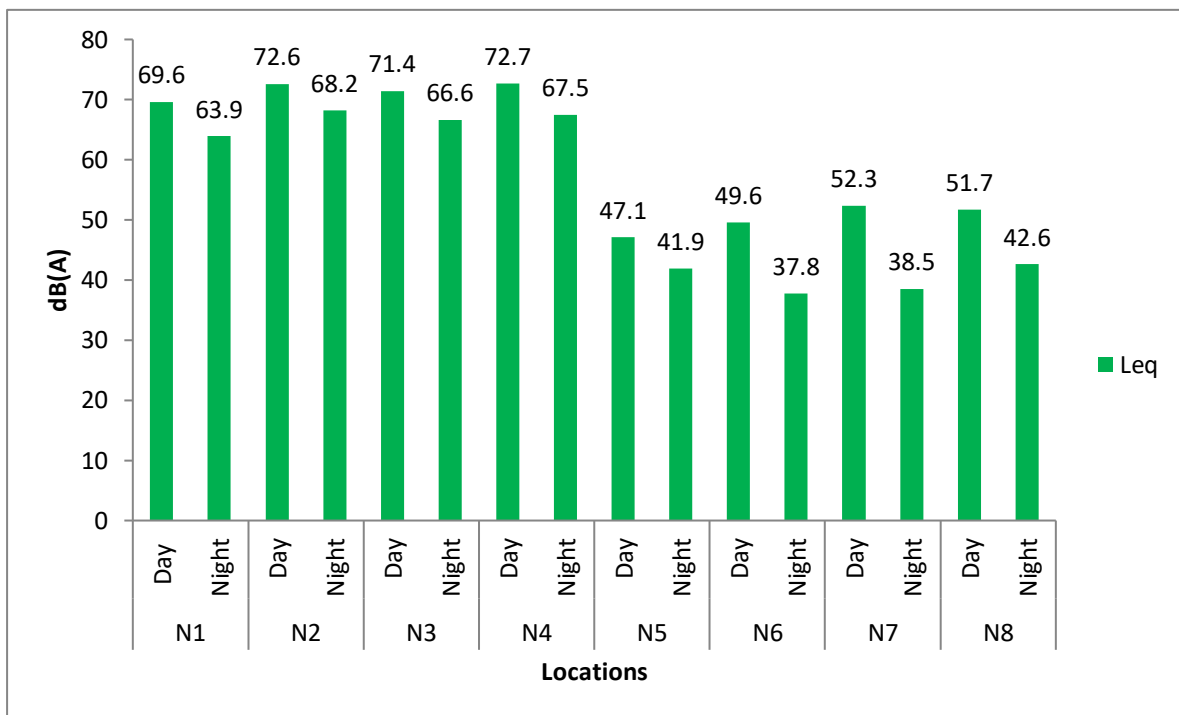
Noise levels were measured using sound level meter. Noise level monitoring was carried out continuously for 24-hours. The noise levels were monitored on working days only. During each hour Leq were directly computed by the instrument based on the sound pressure levels. Monitoring was carried out at 'A' response and fast mode.

### 3.2.3 Ambient Noise Monitoring Results

The location wise ambient noise monitoring results is summarized in **Table 3.5**. The location-wise variation of noise levels are graphically presented in **Figure 3.2**.

**Table 3.5 Ambient Noise Monitoring Results**

Parameter	N1		N2		N3		N4		N5		N6		N7		N8	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
L <sub>max</sub>	75.5	67.7	79.8	73.1	78.7	74.5	80.1	75.7	54.2	46.4	56.8	44.7	58.6	46.1	59.5	48.8
L <sub>min</sub>	62.8	54.3	65.6	56.4	63.3	56.2	64.6	55.2	42.6	37.8	43.5	31.3	42.4	33.7	44.6	36.1
L <sub>eq</sub>	69.6	63.9	72.6	68.2	71.4	66.6	72.7	67.5	47.1	41.9	49.6	37.8	52.3	38.5	51.7	42.6
CPCB	75.0	70.0	75.0	70.0	75.0	70.0	75.0	70.0	55.0	45.0	55.0	45.0	55.0	45.0	55.0	45.0



**Figure 3.3 Graphical Presentation of Ambient Noise Levels**

### 3.2.4 Discussion on Ambient Noise Levels in the Study Area

The Equivalent noise levels for day and night was found to be in range of 47.1 to 72.7 dB (A) and 37.8 to 68.2 dB (A) respectively. The noise levels were well within the permissible limits of NAAQS w.r.t Noise.

### 3.3 GROUND WATER QUALITY MONITORING

#### 3.3.1 Ground Water Quality Monitoring Station

Water sample was collected from the project site. The sample was analyzed for various parameters to compare with the standards for drinking water as per IS: 10500:2012 for ground water sources. The details of water sampling locations are given in **Table 3.6**.

**Table 3.6 Details of Water Quality Monitoring Station**

S. No.	Location Code	Location Name/ Description
1.	GW 1	Near Project site(Ground Water Sample) in Nov 2020 and Jan 2021
2.	GW2	Vill. -Bilawal(Ground Water Sample) in Nov 2020 and Jan 2021

#### 3.3.2 Methodology of Drinking water Quality Monitoring

Sampling of water was carried out on Nov 2020 and Jan 2021. Samples were collected as grab sample and sampling forms are filled in as per the sampling plan. The preservative sample were properly added to preserve as per standard operating procedures (SOP) and stored immediately in ice boxes, which were ensured for appropriate temperatures. Sample for chemical analysis was collected in polyethylene carboys. Sample collected for metal content were acidified to <2 pH with 1 ml HNO<sub>3</sub>. A sample for bacteriological analysis was collected in sterilized glass bottles.

Soon after the completion of sampling, chain of custody sheets for the samples are filled in and then they were transported by road for further analysis. Proper care was taken during packing and transportation of samples. All the samples reached the central laboratory within the holding times for different parameters. After ensuring the same the samples were forwarded immediately for analysis.

The samples were analyzed as per the standard procedures specified in 'Standard Methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA) and CPCB. The analytical techniques and the test methods adopted for testing of water are given below:

### 3.3.3 Ground Water Quality Monitoring Results

The detailed water quality monitoring results are presented in Table 3.7, 3.8, 3.9, 3.10

**Table 3.7 Ground Water Quality Monitoring Results (Post Monsoon) Near Mine Site**

S. No.	Parameter	Unit	Result	Limits of IS:10500 -2012	
				Requirement (Acceptable Limits)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	--	7.38	6.5 to 8.5	No Relaxation
2.	Colour	Hazen	*BDL (**DL 5Hazen)	5	15
3.	Turbidity	NTU	*BDL (**DL 0.1 NTU)	1	5
4.	Odour	--	Agreeable	Agreeable	Agreeable
5.	Taste	--	Agreeable	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	mg/l	153.45	200	600
7.	Calcium as Ca	mg/l	42.20	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	144.36	200	600
9.	Chloride as Cl	mg/l	52.18	250	1000
10.	#Cyanide as CN	mg/l	*BDL(**DL 0.02 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	11.70	30	100
12.	Total Dissolved Solids	mg/l	415.00	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	42.47	200	400
14.	Fluoride as F	mg/l	0.28	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	4.30	45	No Relaxation
16.	Iron as Fe	mg/l	0.21	0.3	No relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.03 mg/l)	0.03	0.2
18.	Boron	mg/l	0.36	0.5	1
19.	Chromium as Cr	mg/l	*BDL(**DL 0.03 mg/l)	0.05	No Relaxation
20.	Phenolic Compounds	mg/l	*BDL(**DL 0.001 mg/l)	0.001	0.002
21.	#Mineral Oil	mg/l	*BDL(**DL 0.01mg/l)	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	mg/l	*BDL(**DL 0.02 mg/l)	0.2	1.0
23.	Zinc as Zn	mg/l	0.32	5	15
24.	Copper as Cu	mg/l	0.18	0.05	1.5
25.	Manganese as Mn	mg/l	*BDL(**DL 0.06 mg/l)	0.1	0.3
26.	Cadmium as Cd	mg/l	*BDL(**DL 0.003 mg/l)	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL(**DL 0.01 mg/l)	0.01	No Relaxation
28.	Selenium as Se	mg/l	*BDL(**DL 0.01 mg/l)	0.01	No Relaxation
29.	Arsenic as As	mg/l	*BDL (**DL 0.001 mg/l)	0.01	0.05
30.	Mercury as Hg	mg/l	*BDL(**DL 0.001 mg/l)	0.001	No Relaxation
31.	Total Coliform	MPN/100ml	<2	Shall not be Detectable in 100ml Sample	
32.	E. Coli	MPN/100ml	Absent	Shall not be Detectable in 100ml Sample	

\*BDL- Below Detection Limit, \*\*DL- Detection Limit

# These parameters are not covered under the NABL scope.

**M/s MSK (JV), Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani (HR) (Capacity- 6 million TPA), (EC No- J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June, 2015).**

**Table 3.8 Ground Water Quality Monitoring Results (Post Monsoon) Village- Bilawal**

S. No.	Parameter	Unit	Result	Limits of IS:10500 -2012	
				Requirement (Acceptable Limits)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	--	7.74	6.5 to 8.5	No Relaxation
2.	Colour	Hazen	*BDL (**DL 5Hazen)	5	15
3.	Turbidity	NTU	*BDL (**DL 0. 1 NTU)	1	5
4.	Odour	--	Agreeable	Agreeable	Agreeable
5.	Taste	--	Agreeable	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	mg/l	136.39	200	600
7.	Calcium as Ca	mg/l	35.58	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	128.67	200	600
9.	Chloride as Cl	mg/l	42.50	250	1000
10.	#Cyanide as CN	mg/l	*BDL(**DL 0.02 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	11.857	30	100
12.	Total Dissolved Solids	mg/l	385.00	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	40.58	200	400
14.	Fluoride as F	mg/l	0.23	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	5.47	45	No Relaxation
16.	Iron as Fe	mg/l	0.20	0.3	No relaxation
17.	#Aluminium as Al	mg/l	*BDL(**DL 0.03 mg/l)	0.03	0.2
18.	Boron	mg/l	0.32	0.5	1
19.	Chromium as Cr	mg/l	*BDL(**DL 0.03 mg/l)	0.05	No Relaxation
20.	Phenolic Compounds	mg/l	*BDL(**DL 0.001 mg/l)	0.001	0.002
21.	#Mineral Oil	mg/l	*BDL(**DL 0.01mg/l)	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	mg/l	*BDL(**DL 0.02 mg/l)	0.2	1.0
23.	Zinc as Zn	mg/l	0.38	5	15
24.	Copper as Cu	mg/l	0.17	0.05	1.5
25.	Manganese as Mn	mg/l	*BDL(**DL 0.06 mg/l)	0.1	0.3
26.	Cadmium as Cd	mg/l	*BDL(**DL 0.003 mg/l)	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL(**DL 0.1mg/l)	0.01	No Relaxation
28.	Selenium as Se	mg/l	*BDL(**DL 0.01 mg/l)	0.01	No Relaxation
29.	Arsenic as As	mg/l	*BDL(**DL 0.01 mg/l)	0.01	0.05
30.	Mercury as Hg	mg/l	*BDL (**DL 0.001 mg/l)	0.001	No Relaxation
31.	Total Coliform	MPN/100ml	<2	Shall not be Detectable in 100ml Sample	
32.	E. Coli	MPN/100ml	Absent	Shall not be Detectable in 100ml Sample	

\*BDL- Below Detection Limit, \*\*DL- Detection Limit  
 # These parameters are not covered under the NABL scope.



**Table 3.9 Ground Water Quality Monitoring Result (Winter) (Near Mine site)**

S. No.	Parameter	Unit	Result	Limits of IS:10500 -2012	
				Requirement (Acceptable Limits)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	--	7.41	6.5 to 8.5	No Relaxation
2.	Colour	Hazen	*BDL (**DL 5Hazen)	5	15
3.	Turbidity	NTU	*BDL (**DL 0. 1 NTU)	1	5
4.	Odour	--	Agreeable	Agreeable	Agreeable
5.	Taste	--	Agreeable	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	mg/l	143.47	250	1000
7.	Calcium as Ca	mg/l	38.20	200	600
8.	Alkalinity as CaCO <sub>3</sub>	mg/l	128.36	75	200
9.	Chloride as Cl	mg/l	52.00	200	400
10.	#Cyanide as CN	mg/l	*BDL(**DL 0.02 mg/l)	500	2000
11.	Magnesium as Mg	mg/l	11.70	200	600
12.	Total Dissolved Solids	mg/l	423.00	0.3	No Relaxation
13.	Sulphate as SO <sub>4</sub>	mg/l	21.69	1.0	1.5
14.	Fluoride as F	mg/l	0.23	30	100
15.	Nitrate as NO <sub>3</sub>	mg/l	6.58	0.5	1
16.	Iron as Fe	mg/l	0.21	0.05	No Relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.03 mg/l)	0.05	1.5
18.	Boron	mg/l	0.32	0.1	0.3
19.	Total Chromium as Cr	mg/l	*BDL(**DL 0.03 mg/l)	45	No Relaxation
20.	Phenolic Compounds	mg/l	*BDL(**DL 0.001 mg/l)	0.003	No Relaxation
21.	#Mineral Oil	mg/l	*BDL(**DL 0.01mg/l)	0.01	No Relaxation
22.	#Anionic Detergents as	mg/l	*BDL(**DL 0.02 mg/l)	0.01	0.05
23.	Zinc as Zn	mg/l	0.38	0.001	No Relaxation
24.	Copper as Cu	mg/l	0.19	0.01	No Relaxation
25.	Manganese as Mn	mg/l	*BDL(**DL 0.06 mg/l)	0.03	0.2
26.	Cadmium as Cd	mg/l	*BDL(**DL 0.003 mg/l)	5	15
27.	Lead as Pb	mg/l	*BDL(**DL 0.01 mg/l)	0.2	1
28.	Selenium as Se	mg/l	*BDL(**DL 0.01 mg/l)	0.2	1.0
29.	Arsenic as As	mg/l	*BDL (**DL 0.001mg/l)	0.05	No Relaxation
30.	Mercury as Hg	mg/l	*BDL(**DL 0.001 mg/l)	0.001	0.002
31.	Total Coliform	MPN/100 ml	<2	Shall not be detectable in any 100 ml sample	
32.	E. Coli	MPN/100ml	Absent	Shall not be detectable in any 100 ml sample	

\*BDL- Below Detection Limit, \*\*DL- Detection Limit

# These parameters are not covered under the NABL scope.

**M/s MSK (JV), Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- CharkhiDadri, District- Bhiwani (HR) (Capacity- 6 million TPA), (EC No- J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June, 2015).**

**Table 3.10 Ground Water Quality Monitoring Result (Winter) (Vill. -Bilawal)**

S. No.	Parameter	Unit	Result	Limits of IS:10500 -2012	
				Requirement (Acceptable Limits)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	--	7.56	6.5 to 8.5	No Relaxation
2.	Colour	Hazen	*BDL (**DL 5Hazen)	5	15
3.	Turbidity	NTU	*BDL (**DL 0. 1 NTU)	1	5
4.	Odour	--	Agreeable	Agreeable	Agreeable
5.	Taste	--	Agreeable	Agreeable	Agreeable
6.	Total Hardness as	mg/l	132.50	250	1000
7.	Calcium as Ca	mg/l	37.69	200	600
8.	Alkalinity as CaCO <sub>3</sub>	mg/l	127.47	75	200
9.	Chloride as Cl	mg/l	45.30	200	400
10.	#Cyanide as CN	mg/l	*BDL(**DL 0.02 mg/l)	500	2000
11.	Magnesium as Mg	mg/l	9.34	200	600
12.	Total Dissolved Solids	mg/l	374.00	0.3	No Relaxation
13.	Sulphate as SO <sub>4</sub>	mg/l	34.12	1.0	1.5
14.	Fluoride as F	mg/l	0.24	30	100
15.	Nitrate as NO <sub>3</sub>	mg/l	6.54	0.5	1
16.	Iron as Fe	mg/l	0.17	0.05	No Relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.03 mg/l)	0.05	1.5
18.	Boron	mg/l	0.30	0.1	0.3
19.	Total Chromium as Cr	mg/l	*BDL(**DL 0.03 mg/l)	45	No Relaxation
20.	Phenolic Compounds	mg/l	*BDL(**DL 0.001 mg/l)	0.003	No Relaxation
21.	#Mineral Oil	mg/l	*BDL(**DL 0.01mg/l)	0.01	No Relaxation
22.	#Anionic Detergents as MBAS	mg/l	*BDL(**DL 0.02 mg/l)	0.01	0.05
23.	Zinc as Zn	mg/l	0.40	0.001	No Relaxation
24.	Copper as Cu	mg/l	0.19	0.01	No Relaxation
25.	Manganese as Mn	mg/l	*BDL(**DL 0.06 mg/l)	0.03	0.2
26.	Cadmium as Cd	mg/l	*BDL(**DL 0.003 mg/l)	5	15
27.	Lead as Pb	mg/l	*BDL(**DL 0.01mg/l)	0.2	1
28.	Selenium as Se	mg/l	*BDL(**DL 0.01 mg/l)	0.2	1.0
29.	Arsenic as As	mg/l	*BDL(**DL 0.01 mg/l)	0.05	No Relaxation
30.	Mercury as Hg	mg/l	*BDL (**DL 0.001 mg/l)	0.001	0.002
31.	Total Coliform	MPN/100ml	<2	Shall not be detectable in any 100 ml sample	
32.	E. Coli	MPN/100ml	Absent	Shall not be detectable in any 100 ml sample	

\*BDL- Below Detection Limit, \*\*DL- Detection Limit

# These parameters are not covered under the NABL scope.

### **3.3.4 Discussion on Water Quality in the Study Area**

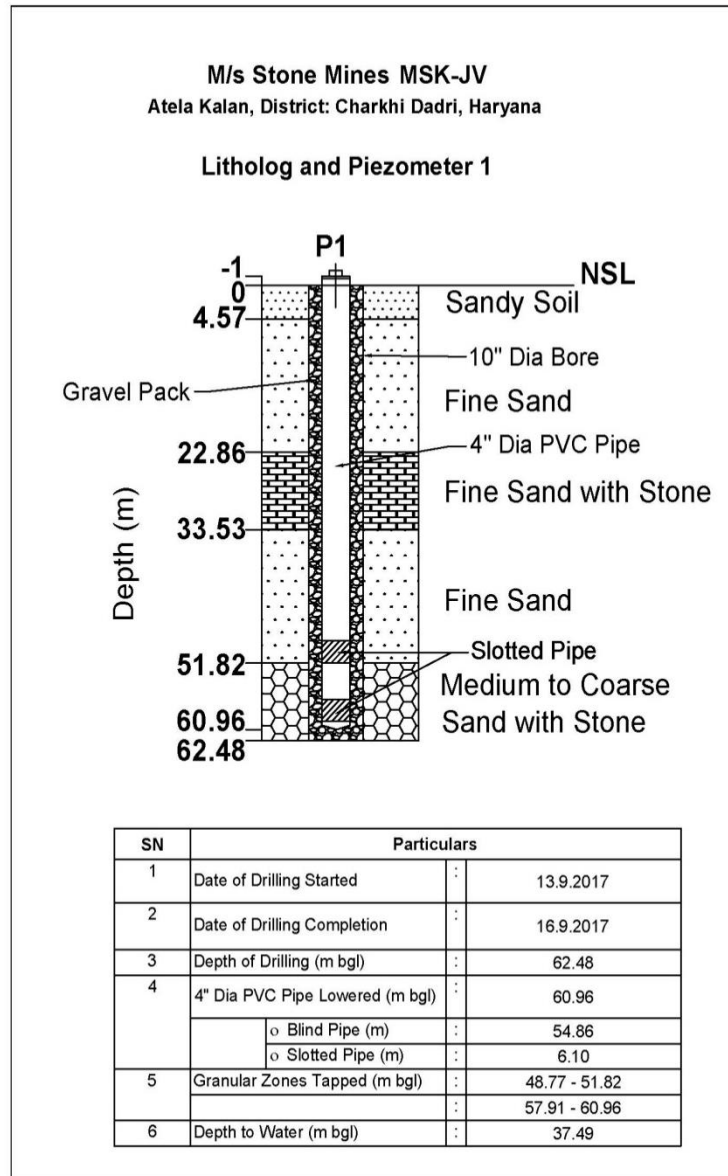
The Ground water quality of project site and Vill- Bilawal are observed to be slightly alkaline and neutral in nature respectively with total alkalinity reaching up to 17.47 mg/L and 144.36 mg/L respectively in water samples against the desirable limit of 200 mg/L(600 Permissible limit ). Total Hardness in the water is 132.50 mg/L and 153.45 mg/L at project site and vill- Bilawal against prescribed limit of 200 mg/L but it is within the permissible limit of 600mg/L. However, remaining parameters are within the CPCB prescribed limits.

### **3.3.5 Ground Water Level in and around the Mine area**

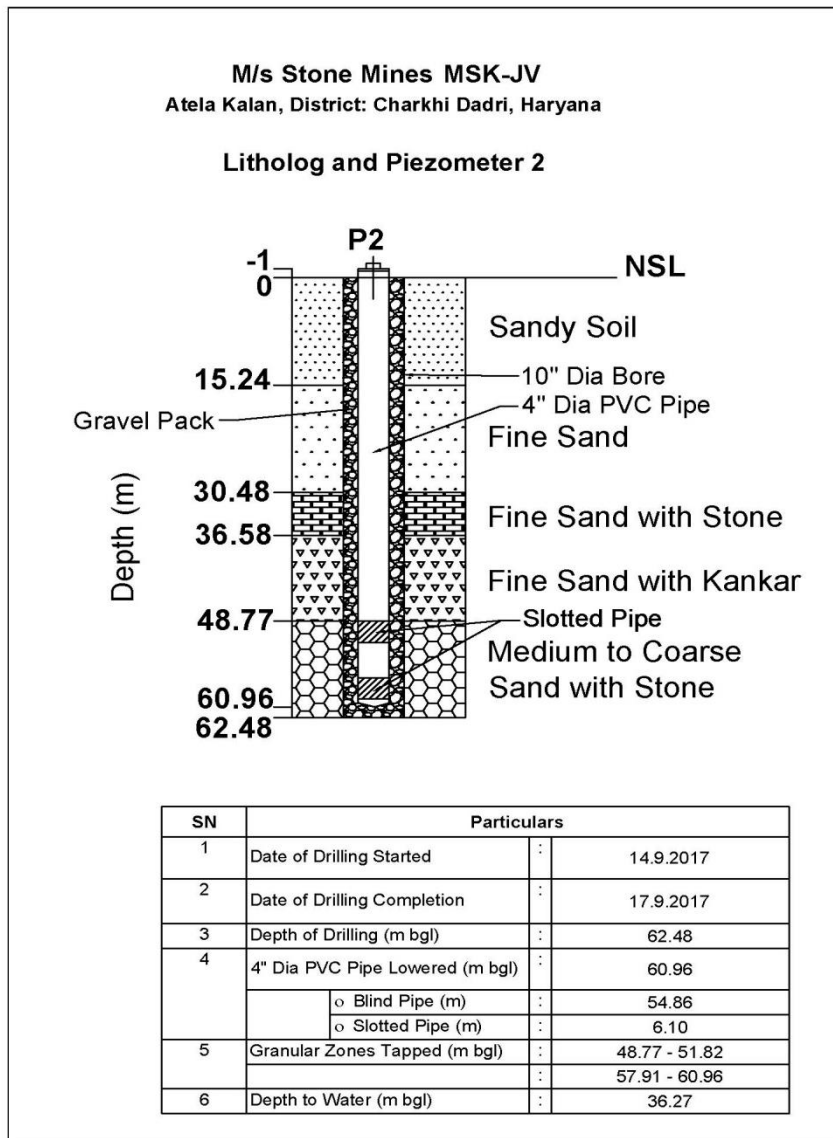
The Project Proponent has installed 2 piezometers in and around the mine site. Ground water level was monitored of those piezometers. Water level of the water sources was measured automatically form the piezometer during post monsoon (month of November) and during winter (month of January). The data is given below in table 3.11. This shows significant recharging in monsoon season and no impact of mining activities undertaken in the area on ground water. The cross section of piezometers also shown in Figure-3.4 and Figure-3.5

**Table 3.11: Monitoring data of Piezometer in the months of November 2020 and January 2021**

<b>Piezometers</b>	<b>Water Level (in mbgl) (November, 2020)</b>	<b>Water Level (in mbgl) (January, 2021)</b>	<b>Location</b>
PZ 1	39.58	40.19	28° 34' 38.4"N 76° 5' 41" E
PZ 2	39.56	40.26	28° 34' 37.9"N 76° 5' 43.9" E



**Fig 3.4: Cross section of Piezometer 1**



**Fig 3.5: Cross section of Piezometer 2**

### 3.4 SOIL MONITORING

#### 3.4.1 Soil Monitoring Locations

The objective of the soil monitoring is to identify the impacts of ongoing project activities on soil quality and also predict impacts, which have arisen due to execution of various constructions allied activities. Accordingly, a study of assessment of the soil quality has been carried out.

To assess impacts of ongoing project activities on the soil in the area, the physico-chemical characteristics of soils were examined by obtaining soil samples from selected points and analysis of the same. Single sample of soil was collected from the project site for studying soil characteristics, the location of which is listed in **Table 3.12**.

**Table 3.12 Details of Soil Quality Monitoring Location**

S. No.	Location Code	Location Name/ Description
1.	S1	Near project Site
2.	S2	Village -Bilawal

#### 3.4.2 Methodology of Soil Monitoring

The sampling has been done in line with IS: 2720 & Methods of Soil Analysis, Part-1, 2nd edition, 1986 of American Society for Agronomy and Soil Science Society of America. The homogenized samples were analyzed for physical and chemical characteristics (physical, chemical and heavy metal concentrations). The soil samples were collected in the month of March 2021.

The samples have been analyzed as per the established scientific methods for Physico-chemical parameters. The heavy metals have been analyzed by using Atomic Absorption Spectro-photometer.

### 3.4.3 Soil Monitoring Results

Single sample of soil is collected from the site to check the quality of soil of the study area .The Physico-chemical characteristics of the soil, as obtained from the analysis of the soil sample, are presented in **Table 3.13 and 3.14.**

**Table 3.13 Physico-Chemical Characteristics of Soil in the Study Area (Near project Site)**

S. No.	Parameter	Test-Method	Unit	Result
1.	<b>pH (at 25 °C)</b>	IS : 2720 (P-26) by pH Meter	--	<b>7.58</b>
2.	<b>Conductivity</b>	IS:14767 by Conductivity meter	mS/cm	<b>0.278</b>
3.	<b>Soil Texture</b>	IS : 2720 (P-22, RA2003)	--	<b>Silty</b>
4.	<b>Color</b>	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	--	<b>Light Brown</b>
5.	<b>Water holding</b>	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	%	<b>31.23</b>
6.	<b>Bulk density</b>	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	gm/cc	<b>1.48</b>
7.	<b>Chloride as Cl</b>	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>52.63</b>
8.	<b>Calcium as Ca</b>	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>18.84</b>
9.	<b>Sodium as Na</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>34.58</b>
10.	<b>Potassium as K</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	kg/hect.	<b>52.36</b>
11.	<b>Organic Matter</b>	IS:2720 (P-22) Titrimetric Method	%	<b>0.42</b>
12.	<b>Magnesium as Mg</b>	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>18.2</b>
13.	<b>Available Nitrogen</b>	IS:14684 Distillation Method	kg./hect.	<b>164.20</b>
14.	<b>Available</b>	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	kg./hect.	<b>18.57</b>
15.	<b>Zinc as Zn</b>	USEPA 3050B	mg/100gm	<b>4.60</b>
16.	<b>Manganese as Mn</b>	USEPA 3050B	mg/100gm	<b>3.36</b>
17.	<b>Chromium as Cr</b>	USEPA 3050B	mg/100gm	<b>0.81</b>
18.	<b>Lead as Pb</b>	USEPA 3050B	mg/100gm	<b>0.63</b>
19.	<b>Cadmium as Cd</b>	USEPA 3050B	mg/100gm	<b>1.24</b>
20.	<b>Copper as Cu</b>	USEPA 3050B	mg/100gm	<b>4.20</b>

SOP-Laboratory Standard operating procedure

**Table 3.14 Physico-Chemical Characteristics of Soil in the Study Area (Village -Bilawal)**

S. No.	Parameter	Test-Method	Unit	Result
1.	<b>pH (at 25 °C)</b>	IS : 2720 (P-26) by pH Meter	--	<b>7.82</b>
2.	<b>Conductivity</b>	IS:14767 by Conductivity meter	mS/cm	<b>0.281</b>
3.	<b>Soil Texture</b>	IS : 2720 (P-22, RA2003)	--	<b>Silty</b>
4.	<b>Color</b>	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	--	<b>Light Brown</b>
5.	<b>Water holding</b>	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	%	<b>25.60</b>
6.	<b>Bulk density</b>	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	gm/cc	<b>1.64</b>
7.	<b>Chloride as Cl</b>	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>41.72</b>
8.	<b>Calcium as Ca</b>	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>18.81</b>
9.	<b>Sodium as Na</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>22.18</b>
10.	<b>Potassium as K</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	kg/hect.	<b>51.78</b>
11.	<b>Organic Matter</b>	IS:2720 (P-22) Titrimetric Method	%	<b>0.43</b>
12.	<b>Magnesium as Mg</b>	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	mg/100gm	<b>7.69</b>
13.	<b>Available Nitrogen</b>	IS:14684 Distillation Method	kg./hect.	<b>184.28</b>
14.	<b>Available</b>	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	kg./hect.	<b>31.76</b>
15.	<b>Zinc as Zn</b>	USEPA 3050B	mg/100gm	<b>4.39</b>
16.	<b>Manganese as Mn</b>	USEPA 3050B	mg/100gm	<b>3.25</b>
17.	<b>Chromium as Cr</b>	USEPA 3050B	mg/100gm	<b>0.57</b>
18.	<b>Lead as Pb</b>	USEPA 3050B	mg/100gm	<b>0.70</b>
19.	<b>Cadmium as Cd</b>	USEPA 3050B	mg/100gm	<b>1.56</b>
20.	<b>Copper as Cu</b>	USEPA 3050B	mg/100gm	<b>3.45</b>

SOP-Laboratory Standard operating procedure

#### 3.4.4 Discussion on Soil Characteristics in the Study Area

The soil in study area is characterized by moderate organic content. The soil quality in the project area has not been affected by the project activities.



3.5 Site Photographs



Ambient Air Quality Monitoring



Ambient Noise Monitoring



**Soil Sampling**



**Water Sprinkling**



**Water Sprinkling**



**Anti-Smog Gun**



**Loading Point**



**Plantation**



**Blasting Sign Board**

No. J-11015/74/2014-IA.II (M)  
Government of India  
**Ministry of Environment, Forest and Climate Change**  
Impact Assessment Division  
\*\*\*\*\*

Indira Paryavaran Bhavan,  
Aliganj, Jor Bagh Road  
New Delhi-110 003

Dated: 11<sup>th</sup> June, 2015

To,

**M/s MSK (JV)**  
S-571 Greater Kailash II  
New Delhi-110 048

Tel. 011-29220374; Fax: 011-29220377  
Email: msk@mkeindia.com

**Sub.: Mining of Stone in the Mine of "Atela Kalan" with proposed production capacity of 6.0 million TPA of Stone (ROM) by M/s. MSK (JV), located at village – Atela kalan, Tehsil – Charkhi Dadri, District– Bhiwani, Haryana (54ha)-Environmental Clearance regarding.**

**Reference:** Online Application IA/HR/MIN/22915/2014

Sir,

This has reference to your online application and subsequent letter dated 14.01.2015 for the above mentioned proposal for Mining of Stone (Minor Mineral) with proposed production capacity of 6.0 million TPA (ROM) of Stone. The mine is located at village – Atela kalan, Tehsil – Charkhi Dadri, District– Bhiwani, Haryana in MLA of 54ha. The Latitudes & Longitudes of the site are 28°34'10.94" N to 28°34'42.74"N and 76°5'38.24" E to 76°6'13.90" E respectively on Toposheet No. 53D/2, 53D/3.

2. The Ministry had prescribed TOR on 11.06.2014. The Proponent after conducting Public Hearing on 10.10.2014 submitted the EIA/EMP report online for seeking environmental clearance. The proposal was appraised before the Expert Appraisal Committee in its Meeting held during December 10-11, 2014 wherein the EAC sought information/clarification. Based on the information submitted by the Proponent, the proposal was reconsidered by the EAC in its meeting held during March 16-18, 2015 wherein the Committee recommended the Proposal for environmental clearance for Mining of Stone (Minor Mineral) with proposed production capacity of 6.0 million TPA (ROM) of Stone.

3. The total mining lease area is 54.0ha which is Government Land. Project Proponent reported that there is no forest land involved. LOI was issued by the Department of Mines & Geology, Haryana vide Memo No. DMG/HY/ML/Atela Kalan/2013/155 dated 03.01.2014, Chandigarh. Mining Plan & Progressive Mine Closure Plan has been approved by Department of Mines & Geology, State Govt. of Haryana vide letter No. DMG/HY/Atela Kalan/MP/4154, dated 15.09.2014. Project Proponent informed that the Department of Mines and Geology, Govt. of Haryana,

vide letter dated 13.01.2015 mentioned that there is no material change in both the plans except some of the minor changes.

4. Method of mining will be opencast mechanized for Mining of Stone (Minor Mineral) with production capacity of 6.0 million TPA (ROM) of Stone by digging, sorting and grading of minerals and transportation by trucks/dumpers. Bench height will be 9m. Each bench will advance one by one. The overall pit slope will be maintained at 50°. The mineral bearing rocks being hard and compact and blasting is proposed. Proponent reported that 27.56ha area will be converted into water reservoir, 18.91ha for Greenbelt development/Plantation; 0.18ha area for Infrastructure development, 2.08ha for road and 5.27ha area will be the undisturbed area. The mineable reserves are 69.105 Million Tonnes and life of mine is 12 years. Total water requirement for the project is 40 KLD which will be sourced from Nearby Villages.

5. The Latitudes & Longitudes of the site are 28°34'10.94" N to 28°34'42.74"N and 76°5'38.24" E to 76°6'13.90" E respectively on Toposheet No. 53D/2, 53D/3. Project Proponent reported that there are no National Parks, Wildlife Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves within 10 km radius of mine site. No Schedule – I species were reported within buffer zone. Proponent reported that mining lease does not fall in Aravalli Hill range and submitted a certificate from the Department of Mines & Geology, State Govt. of Haryana vide letter dated 20.08.2014. Proponent reported that total greenbelt & plantation will be carried out on 18.91 ha area till the end of the life of mine, out of which 3.4 ha will be unworked area & remaining 15.51 ha under plantation on benches. Green belt all along the mining lease boundary, quarry edge, roads, crushing plant, office, etc. The Species proposed for greenbelt development are Aam (*Magnifera Indica*), Jamun (*Syzygium cumini*), Arjun (*Terminalia arjuna*), Shahtoot (*Morus Alba*), Neem (*Azadiracta indica*), Pipal (*Ficus religiosa*), Ber (*Ziziphus mauritiana*), etc. Other Fruit bearing species, native species and plants useful for local etc. will also be planted.

6. The baseline data was generated for the period during Summer Season - March to May, 2014 and one month additional monitoring in October, 2014. The Committee deliberated on the baseline data and found that the principle environment parameters are well within the permissible limits as prescribed by the CPCB. Project Proponent reported that Action Plan for ensuring good occupational environment for mine workers has been prepared based on Recommendations of Nationally reputed Institute and the same will be implemented during mining operation.

7. The Public Hearing was conducted on 10<sup>th</sup> October, 2014 at 11:00 am at Mine Site, Village- Atela Kalan, Tehsil -Charkhi Dadri, District: Bhiwani (Haryana). The Public Hearing was presided over by Shri D.K. Behera, Deputy Commissioner, Bhiwani. The representative of Haryana SPCB was also present. The issues raised during Public Hearing were discussed during the Meeting. Project Proponent reported that besides making provision for fluoride free drinking water, periodical medical test will be done and Rs. 1.0 Lakh as Capital cost & Rs. 25,000 per year as Recurring cost under Budget for prevention of fluorosis and awareness programs will be conducted in the nearby villages.

8. Total cost of the Project is Rs. 30 Crores. The Project Proponent has earmarked Rs. 75 Lakhs/- towards Environmental Protection Measures & Rs. 12.0 Lakhs/annum towards recurring expenses. Proponent informed that Rs. 25.00 Lakh/- has been earmarked towards CSR activities. Project Proponent reported that there is a Court case in the Hon'ble High Court Punjab & Haryana in the matter of CWP No. 27700 of 2013-Rajbir Singh v/s State and others. The petitioner had challenged the conditions of the auction notice and the rules relating to Payment of Rent and Compensation to the land owners. The Hon'ble High Court did not restrain the auction proceedings and held that the auctions may be held but it has also directed its orders dated 17.12.2013 that the same shall be subject to final outcome of above said CWP. Accordingly, the acceptance /Lol was issued to the outcome of said case. The said case is still pending before Hon'ble Punjab and Haryana High Court for adjudication.

9. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the environmental clearance under the provisions thereof to the above mentioned proposal of **M/s MSK (JV) for Mining of Stone (Minor Mineral) with proposed production capacity of 6.0 million TPA (ROM) of Stone in the mine lease area of 54ha, located at village-Atela kalan, Tehsil – Charkhi Dadri, District- Bhiwani, Haryana** subject to compliance of the followings terms and conditions and environmental safeguards mentioned below:-

**A. Specific conditions**

- (i) Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Haryana and any other Court of Law, if any, as may be applicable to this project.
- (ii) Environmental clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the Competent Authority, as may be applicable to this project.
- (iii) The environmental clearance is valid for 12 years as the life of mine is 12 years.
- (iv) No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
- (v) The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Haryana and effectively implement all the conditions stipulated therein.
- (vi) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented.



- (vii) An independent study be organized during peak activity, to understand how the actuals compare with the carrying capacities and further decisions taken to maintain sustainability of this essential stone extraction and supply activity. Project Proponent shall ensure that the road may not be damaged due to transportation of stone.
- (viii) Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The PP shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing held on 10.10.2014.
- (ix) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment, Forest and Climate Change and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out; The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry.
- (x) The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centres.
- (xi) There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis in consultation with Regional Director, Central Groundwater Board and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
- (xii) Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.
- (xiii) A comprehensive study for slope stabilization of mine benches and OB dumps shall be undertaken within one year. The Clearance is only for the Stone and not for any associated mineral.
- (xiv) Washing of all transport vehicles should be done inside the mining lease.
- (xv) Native plant species as suggested by villagers/specialist may be planted.
- (xvi) Implementation of Haryana Government Rehabilitation and Resettlement of Land Owners' Policy as per applicability in the area.
- (xvii) Implementation of Environment Management Policy of the Company w.r.t. judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity.
- (xviii) The Project Proponent shall also take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted in the study area.

- (xix) The illumination and sound at night at project site, disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. Project Proponent must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.
- (xx) Where ever blasting is undertaken as part of mining activity, the Project Proponent shall carry out vibration studies well before approaching any such habitats or other buildings, to evaluate the zone of influence and impact of blasting on the neighbourhood. Within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/dozer combination/rock breakers/ surface miners etc. should be seriously considered and practiced wherever practicable. A provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the competent authority.
- (xxi) Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers.
- (xxii) Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The Project Proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.
- (xxiii) Likewise, Alteration or re-routing of foot paths, pagdandies, cart roads, and village infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition is inevitable, alternative arrangements shall be made first and then only the area acquired. In these types of cases, Inspection Reports by site visit by experts may be insisted upon which should be done through reputed Institutes.
- (xxiv) CSR activities by Companies including the Mining Establishments has become mandatory up to 2% of their financial Turn-over, Socio Economic Development of the neighborhood Habitats could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report

shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Chandigarh on six monthly basis.

- (xxv) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxvi) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest & Climate Change 5 years in advance of final mine closure for approval.

## **B. General conditions**

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest & Climate Change.
- (ii) No change in the calendar plan including excavation, quantum of stone and waste should be made.
- (iii) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.
- (iv) Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.
- (v) Monitoring of Ambient Air Quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.
- (vi) The upliftment of scheduled caste/scheduled tribe population, specific programmes have been taken in to consideration specially with respect to education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population and that these will be intensified in future.
- (vii) The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the

vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office located at Chandigarh on six monthly basis.

- (viii) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
- (ix) Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (x) Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xi) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM<sub>10</sub> and PM<sub>2.5</sub> such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest & Climate Change, its Regional Office, Chandigarh, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xiii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year – pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest

& Climate Change and its Regional Office, Chandigarh, Central Ground Water Authority and Regional Director, Central Ground Water Board.

- (xiv) Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Drills shall either be operated with dust extractors or equipped with water injection system.
- (xv) The critical parameters such as  $PM_{10}$  (size less than 10 micro meter),  $PM_{2.5}$  (size less than 2.5 micro meter),  $NO_x$  in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS))]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forests & Climate Change, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.
- (xvi) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for  $PM_{10}$ ,  $PM_{2.5}$ ,  $SO_2$  &  $NO_x$  monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. Data on ambient air quality should be regularly submitted to the Ministry including its Regional office located at Chandigarh and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (xvii) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (xviii) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (xix) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (xx) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (xxi) Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (xxii) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (xxiii) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Chandigarh.
- (xxiv) The project authorities should inform to the Regional Office located at Chandigarh regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xxv) The Regional Office of this Ministry located at Chandigarh shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xxvi) The Project Proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest & Climate Change, its Regional Office, Chandigarh, Central Pollution Control Board and State Pollution Control Board.
- (xxvii) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Chandigarh, Central Pollution Control Board and State Pollution Control Board.
- (xxviii) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- (xxix) State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xxx) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest & Climate Change at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Chandigarh.

10. The Ministry or any other Competent Authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

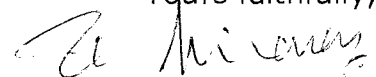
11. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may

result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

12. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Haryana and any other Court of Law relating to the subject matter.

13. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,



**(Dr. U. Sridharan)**  
**Director (S)**

**Copy to:**

- 1). **The Secretary**, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
- 2). **The Secretary**, Department of Environment, Government of Haryana, Chandigarh.
- 3). **The Secretary**, Department of Forests, Government of Haryana, Chandigarh.
- 4). **The Secretary**, Department of Mines and Geology, Government of Haryana, Chandigarh
- 5). **The Additional Principal Chief Conservator of Forests**, Region Office (Northern Region) Ministry of Environment and Forests, Bays No. 24-25, Dakshin Marg, Sector-31A Chandigarh-160030.
- 6). **The Chairman**, Haryana State Pollution Control Board, Plot No. C-11, Sector-6, Panchkula- 134109, Haryana
- 7). **The Chief Wildlife** of the State Govt., Haryana
- 8). **The Member Secretary**, Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- 9). **The District Collector, Bhiwani** District, State of Haryana.
- 10). **Guard File.**
- 11). **MoEF &CC website.**



**(Dr. U. Sridharan)**  
**Director (S)**

# FOREST DEPARTMENT GOVT. OF HARYANA

## O/o Divisional Forest Officer, Bhiwani

Meham Road, Vidya Nagar, Bhiwani, Tel. No. 01664-242430, E-mail:-dfo.bhiwani@yahoo.com

क्रमांक / ..... 2046

दिनांक / ..... 26/9/14

सेवा मे:- ✓ M/s. MSK (JV),  
S,571 Greater Kailash,  
Part-II New Delhi -110046

विषय: NOC from Forest Department w.r.t. proposed Minor Mineral project over an area of 54.00 hectares falling in Khasra Nos. 103, 104 min.105,106,107 min of Village Atela Kalan in Tehsil Dadri District Bhiwani.

संदर्भ: आपका प्रार्थना पत्र MSK/2014-15/05/02 दिनांक 21.5.2014 के संदर्भ में।

—000—


उपरोक्त विषय सम्बन्ध में विषयांकित Minor Mineral project गांव अटेला कलां तहसील दादरी जिला भिवानी स्थित खसरा नं० 103, 104 min.105,106,107 min बारे समय-2 में मौका पर की गई विभागीय संयुक्त निरीक्षण रिपोर्ट/Ground Truthing Report व वन राजिक अधिकारी बाढड़ा द्वारा दिनांक 9.9.2014 को मौका पर की गई विभागीय संयुक्त निरीक्षण रिपोर्ट के आधार पर गांव अटेला कलां के गैर मुमकीन पहाड़ के खसरा नं० 103 के कुल क्षेत्र में से 20.92 हैक्टेयर, खसरा नं० 104 मीन में 6.46 हैक्टेयर, खसरा नं० 105 में 2.80 हैक्टेयर, खसरा नं० 106 मीन के कुल क्षेत्रफल में से 21.59 हैक्टेयर व खसरा नं० 107 मीन में 2.23 हैक्टेयर क्षेत्र अरावली पौधारोपण क्षेत्र में नहीं आता और वर्णित क्षेत्र किसी प्रकार की वन भूमि (Forest Land) का पार्ट भी नहीं हैं।

अतः वन विभाग द्वारा गांव अटेला कलां स्थित गैर मुमकीन पहाड़ के खसरा नं० 103, 104 min.105,106,107 min में  $20.92+6.46+2.80+21.59+2.23 = 54.00$  हैक्टेयर ऐरिया में खनन से सम्बन्धित गतिविधियां चलाने की अनुमति निम्न शर्तों के आधार पर दी जाती है:-

1. मौका पर भारतीय वन संरक्षण अधिनियम 1980 की पालना सुनिश्चित करनी होगी तथा अरावली पौधारोपण क्षेत्र/वन भूमि को गैर वन वानिकी उद्देश्य हेतु प्रयोग करने से पूर्व नियमानुसार वन विभाग से अनुमति लेनी होगी।
2. खनन ऐरिया सैक्शन-4 (सामान्य) के तहत आता है। इसलिये मौका पर पंजाब भू-संरक्षण अधिनियम 1900 तथा भारतीय वन संरक्षण अधिनियम 1927 की पालना सुनिश्चित करनी होगी।
3. मौका पर खनन क्षेत्र के साथ लगते हुये अरावली पौधारोपण को कोई हानि नहीं पहुंचाई जाएगी।




4. यूजर एजेंसी द्वारा मौका पर खनन क्षेत्र में लगवाये गये पिल्लरों पर जी0पी0एस0 कोर्डिनेट अंकित करवाये जायेंगे।
5. भारतीय वन्य प्राणी अधिनियम 1972 की सभी शर्तों की पालना की जाएगी।  
इसके अतिरिक्त मौका पर उपरोक्त शर्तों के अलावा पर्यावरण को क्षति पहुंचाने की कोई भी गैर कानूनी गतिविधि/उल्लंघना पाई गई तो वन विभाग द्वारा यह अनापत्ति प्रमाण पत्र रद्द किया जा सकता।

  
वन मण्डल अधिकारी,  
भिवानी।

पृ0कमांक :

दिनांक:

इसकी एक प्रति वन राजिक अधिकारी बाढड़ा को मौका पर वन अधिनियमों की दृढता से पालना सुनिश्चित करने हेतु प्रेषित है।

  
वन मण्डल अधिकारी  
भिवानी।



# HARYANA STATE POLLUTION CONTROL BOARD

SCF-32, sector 13, HUDA, Bhiwani Ph. 01664-240259 Email:- hspcbrojr@gmail.com

E-mail: hspcb@hry.nic.in



No. HSPCB/Consent/ : 313100420BHICTO7791125

Dated:01/08/2020

To.

M/s :MSK JV

Atela Kalan Stone Mines, Village- Atela Kalan, District Charki Dadri, Haryana

Subject: Grant of consent to operate to M/s MSK JV.

Please refer to your application no. 7791125 received on dated 2020-06-26 in regional office Bhiwani. With reference to your above application for consent to operate, M/s MSK JV is here by granted consent as per following specification/Terms and conditions.

<b>Consent Under</b>	BOTH
<b>Period of consent</b>	01/10/2020 - 30/09/2025
<b>Industry Type</b>	Mining and ore beneficiation
<b>Category</b>	RED
Investment(In Lakh)	703.089417
Total Land Area(Sq. meter)	54000.0
Total Builtup Area(Sq. meter)	400.0
<b>Quantity of effluent</b>	
1. Trade	0.0 KL/Day
2. Domestic	1.0 KL/Day
Number of outlets	1.0
<b>Mode of discharge</b>	
1. Domestic	septic tank with soak pit
2. Trade	
<b>Domestic Effluent Parameters</b>	
1. NA	
<b>Trade Effluent Parameters</b>	
1. NA	
Number of stacks	1
<b>Height of stack</b>	
1. NA	
<b>Emission parameters</b>	
1. SPM	100 mg/m <sup>3</sup>
<b>Product Details</b>	
1. Stone Alongwith associated minor minerals,	20000 Metric Tonnes/day

<b>Capacity of boiler</b>	
1. NA	Ton/hr
<b>Type of Furnace</b>	
1. NA	
<b>Type of Fuel</b>	
1. Diesel	0.500 KL/day
<b>Raw Material Details</b>	
Stone Along with associated minor minerals, from hills	20000 Metric Tonnes/Day

*Regional Officer, Bhiwani*  
*Haryana State Pollution Control Board.*

### **Terms and conditions**

1. The applicants shall maintain good house keeping both within factory and in the premises. All hose pipelines valves, storage tanks etc. shall be leak proof. In plant allowable pollutants levels, if specified by State Board should be met strictly.
2. The applicant/company shall comply with and carry out directive/orders issued by the Board in this consent order at all subsequent times without negligence of his /its part. The applicant/company shall be liable for such legal action against him as per provision of the law/act in case of violation of any order/directives. Issued at any time and or non compliance of the terms and conditions of his consent order.
3. The applicant shall make an application for grant of consent at least 90 days before the date of expiry of this consent.
4. Necessary fee as prescribed for obtaining renewal consent shall be paid by the applicant alongwith the consent application.
5. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above required variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard vary all or such condition and there upon the applicant shall be bound to comply with the conditions so varied.
6. The industry shall provide adequate arrangement for fighting the accidental leakages, discharge of any pollutants gas/liquids from the vessels, mechanical equipment etc. which are likely to cause environment pollution.
7. The industry shall comply noise pollution (Regulation and control) Rules, 2000.
8. The industry shall comply all the direction/Rules/Instructions as may be issued by the MOEF/CPCB/HSPCB from time to time.
9. The industry shall ensure that various characteristics of the effluents remain within the tolerance limits as specified in EPA Standard and as amended from time to time and at no time the concentration of any characteristics should exceed these limits for discharge.
10. The industry would immediately submit the revised application to the Board in the event of any change in the raw material in process, mode of treatment/discharge of effluent. In case of change of process at any stage during the consent period, the industry shall submit fresh consent application alongwith the consent to operate fee, if found due, which may be on any account and that shall be paid by the industry and the industry would immediately submit the

consent application to the Board in the event of any change during the year in the raw material, quantity, quality of the effluent, mode of discharge, treatment facilities etc.

11. The officer/official of the Board shall reserve the right to access for the inspection of the industry in connection with the various process and the treatment facilities. The consent to operate is subject to review by the Board at any time.

12. Permissible limits for any pollutants mentioned in the consent to operate order should not exceed the concentration permitted in the effluent by the Board.

13. The industry shall pay the balance fee, in case it is found due from the industry at any time later on.

14. If the industry fails to adhere to any of the conditions of this consent to operate order, the consent to operate so granted shall automatically lapse.

15. If the industry is closed temporarily at its own, they shall inform the Board and obtain permission before restart of the unit.

16. The industry shall comply all the Directions/ Rules/Instructions issued from time to time by the Board.

#### **Specific Conditions :**

1. That the unit will run and maintain the APCM & green belt. 2. That the unit will apply for renewal of consent to operate before 90 days from the expiry of this CTO. 3. The said mining project will make strict compliance of EC granted by SEIAA. 4. The said unit will submit half yearly Environment management report as per EC condition & board policy for mining projects.

Dinesh Kumar  
Yadav

Digitally signed by Dinesh  
Kumar Yadav  
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**Regional Officer, Bhiwani**

**Haryana State Pollution Control Board.**



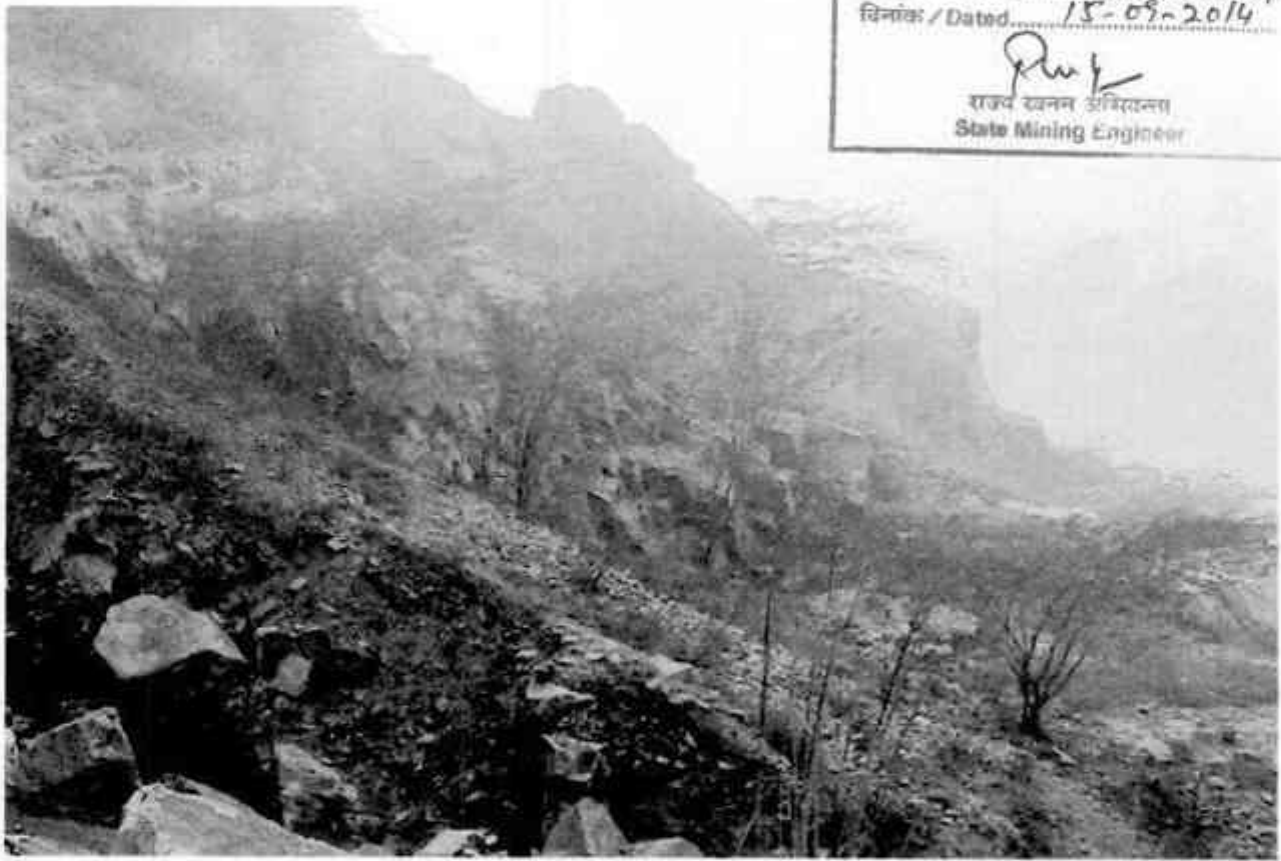
# FINAL MINING PLAN AND PROGRESSIVE MINE CLOSURE PLAN OF STONE ALONG WITH ASSOCIATED MINOR MINERALS

VILLAGE: ATELA KALAN  
DISTRICT: BHIWANI  
STATE: HARYANA  
(Area-54Hectares)

खान एवं भूविज्ञान विभाग, हरियाणा, चण्डीगढ़  
Department of Mines and Geology,  
Haryana, Chandigarh  
**APPROVED**

With Conditions  
अपनी जो शर्तें अंगीकारित  
Vide letter No. DMG/HY/Atela Kalan/MP/4154  
दिनांक / Dated: 15-09-2014

  
राज्य खनन अभियन्ता  
State Mining Engineer



TO: DMG, HARYANA

## APPLICANT

M/s. MSK (JV),  
S-571, Greater Kailash Part-II,  
New Delhi -110048

## PREPARED BY

S.N. SHARMA  
RQP/DDN/0135/2001-A  
House No. 282, sector 11-D,  
Faridabad (Haryana)

**MINING PLAN AND PROGRESSIVE MINE CLOSURE PLAN**

**OF**

**STONE ALONG WITH ASSOCIATED MINOR MINERALS**

**IN VILLAGE: ATELA KALAN**

**(Area-54Hectares)**

**DISTRICT: BHIWANI.**

**STATE: HARYANA.**

**APPLICANT-**

**M/s MSK (JV),**

**S-571, Greater Kailash Part-II, New Delhi -110048**

**PREPARED BY**

**S.N. Sharma**

**RQP/DDN/0135/2001-A.**

**House No. 282, Sector 11D Faridabad (Haryana)**



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### LIST OF ANNEXURE

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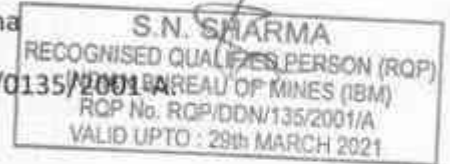


**Certificate**

The Mining plan and Progressive Mine Closure Plan complies all statutory rules, regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed.

S.N. Sharma

RQP/DDN/0135/2001/A



**Certificate**

- i) Certified that the provisions of Mines Act, Rules & Regulations made there under have been observed in this Mining Plan and whenever specific permission is required the applicant will approach the Director General of Mines Safety.
- ii) It is also certified that the information furnished in the above Mining Plan are true and correct to the best of my knowledge. In case of default, the approval would be withdrawn.

S.N.SHARMA

RQP/DDN/0135/2001/A

S.N. SHARMA  
RECOGNISED QUALIFIED PERSON (RQP)  
INDIAN BUREAU OF MINES (IBM)  
RQP No. RQP/DDN/135/2001/A  
VALID UPTO : 29th MARCH 2021



# MSK (JV)

S-571 GREATER KAILASH II, NEW DELHI 110048

TEL: 011-29220374/75 FAX: 011-29220377

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## Declaration

The Mining Plan and Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertook that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed in the Mining Plan.

  
Applicant





## CHAPTER -1

### 1.0 Introduction

M/s MSK (JV),S-571,Greater Kailash Part-II,New Delhi was the highest bidder (Rs. 16,07,00,000) for the auction of the AtelaKalan for Road Metal and Masonry stone (Minor Minerals) of Dadri Tehsil .

Letter of Intent has been issued by the Director Mines & Geology Haryana vide letter no DMG/Hy/ML/AtelaKalan/2013/155 dated 03-1-2014 for Mining of " Stone along with Associated minor minerals in AtelaKalan over an area of 54.00 hectares in Tehsil Dadri district Bhiwani,Haryana for a period of 12 years (Annexure - I).

The applicant is involved in the mining business for last many years. The applicant can invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The objective of preparation of this Mining Plan and Progressive Mine Closure Plan is to fulfill the conditions stipulated by the Department of Mines & Geology, Haryana required under Haryana Minor Mineral Concession Rules, 2012. The conditions which are related to the mining plan are reproduced here below.

- The period of lease shall commence w.e.f the date of grant of environmental clearance by competent authority as required under EIA notification dated 14.09.2006 issued by the MoEF, Gol or on expiry of a period of 12 months from the date of acceptance of highest
- The lessee shall also deposit/pay an additional amount equal to 10% of the due dead rent or royalty whichever is more along with installments towards the 'Mines and Minerals Development, Restoration and Rehabilitation Fund';
- The mining lessee shall got prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) from the Recognized Qualified Person as per chapter 10 of



the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012" for Mining Area granted on lease. The Mine Lessee shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director, Mines & Geology, in this behalf. Further, the actual mining will be allowed to be commenced only after getting Environmental Clearance by the Lol holder/mining lessee for the Mining Lease Area from Competent Authority as required under notification dated 14/9/2006 and 04.04.2011 issued by the MoE&F, Gol.

- The Mining Lessee would also be liable to pay following to the land owners;
  - (a) The annual rent in respect of the land area blocked under the concession but not being operated, and
  - (b) The rent plus compensation in respect of the area used for actual mining operations.

The amount of annual rent and the compensation shall be settled mutually between the landowner and the mining lessee. In case of non-settlement of the rent and compensation the same shall be decided by the District Collector concerned in accordance with the provisions of Chapter 9 of the "Haryana Minor Mineral Concession, Stocking, and Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".

- The total mineral excavated and stacked by the concession holder within the area granted on mining lease shall not exceed two times of the average monthly production as per approved Mining Plan at any point of time.
- The Mining Lessee shall not stock any mineral outside the concession area granted on mining lease, without obtaining a valid mineral dealer license as per provisions contained in Chapter 14 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".



- In the interest of associated downstream mineral-based processing industries, the lessee shall be under obligation to make available up to 75% of the produced raw material/stone to the downstream industries i.e stone crushers operating in the area. However, in case lessee is unable to find market for his raw mineral to the extent of 75% of production, he would be required to obtain prior permission of the department to consume raw mineral in excess of 25% of his production but not exceeding 50% of his production for grounds to be recorded in writing;
- The lessee shall not carry out any mining operations in any reserved/protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorized in this behalf, lessee (s) shall not be entitled to claim any relief in payment of dead rent/royalty on this account.
- That no mining operation shall be allowed in the urbanizable zone of area notified by Town and Country Planning Department. Further, in case of the agriculture zone of area notified by Town and Country Planning Department, mining shall be permissible only after obtaining prior permission from the competent authority.
- A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf.
- The lessee shall not undertake any mining operations in the area granted on mining lease without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws.
- No transfer of lease shall be permissible for a period of first five years of grant of lease. However, on submission of an application, in accordance with the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Mineral & Prevention of Illegal Mining Rules, 2012, and after satisfying itself the state



government may allow inducting of other partners/shareholders to the extent of forty nine percent of the total shareholding of the original leaseholder;

The lessee shall be under obligation to carryout mining in accordance with all other provisions applicable as per Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act.1986 and the rules made there under. Further, the provisions of Water (Prevention and Control of Pollution) Act.1974, Air (Prevention and Control of Pollution) Act.1981 and Wild Life (Protection) Act, 1972 shall also be enforced.

Mining of mineral is no doubt essential for industrial growth and for providing better standard of living. But, there are environmental concerns related to mining activities i.e. land degradation, pollution of air, water, soil & noise affecting biological environment and socio-economic environment. It has been experienced that in the past, due to unplanned exploitation and inadequate regard to the environment, mining operations have caused lot of damage to the mother earth.

In order to maintain the balance in the eco-system and sustainability of the mining area and the nearby areas a scientific mining scheme and progressive mine closure plan is required. Therefore, the same is prepared as per the guidelines for the mining plan/mining scheme covering all-important aspects required in respect of minor minerals.



**1.0. General:**

**1.1. Name of the Applicant:** M/s MSK (JV),S-571,Greater Kailash Part-II, New Delhi  
110048

**1.2 Status of the Applicant:-**The applicant is a joint venture of the following companies (Partnership Deed is attached as Aneexure-2)

1. MKE is a mining contracting company having 25 yrs of experience in operating mines
2. Shivalya construction is a construction company having expertise in road and building construction .
3. Khatusham is a crushing company having expertise in producing and marketing building material products.

**1.3. Mineral or Minerals, for which the Applicant has a mining lease:**

Stone along with associated minor minerals

**1.4 Details of the land covered under Mineral Concession Area along with Boundary Pillar Co-ordinates:**

Details of the land covered in the 'M.L. Area' are as under:-

District Bhiwani  
State Haryana  
Taluka Dadri



Village	Khasra no.	Area in Hect.	Ownership
AtelaKalan	103,104 min,105,106,107 min	54hectares	GramPanchayat

### Boundary Pillar Coordinates

Boundary pillar	Co-ordinates	
	Latitude	Longitude
BP-1	N28° 34' 39.02 "	E 76° 05' 38.24"
BP2	N28° 34' 41"	E 76° 05' 52.2"
BP3	N28° 34' 41.2"	E 76° 06' 5.3"
BP-4	N28° 34' 41.9"	E 76° 06' 5.9"
BP-5	N28° 34' 42.11"	E 76° 06' 8.13"
BP-6	N28° 34' 40.19"	E 76° 06' 7.1"
BP-7	N28° 34' 37.08"	E 76° 06' 4.28"
BP-8	N28° 34' 36.81"	E 76° 06' 4.48"
BP-9	N28° 34' 40.19"	E 76° 06' 8.13"
BP-10	N28° 34' 24.53"	E 76° 06' 13.9"
BP-11	N28° 34' 10.94"	E 76° 05' 59.22"
BP-12	N28° 34' 23.37"	E 76° 05' 45.6"

Plan of the area under mineral concession delineated with boundary pillars shown in Plate No. 3 (As Surface Geological Plan) along with its Latitude & Longitudes.

Plate No. 2 indicates Key Plan of the area covering a radius of 5 Kms from Mine lease hold area.

- 1.5 Period for which mining lease is granted: 12 years w.e.f the date of grant of environmental clearance by competent authority or on expiry of a period of 12 months from date of issuance of LOI (Annexure-1)
- 1.6. Name, Address and registration number of the person who Prepared this plan.-

The applicant assigned the work of preparation of mining scheme to Sh. S. N. Sharma (Consent letter enclosed as Annexure -3)

Sh. S.N.Sharma

Registration No. – RQP/DDN/0135/2001/A.

House No. – 282 Sector 11-D Faridabad (Haryana)

Phone no. – +919560848579

Email– sn\_sharma1959@rediffmail.com



## CHAPTER – 2

### 2.0 Location and accessibility

The mines are located in the revenue estates of Villages AtelaKalaninDistt. Bhiwani, Haryana and are about 15 Kms from CharkhiDadri ,District Bhiwani, The leased area lies between the latitudinal paralle falling in the survey of India Topo Sheet No. 53-D/2. The lease area is located on the katcha road and then a metalled road upto village AtelaKalan and is easily approachable from CharkhiDadri, Bhiwani and other important towns.

A General Location and vicinity map are attached as plate no.1

Key plan: key plan on 1: 50,000 scale covering an area in a radius of 5 km showing salient features as per Rule 28(5) (a ) of MCDR, 1988 has been prepared on Topo Sheet no.53 D/2 (plate no. 2)The area is marked on the enclosed key map. The deposit lies between latitude  $28^{\circ}34'14''$  to  $28^{\circ}34'50''$  and Longitude  $76^{\circ}5'35''$  to  $76^{\circ}6'17''$  (Plate no. 2)

**Infrastructure facilities are as detailed below**

Nearest railway station	CharkhiDadri(15 km)
Police station	CharkhiDadri
Post office	All the nearby villages
Medical facilities	CharkhiDadri and Bhiwani
Electricity	Electrical supply is available in all nearby villages.
Education facilities	Most of the nearby villages have secondary schools and for higher education institutes are available at CharkhiDadri, Bhiwani, Rohtak& other nearby towns
Mode of transportation of mineral	Mineral stone will be transported by tippers/ trucks. Loaded trucks will travel on Kuccha road made for plying of trucks up to the crushers in the nearby area. Village Atela is connected with metaledroad is which further joins the Dadri and nearby cities.



## CHAPTER – 3

### PART-A

#### 3.0 GEOLOGY, LITHOLOGY AND MINERAL RESERVES

##### 3.1.1 Physiography, Drainage and Climate

There is no perennial river passing through the district. Physiographical the district consists of flat and level plain interrupted from place to place by clusters of sand dunes, isolated hillocks and rocky ridges. A few isolated rocky ridges elevated sharply from the plain occur in the south central portion of the district.

The lease area is consists of Hilly terrain.

The lease area does not have any water body. There are dry nalas in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rain water from these nalas drains either into local Johars or in agriculture fields.

##### 3.1.2 Hydrogeology

The geological formation met within the district are ferruginous schist associated argillaceous rocks of Aravalli group, Alwar quartzite of Delhi system, Malani suite of volcanic of lower Vindhyanage, Older alluvial deposits of Quarternary age and aeolon sands of recent age the out crops are, however, limited to small parts of the

district, Older alluvium occurs extensively in the area consisting of interbedded, lenticular, interfingering deposits of gravel sand, soil, clay and Kanker mixed in various proportions. The youngest formations are Aeolian deposits, which are unconsolidated surface sands covering large area in the western part of the district, these deposits occur as sand dunes at the surface and consist of sands. Ground water occurs in alluvium and Aeolian sands and under lying jointed and fractured hard rock formations also form the aquifers, in alluvium, sands, silt, kankar and gravel form the water





bearing zones. In-shallow aquifers zones, ground water occurs under water table conditions whereas in the deeper zones, confined/semi-confined conditions exist, hard rocks comprising of Aravalli group of rocks, Malani suite of volcanics and Alwar Quartzites of Delhi system are water bearing but have yet not been explored thoroughly. It is shallow and between 3m to 10 m in the Northern, Northeastern and Eastern (Tosham Bhiwanikhera Dadri -I and Bhiwani blocks) and 10 to 20 m bgl in the Southern and Northwestern parts of the district ( Badra, Dadri -II and Siwani ). Ground water levels are deeper in the Western and some patches in the Central part ranging from 20 to 50 m (Loharu and Siwani blocks). During the pre-monsoon period depth to water in the district varies from 2.24 m bgl (Northern, Northeastern and Eastern part) to 53.50 m bgl (Western). In the post-monsoon period depth to water table ranged between less than 2.63 m bgl to 47.93 m bgl. Seasonal fluctuation shows an overall rise in water level due to the monsoon rains. But for this project area (Atela kalan Mine), our experts surveyed adjoining dug wells, hand pumps and found and measured that water table is 45 meters below the ground level and therefore the mining operations are proposed up to 40 mts below the ground level.

### 3.1.3 Climate & Rainfall:

The climate of Bhiwani district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wettest months. Rest 15% rainfall



is received during non-monsoon period in the wake of western disturbances and thunder storms.

Rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall	420 mm
Normal monsoon Rainfall	355 mm
Temperature –	
Mean Maximum	41°C (May & June)
Normal Rain days	22°C

### 3.2 REGIONAL GEOLOGY OF THE AREA

Regionally the area belongs to the Alwar Series of Delhi Super Group. The regional stratigraphic sequence in Mohindergarh and Bhiwani districts is as follows:

	<i>Ajabgarh series</i>	Biotite-schist, phyllites, quartzites and impure biotitic limestones and calciphyres.
<b>Delhi System</b>	<i>Alwar series</i>	Quartzites, arkose, conglomerates and mica-schists with bedded lavas.
	<i>Rialo series</i>	Rialo limestone and Rialo marble, quartzite

The different formations of the area belong to Alwar Series of Delhi Super Group. The following sequences have been observed in the area.

- Alluvium
- Quartzite (Road metal and masonry stone )

3.3 **LOCAL GEOLOGY:** The areas were surveyed geologically. A Geological Plan (Plate no.3) and Sections (Plate no.4) are prepared on 1:1000 scales.

#### DESCRIPTION OF FORMATION

The different formations of the area belong to Alwar Series of Delhi Super Group. The following sequences have been observed in the area.

- Alluvium



- Quartzite (Road Metal and Masonry Stone )

The description of different formation found in the area have been as under

#### **QUARTZITE (BUILDING STONE)**

This type of formation covers the major part of the hills in the area.

It is reddish, bluish and gray in color, semi friable to hard and fine grained in nature. Quartzite occurs mostly as building stone extending over the entire length and width of the lease area. The strike of the quartzite formation varies from N 20° - 25° E to S 20° - 25° W with dip of 45 to 60° due east.

#### **STRUCTURE**

The general strike of quartzite is N 20°-25° E to S 20°-25° W with dips of 45° to 60° due East.

The strike and dip of the quartzite bands is not uniform since there are structural disturbances.

#### **ORIGIN AND CONTROL OF MINERALISATION**

Quartzite is a metamorphosed product of sand stone, which have undergone low degree metamorphism.

#### **EXPLORATION & METHOD OF RESERVE ESTIMATION**

The entire lease area is prominently marked by outcrops of building stone. Moreover, the area has undergone quartzite (building stone) mining in the past; therefore, no fresh exploration to prove the geological reserves was required as abundant pits of quartzite have prominently exposed the formation.

### **3.4 RESERVES**

Methods of estimation of reserves of quartzite:-

For estimating the reserve of Quartzite (Building stone) the following Parameters are considered are as follows:

1. The reserves are calculated on the basis of established width, thickness and strike length/influence of the mineralized formation in the area where good pits are available such area is put under proved category.



2. The entire reserves of quartzite are put under proved category above valley level i.e. up to 255 MRL. Next 30 meters are considered as probable and further 10 meters as possible.
3. The bulk density of road metal and masonry stone (quartzite) is considered 2.5 which is further multiplied by bulk density to arrive at the tonnage.
4. The Section wise reserves for road metal and masonry stone( quartzite ) are summarized here below: -

Cross section line	Cross sectional area	Influence length(m)	Bulk Density	Proved Reserves MT	Probable Reserves MT	Possible Reserves MT
A-A'	200 18420 6140	104	2.50	52000	47,89,200	15,96,400
B-B'	1200 26520 8840	100	2.50	3,00,000	66,30,000	22,10,000
C-C'	1600 25650 8550	100	2.50	4,00,000	64,12,500	21,37,500
D-D'	3500 24960 8320	100	2.50	8,75,000	62,40,000	20,80,000
E-E'	34920 24420 8140	100	2.50	87,30,000	61,05,000	20,35,000
F-F'	39820 19470 6490	100	2.50	99,55,000	48,67,500	16,22,500
G-G'	29986 13530 4510	100	2.50	74,96,500	33,82,500	11,27,500
H-H'	22448 7620 2540	90	2.50	50,50,800	17,14,500	5,71,500
<b>Category-wise reserves</b>				<b>3,28,59,300</b>	<b>4,01,41,200</b>	<b>1,33,80,400</b>
<b>Total Reserves</b>				<b>8,63,80,900</b>		
<b>Mineable reserves @80%</b>				<b>6,91,04,720</b>		
				<b>Or say 69.105 Million tons</b>		



## CHAPTER 4

### MINING

#### 4.1 Site Appreciation:

Our experts (Geologist, Mining Engineer) visited the mine site and found that the existence of old working in the area reveals that the area was worked for building stone in the past. One old pit namely P-1 with dimensions of 426mx50 m covering an area of about 2.13 ha was worked in the past by earlier contractors. Existing road length is about 640 m .The shape of the pit shows that no systematic mining was done. Now it is proposed to do systematic and scientific mining of road metal and masonry stone/building stone during the lease period.

#### 4.2 Pre-production Activities (Development during the First five years)

As the area has been worked in the past unsystematically. Pre production development work is required to align the mine road and to reach the top of the mine for mining. The construction of garland parapet, wire fencing etc, shall be provided year wise and will be shifted along with the development of pit. A stack yard (50mx50m is proposed for mineral. Soil stack yard (30mx30m) is proposed to stack the soil generated during the mining.

For making stacking yard, ground is almost level. A boundary wall around soil stack yard shall be made. The position of fencing, drain, toe wall, dump yard size and soil stack yard size, plantation etc at the end of 5th year is shown as detailed below and shown in the year wise plans plate no.5-9 and sections plate no.10.



Year	Toe wall around dumps	Drain around dumps	Drain at the end of 5 <sup>th</sup> year	Fencing at the end of 5 <sup>th</sup> year
At the end of 5th year	240m	240 m	660m	1220 m

Soil stack yard =30x30m.

Dump yard size =50mx50 m

Working area occupied at the end of 5th year will be= 6.50 Hectares

A part from the above site service shall be developed which include construction of manager's office, Crèche, Canteen etc.

Approach road from mine to mineral stack yard, soil stack yard and dump yard and site services shall also be made.

The existence of old working in the area reveals that the area was worked for building stone in the past. Two pit namely P-1 with dimensions of 360mx125m covering an area of about 4.50 ha and P-1 with dimensions 680mx47m covering 3.20 ha area are there. Existing road length is about 2800m. The shape of the pit shows that no systematic mining was done. Now it is proposed to do systematic and scientific mining of road metal and masonry stone/building stone during the lease period.

As a pre-production activity, roads from crusher to top most entry to the initial mining area, from mining faces to the proposed dump area, from ground level to the mining area, to the mines office complex, and to the garage / workshop will be developed. Access roads / haul roads from topmost bench to benches at lower



levels shall be developed gradually. As mining operations advance to lower levels, larger face lengths and width shall be available. Face management, which is a continuous process, shall be taken into account to secure shortest (average) lead distance up to crusher / dump yard as also to prevent clustering of dumpers. Following activities shall be undertaken during quarry development phase:

- Removal of vegetation and top soil to expose quartzite beds
- To make the access road to the mine working area.
- Provision and construction of access roads from ground level to mines office complex, workshop, entrance to mine faces
- Development of haulage road from proposed crusher location to the floor of initial mining areas at a slope of 1 in 20 is proposed (not exceeding 1 in 16 except for ramps)
- Making of parapet wall/retaining walls along gradient of haul road.
- Construction of mine office, first aid station, crèche, canteen, workshop and other ancillary infrastructural facilities shall also be undertaken during first and second year of developmental activities.

#### 4.3 MINING OPERATIONS:

The mining operations will comprise of following activities for excavation of mineral.

- a) Drilling of "Down-the-Hole" holes as per specified pattern.
- b) Blasting of holes
  - I) Primary Blasting
  - II) Secondary Blasting
- c) Loading of blasted material by deploying hydraulic excavators
- d) Transportation of material to Crusher

Thus, these mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling by crawler mounted DTH drills and blasting. To start with



benches shall be kept narrow and then gradually widened. To the extent possible, benches shall be kept along dip and advanced along the strike to give a fairly well blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads / ramps.

**4.4 Mining Parameters:**

4.4.0 Bench height & Bench Width: The Regulation 117 of MMR, 2012 stipulates that In all mechanized opencast working, the following precautions shall be observed, namely:-

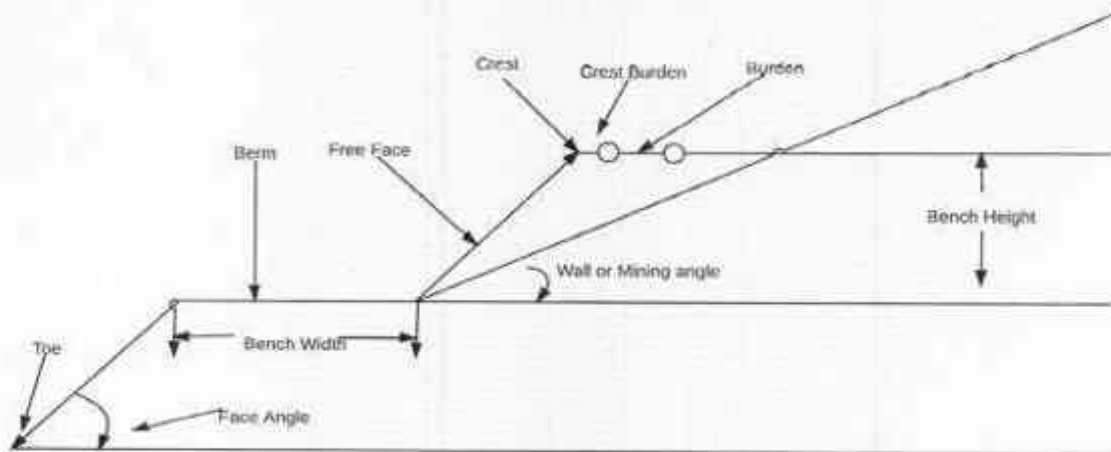
- (a) Before starting a mechanized opencast working, design of the pit, including method of working and ultimate pit slope shall be planned and designed.
- (b) The height of the benches in overburden consisting of alluvium or other soft soil shall not exceed 5 metres and the width thereof shall not be less than three times the height of the bench and the height of the benches in overburden of other rock formation shall not be more than the designed reach of the excavation machine in use for digging, excavation or removal;
- (c) The width of any bench shall not be less than –
  - I. the width of the widest machine plying on the bench plus two metres, or
  - II. if dumpers ply on the bench, three times the width of the dumper, or
  - III. the height of the bench, whichever is more;

Therefore considering the requirement of Regulation and keeping in view the dimensions of heavy earth moving equipment following mining parameters are considered: Since the host rock quartzite is hard and compact, the same parameters are considered for making benches. In view of mechanized method of mining to be adopted; the bench height is proposed 9.0mtrs and bench width 10 mtrs. Formation of benches in this manner will result in an overall safe slope of 50°.

Bench Height	9 m
Bench Width	11 m at least
Bench Slope	15° to the vertical
Sub-grade Drilling	01 m (10% of height)
Depth of DTH Hole	10 m
Diameter of hole	100-110 mm







SCHEMATIC DIAGRAM SHOWING MINE TERMINOLOGY

#### 4.4.1 Face length:-

Since one pit is planned to develop in the area to obtain targeted production, the optimum face length available along the strike length is sufficient to cater to the optimum production required. The face length will attain the maximum face length at the end of 1 st year.

#### 4.4.2 Bench alignment: -

The benches are gradually aligned to give a regular shape. In general the benches will advance in all directions parallel to each other. Since geological formation in the area is of simple nature, there will not be difficulty in maintaining the proposed bench alignment.

#### 4.4.3 Depth of pit:

The reserves up to 30m below the valley level are proposed to be worked are sufficient to cater the needs of the applicant. The surface level reserves will not be depleted during the next 10 years. The workings will start at 391 MRL and will reach up to 229 MRL at the end of 5th year as detailed in the year wise plans plate no.5-9 and sections plate no.10.



#### 4.4.4 Pit Limit and Final Slope Angle

Quartzite rock is hard and compact. Once the pit reaches the ultimate limit, it is necessary that it does not start collapsing due to weathering and other effects. This can be achieved by planning ultimate pit slope at a maximum of 50 degree to avoid collapse of the pit sides. There is no overburden except a thin soil cover. Entire mineral produced will be useful. The final extent of mining operations is shown on **Conceptual Plan**. The final slope angle shall be 50 degree.

#### 4.4.5 Level of Production (Year wise Production for First 5 Years)

It is proposed to work the mine from top down ward for which a mine road is proposed between 259 MRL to 391 MRL. About 2176 meter length will be developed during first year. During the making of road, mineral will be mined (2176x10x5x2.5=2.72lakh ton.) The position of benches and the production from individual benches year wise is as follows

Year	Bench level At the end of each year	Production in Lakh Tones	Total Production in lakh Tones
1st	391	1.14	42.78
	382	1.78	
	373	3.97	
	364	7.51	
	355	11.32	
	346	16.56	
2nd	337	17.33	60.00
	328	18.27	
	319	16.23	
	310	8.17	
3rd	310	8.16	60.00
	301	15.76	
	292	16.07	
	283	14.52	
	274	5.49	
4th	274	8.44	60.00
	265	13.25	
	256	13.28	
	247	25.03	
5th	247	16.43	60.00
	238	36.14	
	229	7.43	



During the plan period the benches will be advanced as shown in Plate No. 5-9 and sections at Plate no.10 to achieve the targeted production.

#### **4.4.6 Proposed Level of production when the mine fully developed**

It is aimed to prepare this Mining Plan for 60, 00,000 MT mineral production. The required rate of production shall be achieved by the end of 2st year. The rate of production shall be maintained up to lease period.

#### **4.4.7 Mine able Reserves and Anticipated Life of the mines**

As discussed in the chapter of geology, the in situ geological reserves are calculated 8,63,80,900 MT .As per the proposed method of mining and occurrence of mineral 80% geological reserves (6,91,04,720 tones) are mineable The life of the mine is therefore assessed as 12.0 year at the proposed rate of 60,00,000 tons of mineral / year.

#### **4.4.8 Proposed Method of Mining**

The present mining operations are designed to be carried out by open cast mining means. The entire mining operations proposed are mechanized. Apart of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height shall be 9mtrs. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintained the 50<sup>o</sup> the mineral bearing rocks being hard and compact.

#### **4.4.9 Extent/Level of Mechanization with Types of Machineries Used.**

In view of the proposed planned production of 60,00,000 MT per annum the life of the mine is calculated 12.00 year , however as this lease is granted for 12 years only, accordingly conceptual mine plan is considered. However the life



may vary depending on the demand and the quality and reserves of the deposit. The designed rated capacity for mineral production during the next five years, 2014-15 to 2019-20 when mines are operating at full rated capacity is as given below :-

Sr.no	Parameters	Details
1	Production per Annum	60,00,000 MT
2	No. of operating days per annum for mine	300
3	No. of operating shifts per day	02
4	No of schedule hours per shift	8.00
5	Actual Utilization hours per shift	5 to 6.5

The breakup of land use at present, at the end of 5<sup>th</sup> year and at the end of the Life of Mine is detailed as under:-

**Land use pattern (Atela Kalan Stone Mine)**

S. No.	Land Use Category	Present	At the end of 5 <sup>th</sup> Year	At the end of Life of Mine
1.	Waste Dump (Soil)	-	2.20	-
2.	Reclamation (Water body)	7.70	26.30	27.56
	<b>Total Excavated Area</b>	-	<b>28.50</b>	<b>27.56</b>
3.	Road	1.68	2.08	2.08
4.	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5.	Town Ship Area	-	-	-
6.	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7.	Mineral / Sub-grade mineral Storage	-	-	-
8.	Undisturbed area	44.46	19.84	5.27
	<b>Total</b>	<b>54.00</b>	<b>54.00</b>	<b>54.00</b>



#### 4.4.10 OPERATING DAYS PER ANNUM

The mine shall be operated on 2 shift basis (each of 8 hours duration) per day with operating days per annum be 300 days. The actual effective utilization of HEMM per shift is estimated as 75% i.e. 6.0 hours per shift. This can however be optimized with experience.

#### 4.5 EXTENT OF MECHANIZATION

To arrive at optimum number of heavy earth moving equipment, following assumptions are considered:-

- No. of shifts per day : 2
- Specific Gravity of quartzite : 2.5
- Availability of Equipment : 75%
- Fill factor of excavator bucket : 0.80
- Hours of working per shift : 6.0
- Average Haul distance : 08 km (one side)
- Speed of dumper : 30 Km/hour
- Penetration rate of drill machine : 10 mtrs/hour
- Excavator Capacity chosen : 3.9 cubic m
- Dumpers capacity : 50 T
- Drill Capacity : 100-110 mm
- Powder factor : 8T/Kg of Explosive

##### 4.5.1 Equipment Capacities Required

The designed rated capacity for mineral production during the next five years, 2014-15 to 2019-20 when mines are operating at full rated capacity is as given below:

- Production for first 5 years : 28278000 T
- Average production per year : 56.55,000 T
- Production per day : ~~56,55,000/300~~ 18852 T



- Production per shift : 18852/2= 9426 T
- Production per hour : 9426/6=1571 T
- No. of operating days per annum for the mine : 300
- No. of operating shifts per day : 2
- No. of scheduled hours per shift : 8
- Actual utilization hours per shift : 6

#### 4.5.2 Drilling Machines

The number of drill machines as envisaged to be provided is given in the Table below. The calculations regarding adequacy are given below:

**Table Operational Parameters**

Item	Limestone and Waste bench
Bench height (m)	09
Hole inclination	15° to vertical
Hole depth (m) including sub-grade drilling	10
Burden (m)	3.0
Spacing (m)	4.0
Volume (m <sup>3</sup> )	3.0x4.0x 10.0 = 120
Tonnage yield (t)	120x2.5=300
Mineral blocked per meter of hole length	300/10=30 t (Tonnage Yield/depth of hole
Tonnage to be drilled per hour	1531 t (Production per Hour)
Meters of Drilling required	1531t/30 t = 51.03 m
No of drill to be provided @drilling rate of 10m/hr	51.03/10=5.1
20% allowance for maintenance & breakdown	1.02
Total Drill m/c required	5.1+1.02=6.12 say 6 nos



**Table Drilling Equipment and Compressors**

Sl. No.	Type	Nos.	Dia of Holes (mm)	Size / Capacity	Motive Power	H.P.
1	Crawler Mounted DTH drill machine with Compressor	06	100-110	Adequate to drill up to 30 m.	Comp. Air365 cfm	N.A.

**4.5.3 Loading/ Excavating Equipment**

The number of loading / excavating equipment as envisaged to be provided is given in **table below**. The calculations regarding adequacy are given below:

**Table-Number of Loading / Excavating Equipment**

Parameters	
Hydraulic Excavator	3.9 m <sup>3</sup>
Fill factor	0.8
Swell Factor	1.5
Loading Cycle time for one bucket (Swing, hoist, crowd)	48 sec.
Average Cycle time @90% efficiency	54 sec
Dumper Capacity	43.5 cubic M
Shovel Dipper Capacity	3.9 x 0.8=3.12 cubic m
Dumper effective Capacity	43.5x 0.8=34.8 cubic m
Dumper capacity in t (34.8 cub m x 0.8 x 0.85) x 2.5	59.16 t
Availability of excavator	80 %
Utilization of Excavator	85%
Possible working hour per shift	6.00
Effective Dumper capacity in T ( 34.8cub m x 0.8 x 0.85 x 2.5)	59.16 t

Shovel productivity in tons per hour are determined by dipper size, swing time, dumper capacity and dumper spotting conditions and is calculated as follows:

$$\text{Tonnes /hr.} = \frac{60 \text{ min}}{((\text{Dumper size m}^3/\text{dipper size m}^3) \times \text{Swing time}) + \text{Dumper spotting time}} \times \text{Dumper size (t)}$$

$$\text{Tonnes /hr.} = \frac{3600}{((34.8/3.12) \times 54 \text{ sec}) + 90} \times 59.14 = 307 \text{ TPH}$$

Hence Shovel Productivity in Ton per hour comes to be = 307 TPH



Annual operating Hours :

No. of days x No. of shifts x % Availability x % Utilization x Hr/shift = Op. Hrs.

Annual operating Hours =  $300 \times 2 \times 0.80 \times 0.85 \times 6.0 = 2448$  Hrs.

Shovel Fleet requirement =  $\frac{\text{Annual Production ( tons)}}{\text{Annual operating Hrs. x Tonnes per hour}}$

Shovel Fleet requirement =  $\frac{56,55,000 \text{ T}}{2448 \times 307} = 7.52$  say 8

Thus Eight Nos of shovels will be required.

**Table-Loading/ Excavating Equipment**

S. No.	Type	Nos.	Bucket capacity in m <sup>3</sup>	Motive Power	H.P.
1	Hydraulic Excavators	08	3.9 m <sup>3</sup>	Diesel	380-400

#### 4.5.4 HAULAGE AND TRANSPORTATION EQUIPMENT

It is proposed to transport mineral from the faces to the crusher by 43.5 Cubic m off highway rear dumpers. The number of equipment proposed to be provided is given in **Table** below. The calculations regarding adequacy are given is given below:





**Table Operational Parameters**

Parameters		
Dumper capacity		43.5 cub m
Load per pass of loading equipment for blasted Mineral		3.9 cub m x 0.8 (fill factor)= 3.12 x 2.5= 7.8 T
Speed of loaded dumper on hilly terrain		30kmph
Average cycle time of excavator		48 seconds
No. of passes required to load the dumper		59.16/7.8 = 7.5 say 8
Time for loading a dumper		54 * 8 = 432 sec. ( 7.2 minutes )
	Mineral	
Lead in Kms from face to crusher		05
Waiting & Spotting time at face ( min)		2
Waiting, Spotting & unloading at Crusher		2
Time taken for loaded trip in minutes		12
Time taken for empty trip in minutes		10
Time taken per round trip in minutes (min)		26
Load that can be transported per hour (2 trips) x 59.16 T		118.32 say 119
Load to be transported per hour		1571
Dumpers required		1571/119 = 13.20
20% allowance for maintenance/repair/breakdown		2.64
No of dumpers required		15.84
Total no of dumpers required in limestone and overburden		Say 16

**Table-Haulage and Transportation Equipment**

S. No.	Type	Nos.	Size / Capacity	Motive Power	H.P.
1	Rear Dumper (Size 43.5 Cubic meter)	16	43.5 Cu m	Diesel	380-400

Summary of the Requirement of Heavy Earth Moving Machineries as calculated above for Handling of about 60,00,000 T of Mineral Per Annum



S.No.	Equipment	Size	Effective Tonnage	Nos
1	Hydraulic Excavator	3.9cu.m	$3.8 \times 0.8 (\text{fill factor}) \times 2.5 (\text{Tonnage factor}) = 7.6 \text{ T/Bucket}$	8
2	Rear Dumper	43.5cu.m	$22.5 \times 0.8 (\text{fill factor}) \times 2.5 (\text{Tonnage Factor}) \times 0.8 (\% \text{availability}) \times 0.85 (\% \text{Utilization}) = 30.06 \text{ T}$	16
3	Drill Machine	100-110 mm dia	@ 10 meters per hour	6
4	Compressor	365		6

#### 4.5.5 MISCELLANEOUS / ANCILLARY EQUIPMENT

In addition to above, miscellaneous / ancillary equipment shall also be provided for dozing, (construction / maintenance of haul road, clearing of benches / haul roads, making of heaps of blasted limestone for efficient loading etc.), suppression of dust along haul roads and at faces, transport of men, explosives and other materials, breaking of blasted boulders to size acceptable at crusher etc. as given in Table below:

Table-Miscellaneous / Ancillary Equipment

S. No.	Type	Nos.	Size/ Capacity	Make	Motive Power	H.P.
1	Bull Dozers	1		To be decided	Diesel	450
2	Motor Grader	1		To be decided	Diesel	165
3	Hydraulic Rock Breaker	2	Mounted on 18-21 ton Class-ass hydraulic excavator	To be decided	Diesel	110
4	Explosives Van	1	05 Ton	Tata / Leyland Chassis	Diesel	110
5	Tractor with Trolley (Pickup)	1	5 ton capacity	Escort / HMT	Diesel	50
6	Jeeps / Van	2	Double drive axle	To be decided	Diesel	40
7	Water Sprinkler	1	10 KL	Tata / Leyland Chassis	Diesel	110
8	Diesel Tanker with metered pumping arrangements	1	5-10 KL	Tata / Leyland Chassis	Diesel	110
9	Mobile Maintenance Van	1		Mounted on Tata / Leyland chassis	Diesel	110
10	Ambulance	1			Diesel	50



## CHAPTER 5 BLASTING

### 5.1.1 BLASTING PARAMETERS

The quartzite being medium hard category mineral requires drilling and blasting for excavation. To maintain a bench height of 09 meters, drilling by 100-110 mm dia DTH drill machine, is recommended as a guide line to start with. powder factor (PF) on an average of 8 ton per kg of explosive in the initial stages. However in future effort will be made to improve upon it. Blasting frequency is recommended as twice in every six days (i.e. twice a week). Benches shall be kept sloped at an angle of  $15^{\circ}$  from the vertical. (i.e.  $75^{\circ}$  from the horizontal) Same angle of slope shall be maintained for drill blast holes also. With 09 m. high benches, sloped at an angle of  $15^{\circ}$  to vertical, the bench slope height shall be 10.3 m. and with sub-grade drilling of 10% of the depth of shot holes to be drilled shall be 10 m.

Types of explosives to be used will be ANFO, slurry, emulsion etc. will be used for blasting. Since ANFO is cheaper and economical, it will be used as much as possible except in rainy season. Delay detonators or Nonel detonating fuse will be used since multi row system of firing will be carried out so as to reduce the ground vibration, noise, fly rock etc. due to blasting. Sequential blasting techniques using sequential blasting machine shall be used to reduce explosive charge per delay to a minimum to reduce ground vibration.



Blasting parameters for quartzite having 09 m average height are given in Table

Item	Values
Bench height (m)	09
Hole depth (m) (including sub-grade drilling)	10
Burden (m)	4.0
Spacing (m)	5.0
Volume (m <sup>3</sup> )	4x5x9=
Tonnage yield (t)	180x2.5=450 T
Powder Factor (assumed)	8t/kg of explosive
Charge per hole (kg)	450 T/8 = 56.25 Kg
Total quantity of rock to be Broken per day (ton)	60,00,000 t/ 300 days = 20,000 TPD
Explosive required for blasting per day	20,000/8 =2500 kg
Blasting Frequency ( Every day )	1
Explosive required per blast per day	2500 kg
No. of holes per day	20,000 t (Production/day)/450 t (Tonnage per hole)=44.44 say 45 Holes
No of holes per blast	45

It is recommended to carryout detailed ground vibration studies to study the effect of deep hole blasting operation, during the first year of mining operation, to suggest the measures to mitigate the adverse effect, if any, and to carry out safe and smooth blasting operation.

The explosive charge per hole shall be 25% (20% to 30%) of the charge being booster charge and the balance 75% (80% to 70%) consisting of column charge (ANFO is proposed) .

The pattern of initiation adopted affects the standard of fragmentation, muck profile after blast, ground vibrations caused, noise generated, fly rock, air blast etc. At this mine, square/ rectangular / staggered grid, multi row pattern, or extended V pattern



shall be adopted to start with and later on based on experience gained the pattern to be adopted in future shall be standardized.

Long / short (ms) delays shall be used. This will help in reduction of ground vibrations, back break, fly-rock, air blast etc.

The charge per delay shall be optimized , based on experience gained and after conducting scientific studies for determining peak particle velocity and other related parameters to keep ground vibrations, air blast, fly-rock etc. within optimum limits.

Each round shall yield about 9990 ton of mineral. 2 such round of holes shall be fired per week, subject to suitable length of faces being made available. It will give about 20,000 tonne of blasted material. This is considered to be adequate to feed the crusher for 6 working days of the mine (7 working days i.e. one week of the plant) for five years.

Considering the nature of strata / deposit and height of the bench, no decking shall be resorted to. However, in future, decking may be adopted if considered necessary.

### 5.1.2 Type of Explosives to be used

Being cheapest and hence cost effective and economical, besides being safe to handle and store, and non-cap sensitive, ANFO is most popular. For this purpose, free flowing granulated (prilled) ammonium nitrate is mixed intimately with about 6% by weight of Diesel Oil No.2 (Flash point not less than 38<sup>o</sup> C.) Keeping in view the quantity of AN to be mixed with FO mechanical mixing and loading arrangements at site shall be used. Such arrangements shall in addition give a more homogeneous mixture of AN with FO.

Nitroglycerine (NG) based explosives, slurries / emulsion based) to the tune of about 25% shall be used as booster charge in the holes. The top of the hole shall be charged with about 75% of column charge namely ANFO. ANFO however is hygroscopic and cannot be used in watery holes. In such cases, the shot holes should be dewatered or alternatively ANFO will be used duly packed in plastic tube bags. Such ANFO filled plastic



tube bags can be lowered in the holes in conjunction with additional weight such as sand etc. (due to low density of ANFO as compared to water, it may otherwise result in the bags floating in the holes).

#### **5.1.3 Powder Factor in Mineral (Quartzite)**

To start with, it is proposed to use 1 kg of explosives for breaking / blasting 8 ton of rock. This charge ratio is referred to as "Powder Factor or PF" Based on experience gained on such sort of deposits, PF may be optimized at a later date.

#### **5.1.4 Secondary Blasting**

Quartzite deposit being massive, about 6% - 10% of the boulders generated on blasting may be too large to be fed directly to the crusher and need secondary breaking / blasting. Secondary drilling and blasting may be necessary to reduce these oversize boulders to acceptable range. For secondary blasting, (size reduction) pop shooting (in 25-32 mm dia holes to be drilled by hand held jack hammer drills up to a depth of about 1/3 to 2/3 of the boulder depth) is normally carried out.

Or alternatively, considering the large production targets , secondary breaking of large boulders may also be carried out by use of hydraulic rock breakers mounted on 18-20 ton class hydraulic (back-hoe configuration) excavators. This will obviate the necessity of withdrawal of men and machinery from the faces at the time of secondary blasting and thereby increase the utilization % of HEMM.

#### **5.1.5 Storage of Explosives (Capacity and Type of Magazine)**

Licenses for storage transport and use of explosives will be obtained from concerned statutory authorities. No magazine is constructed in the leasehold area till date. No storage, transport and use of explosives is done in the mines till date. Blasting will be started after obtaining all necessary clearances from the concerned statutory authorities.



- Explosive Magazine means any building licensed under Indian Explosive Act,1884

Proposed Capacity of Magazine:-

- Mineral to be mined during 1 year = 60,00,000 T
- Production of mineral per day (300 days/year)= 60,00,000/300=20,000 T
- Explosive requirement per day (PF- 8 T/Kg of explosive used :20,000/8=2500 Kg
- Explosive consumption per year = 300 days x 2500 kg= 7,50,000 Kg= 750 T
- Explosive consumption per month= 7,50,000 kg/12=93,750 kg or say 94 T
- Use of ANFO will be 80% of total explosive used per month = 80% of 94 T= 75.2 T
- Use of High Explosive will be 20% of total explosive used per month=20% of 94 T  
T=18.8 T

Magazine Capacity of 2 months consumption of explosive (10 T-Explosive Magazine) will be appropriate for undertaking the blasting five times per week with the given production capacity of the mineral.

Ammonium Nitrate storage shed is also to be maintained of at least 15 T capacity.

2-months consumption of ANFO= 75.2 x 2= 150.40 say 151 T

2-months consumption of High Explosive=18.8x2= 37.60 say 38T

Electric Detonators: 1000Nos

Detonating Chord -10,000 mtrs

ANFO shall be stored separately under the roof for 22 T capacities.

With a License for Purchase and use, explosive magazine of permanent structure or portable magazine can be installed close by to project and continue to purchase as per requirement from authorized dealer. At no time explosive stored should not exceed licensed quantity.



Or alternatively Tie up with a explosive supplier maintaining a magazine with a License to Purchase, Sell and Use. This agency can bring explosive (sell) as per requirement and use in the project premises. This system is recommended, as per contents of Indian Explosive Act, 1884 as this system will avoid construction of explosive magazine in mine premises ensuring safety.

#### **5.1.6 : Precautions to be observed during drilling and blasting :**

Necessary precautions as enumerated under clause 106 (2b) of MMR-1961 shall be observed during blasting.

- Preparation of charge, charging and stemming of holes will be done by a qualified blaster.
- Before a shot is charged, stemmed or fired, sufficient warning by signal is given over the entire area falling within the danger zone and ensure that all persons within such area have taken proper shelter.
- The controlled blasting shall be done by using delay detonators to prevent flying fragments which may cause injury to local inhabitants within danger zone.
- Proper inspection after shot firing will be done the blaster.
- The numbers of shots which exploded shall be counted by the blaster to assess misfire.





## CHAPTER 6

### MINE DRAINAGE

#### 6.1 GENERAL:

Open cast mining projects requires effective arrangements for drainage and provision of adequate dewatering capacity in the pits under mining. In the area under mining water can reach the workings from surface drainage, rainwater and due to seepage through joints and fissures. Therefore, the problem can be solved by preventing drainage water from entering the pits on one hand and pumping out the percolated and direct rain water from the pits on the other hand .The general water table around the lease area at 45 meters below ground level.

#### 6.2 Drainage Around and Within Mine:

The hill is mainly sloping both east and west direction. The mining area will become a depression during the next 12 years, which warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.

- 1) Drainage as shown in the mine plan (Plate no 5-9) shall be made all round the pit to prevent the entry of surface/ rain water inside the pits.
- 2) All the benches will be provided with mild inward slope to keep the benches in drained condition. Provision of sumps is provided as shown in Plate No 5-9. The lowest bench shall be slightly sloped towards the sump so that the entire drain water goes to the sump.
- 3) The working faces will be advanced with a mild upward gradient to facilitate the drainage. The water shall be gradually drained from the upper most bench to the lowest bench and then ultimately to the sump.



- 4) Similarly in the ultimate pit position, large sump will be provided at the pit bottom to accumulate drained water as well as direct rain water.

### 6.3 DEWATERING:

Since the depth of mining proposed is well above the valley level and water table, there will be no chance of encountering the ground water table during the mining operations. Hence normal-pumping operations will be required during the monsoon season only. The water accumulates within the pits will be due to direct rainfall over the pit and seepage from adjoining areas, if any.

- 6.4. The average rainfall of the district during all these years is 420 mm only.

6.4.1 An examination of the above reveals that the rainy season extends from June to September. Although in the above period under consideration there has been rainfall in other months also, but it can be considered as stray occurrence and will not affect the proposed pumping scheme.

6.4.2 The water to be pumped out from the open pits will be contributed both by direct precipitation over the open pits and seepage. The water due to direct precipitation will depend upon the rainfall and the area of the pit.

6.4.3 Based on the rainfall records, the sumps of the sizes as shown plates No. 5-9 shall be provided at the bottom most bench. During the monsoon period a continuous process of dewatering the sumps shall be there to facilitate the mining at the lower benches.

6.4.5 Based on the Rainfall data it is proposed to have a diesel engine operated water pump of 7.5H.P which may dewater  $20\text{m}^3/\text{hour}$  from the pit. The water will be sent to the drain of 0.5mtr depth as shown in the year wise plans Plate No .5-9. This water will finally go into the natural nalla.



## CHAPTER 7

### STACKING OF MINEAL REJECTS AND DISPOSAL OF WASTE

#### 7.1 Disposal of Waste

Soil: There is a thin soil cover 10 – 20 cms at places. In little amount of soil is also generated from joints and cracks.

Soil and powder of quartzite will be stacked separately

Rejects: - Entire mineral produced is usable.

#### 7.2 Maximum Height and Slope of Dumps

The area ear - marked for the stacking the soil mixed finer material of stone is 8000 M2 Plate no 5-9 which can accommodate at least 12,000 MT of material. In the present case soil generated contains fine powder of quartzite; the same shall be sorted out and stacked in separate dump yards. Yearly generation of soil/ fines which only 10,000 tones shall be used for plantation and as a upper layer on the dumps. The dump may attain a maximum height of 6 mtr. With gentle slopes of 30°. Tow walls and drains around dumps are proposed to safeguard the dumps

#### 7.3 Dump Yard for mineral

It is proposed to have a dump yard for mineral (size 140m x 100m)

As it is not always possible to directly send the mineral to the crushers/ consumers. It is proposed to stack the mineral in the event of less demand or any other reasons to store the mineral in the dump yard. The height of the dump yard may attain a maximum of 8 m with moderate slope of 39 degrees. This can accommodate about 2,80,000 MT mineral.

The location of the soil and dump yard is between BP-2 and BP-5 and the same is shown in Plate no.5-9.



The annual quantum for construction of retaining walls/ dump yards for soil and mineral will be done during plan period. The length of the soil stack yard and dumping yard walls will be 360m and 480mtr. all along with height of one meter. Rest of the height will be made in the coming years as per the requirements of dumps. The thickness of the wall will be half meter.

As already described the optimum height of dumps shall be kept 8 mtr. With gentle slope of  $30^{\circ}$  for soil stack and with moderate slope of  $39^{\circ}$  for rejects/ inter burden stacks.



## CHAPTER – 8

### USE OF MINERAL

#### Road metal and Masonry Stone

The entire mineral produced will be used in the building industry as road metal, crushed metal and dust etc after crushing by the crushers.. The mineral will be sold to buyers in and around Haryana, Delhi and other states of north India.



## CHAPTER – 9

### MINERAL BENEFICIATION

In view of the availability of direct market for building stone R.O.M., presently there is no proposal of beneficiation. R.O.M. Mineral will be sold to various crushers located in the area. Part of the building stone product will be sold in the form of lumps to the crusher owners.

However, a part of ROM is proposed to be crushed at site through a crushing & screening plant proposed to be installed at project site as per indicative flow sheet shown at fig. here below. The crusher is proposed to be operated through Diesel Generating Set till the electrical connection is made available at project site. Details about proposed crusher setup is as follows –

Hopper	Steel Hopper with RCC Support of 50 M3 Live Capacity
Feeder	Vibrating Grizzly Feeder with 40 KW Motor
Primary Crusher	Jaw Crusher with 110 KW Motor
Secondary Crusher	Impact Crusher with 200 KW Motor
Screens	Vibrating 3 Deck Screens (Three Nos with 40 KW Motor each)
Conveyor	800 mm & 1000 mm Conveyor Belts

Hopper, Primary Crusher & Secondary crusher is proposed to be installed with full covered shades. All screens & conveyors will have metallic cover to avoid any dust emission. Discharge chutes are proposed with rubber curtain for controlled material discharge. High pressure water spray through high pressure pump and compressed air is



proposed along primary hopper, discharge conveyors and primary/secondary crusher for effective control of dust emission.

Total water requirement for envisaged wet dust control system is assessed to be 10,000 Ltrs per day and as such there is no discharge of waste water.

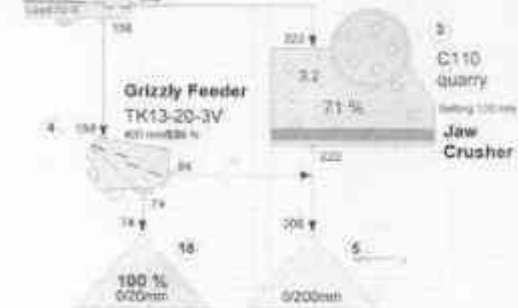
For the proposed mineral processing (crushing) there is no chemical use involved. Furthermore, all the material crushed will be sold to end users and as such there is no waste product/ tailing waste.

Due permission, Consent to establish and Consent to operate shall be taken for installation of crusher from the department of pollution, Govt. of Haryana.

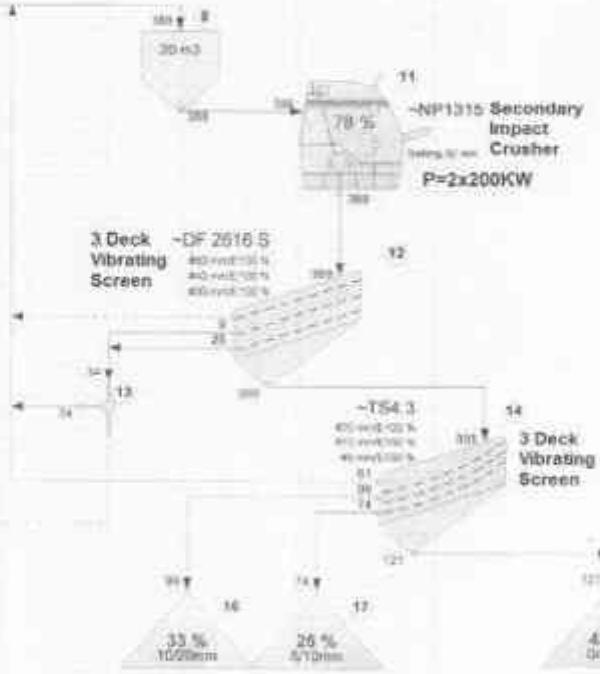


600mm medium  
Limestone  
SD 2.6 tnc3  
Cr 40 %  
Abr 434 grt

VF551-2V (Vibrating Feeder)



**PRODUCTION 0/20 mm PRODUCTS**





## CHAPTER 10

### SURFACE TRANSPORT

The transportation of mineral from pit head / stock yard to the consumer end crushers / traders will be carried out by the trucks of purchaser of generally 25 MT Capacity. There is all weather metaled road and then a katcha road right up to mines to dispatch the material from mines to the market. It will be purchased by the parties at mine site and transported by them through their own arrangement of trucks. The practice is quite sound in the area and ensure continuous lifting of the material. Customers/purchasers come with transport arrangement of their own. However necessary arrangement of trucks can be done from the nearby truck operators union available at CharkhiDadri. Here, it is pertinent to mention that there is existence of Kachacha road from mine to state high way via boundary pillar BP-1 which does not cross through any village and any sort of hindrance from vehicle movement is not anticipated and hence no threat to near bye dwellers.



## CHAPTER -11

### SITE SERVICES

#### 11.0 Site Services:-

##### 11.1 Manager's Office:-

As detailed in the preceding chapter the mines are designed to produce some 60,00,000 ton of building stone per annum. The activities shall be supervised by one competent person, one mining mate cum blaster to supervise the drilling and blasting operation. Since this is very small mines. The office of Manager 5 m x 3 m shall be provided for mine supervision staff.

##### 11.2 Canteen -cum-Rest shelter:-

In order to provide the rest shelter for the personnel working in the mine and also to provide tea/refreshment etc.as per the Mines Act,1952. The arrangement shall be made to install a rest shelter-cum-canteen as shown in plate no.4 and shall be utilized by the workers. The rest shelter will be for having rest during the lunch hours by the operators/ labor. The size of rest shelter shall be about 15 x 3 meter to accommodate the working labours.

##### 11.3 Store:-

Since the mining operation will involve heavy earth moving machinery, a small storeroom will be provided for day to day operations. No provisions for a separate workshop is being made as the heavy repairs will be carried out elsewhere

##### 11.4 First Aid Room:-

To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per



requirement. As the mining engineer / Manager and mining mates are qualified first aiders they can provide first aid to the labor on the spot. More ever the Govt. Hospitals is there at the CharkhiDadri which is just 15 km. From the mine and necessary medical aid can be provided from there.

**11.5 Crèche:-**

At present provision of crèche is not provided, however in future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.

**11.6 V.T. Center:-**

Necessary arrangement shall be made for conducting refresher course as laid down in Mines vocational training rules.

**11.7 Magazine:-**

A magazine of the required size will be provided to fulfill the requirement of blasting of mineral as detailed in the chapter of Blasting. The Magazine shall be erected as shown in the enclosed plate no 5-9 . The design of the magazine shall be as per approval of the chief controller of Explosives, Govt. Of India.The magazine shall be properly fenced and provided with as security guard round the clock.

**11.8 Electricity Supply:-**

Presently there is no arrangement for supply, at the mine but it is proposed to take an extension of the electricity line from the nearby point which is jus0.5 Km from mines site.

**11.9 Water Supply:-**

The water supply for drinking purpose proposed will be made available by hired tractor tanker. The water will be taken from the village Public water supply



which is just 0.5 km .Away from the mine site and is controlled by the public health department of the state Govt . The water form supply tube well is used for the entire village Atelakalan. Therefore the same arrangement shall continue for the mines as well. The water shall be transported by the tractor and stored in a syntax tank of 10000 liters capacity.

**11.10: Provision of Work shop:-**

Work shop shall be provided in mine office vicinity for routine, periodical and break down maintenance of heavy earth moving equipment and allied machineries.



## CHAPTER 12

### EMPLOYMENT POTENTIAL

#### 12.1 General Consideration

In this project the mechanized mining is proposed for production of building stone. The proposed organizational structure for the project is worked out in view of the type of mining system adopted and the need of effective environment Management Plan The requirement of various technical and non-technical personnel is determined while adopting the following norms :-

1. The mine will be worked in two shifts.
2. In estimating the requirement of magazine attendants, and provision of competent person, mates, blaster etc. due consideration has been given to the statutory.

12.2 Man power requirement and its distribution .As the applicant is willing to work the mine in two shifts. The following manpower is proposed.

S.No.	Designation	Category	Nos
1	Mines manager	Highly skilled	1
2	Assistant Managers	Highly skilled	4
3	Mining Mate cum Blaster	Highly skilled	4
4	Clerical and other staff	Skilled	3
5	Security Guard & Water man	Semi-skilled	3
6	Environment Assistance	Skilled	1
7	Diesel hydraulic shovel operator& back hoe operator	Highly skilled	14
8	Crusher Operator	Highly skilled	5
9	Rear dumpers operators	Highly skilled	26
10	Drill operators	Highly skilled	4
11	Track chain Dozer operators	Highly skilled	1
12	Grader	Highly skilled	1
13	Crane	Highly skilled	1
14	Heavy duty tow truck	Highly skilled	1
15	Tyre handler	Highly skilled	1



16	Water sprinkler	Skilled	1
17	Maintenance van driver	Skilled	1
18	Tractor operator/driver	Skilled	1
19	Tractor compressor operator	Skilled	1
20	Helpers/labour	Semi skilled	50
	<b>Total</b>		<b>124</b>

In addition to the above mentioned staff rest of the function i.e. supply of explosives, preparation and amendment of plans etc. shall be got performed from the professional on contract basis.



## CHAPTER- 13

### ENVIRONMENT IMPACT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN

#### 13.1 Base line information

##### 13.1.i Existing Land Use Pattern :- The area is almost barren:

Land use pattern Atela Kalan Stone Mine –Present, After 5 years & End of Life of Mine

S. No.	Land Use Category	Present	At the end of 5 <sup>th</sup> Year	At the end of Life of Mine
1	Waste Dump (Soil)	-	2.20	-
2	Reclamation (Water body)	7.70	26.30	27.56
	<b>Total Excavated Area</b>	-	<b>28.50</b>	<b>27.56</b>
3	Road	1.68	2.08	2.08
4	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5	Town Ship Area	-	-	-
6	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7	Mineral / Sub-grade mineral Storage	-	-	-
8	Undisturbed area	44.46	19.84	5.27
	<b>Total</b>	<b>54.00</b>	<b>54.00</b>	<b>54.00</b>

##### 13.1.ii Water Regime:

There is no perennial water drainage on the ground. As the surface is undulated only seasonal Nallahs(rivulets) developed in the area.

##### 13.1.iii Human Settlement:



Area covered under mining plan is uninhabited . The nearest village are Located 2 to 5 km. From the area under reference .The population of these villages as follows:-

Name of the villages	No. of house holds	Total population	Total Males	Total females
Rampura(4)	314	1963	1048	915
DohkaHarya(7)	474	2742	1434	1308
Dohka Moji(8)	192	1077	584	493
RehrodaKhurd(13)	57	369	191	178
RehrodaKalan(12)	216	1226	653	573
Bilawal(86)	386	2406	1273	1133
PichopaKalan(15)	484	2982	1565	1417
Bindraban(14)	117	765	410	355
PichopaKhurd(16)	408	2578	1372	1206
Tiwala(90)	451	2683	1476	1207
Shiswala(85)	405	2459	1284	1175
AtelaKhurd(87)	398	2297	1258	1039
AtelaKalan(88)	529	3144	1681	1463
Barsana(89)	324	1794	878	916
BirhiKalan(93)	718	4017	2108	1909
BirhiKhurd(95)	57	312	170	142
Pandwan(96)	445	2655	1430	1225
Mankawas(97)	648	4146	2237	1909
Dohki(107)	542	2978	1563	1415

#### 13.1.iv

#### Public Building , Places and Monuments:

There are no permanent public buildings within the lease area. The permanent human settlement is about 0.5 to 5kms. From the lease area. There are no other public places or monuments within or around the lease area.

#### Infrastructure Facilities;

The following facilities already exist in the village mentioned above

#### (A) Roads:





All the village are well connected by public roads with nearby town of CharkhiDadri . Buses of Haryana Road ways ply regularly in these village.

(B) Power supply:

All the villages have got power supply from the State Electricity Board.

(C) Water Supply:

Water is supplied by the Public Health Department Haryana through water supply scheme to the entire village.

(D) Medical, educational, Post & Telegraphs Facilities:

A Govt. Hospital is available at CharkhiDadri which is Just 15 Km from the Mine site. All the nearby villages have Middle schools & Sub Post Office. College, I.T.I and other facilities are available at CharkhiDadri.

**13.1.v**

**Quality of water:**

There are no water sources in the leasearea excepts dry nallaahs( rivulets). The precipitated water flows along the slope of quartzite. The water table in the area is about 45 m. below the 255 MRL. No water samples could be collected in absence of any well/tube well in the lease area.

**13.1.vi**

**Number and Type of Tress:**

The area under reference has natural growth of vegetation. These trees generally grown in the area are mainly JungliKikar, The height of these trees are generally smaller than 3mtrs. In the neighboring villages and nearby fields tress of Neem, KikarJund trees, Kanji (peganiceclabra) etc. are observed. No rare species exist in the area. There are a number of small plants. The Av. density of vegetation is 50/hectares, those are mainly xerophytes.



**13.2 Environment Impact Assessment Statement:**

**13.2A Land Environment:**

**13.2.A.i Land Scape:**

Major part of the area is virgin with only 7.70 hectares covered by old working pits. The dwelling houses of the nearby villages are about 1 to 5km away from the lease area.

**13.2.A.ii Aesthetic Environment**

The panoramic view of the lease hold area reveals that the area has only one ridge. Since the present mining plan envisages the proper and systematic development of working and future alignment of the pits, plantation on lease boundary, haul roads and around office infrastructures, the whole area will present an aesthetic look.

**13.2.A.iii Soil and Land Use Pattern**

The area under reference has thin soil cover or a very thin cover, with soil embodied in the joints. The soil has to be excavated first and properly stacked. This Mining Plan envisages remarkable change in the present land use pattern, which will be more uniform and systematic at the end of 5th year due to proper mining and stocking the dumps at the earmarked places.

**13.2.A.iv Agriculture:**

There is no involvement of agriculture land where, mining is proposed. Therefore no impact on agriculture is envisaged in this mine plan.

**13.2.A.v Forest:**



There is no forest land in the lease hold area. Therefore, there is no impact of mining on the forestation except the proposal for additional plantation program which will enrich the aesthetic beauty of the area.

**13.2.A.vi Vegetation and Wild life:**

There is vegetation in the area as already explained. The mining activities has no adverse impact on the vegetation as the same shall be taken care of by growing additional vegetation, which is suspected to be destroyed due to mining. The same shall be compensated by planned plantation over dumping places. Since the present vegetation is of very poor quality the adverse impact will be negligible. However the proposed plantation will ameliorate the vegetation.

The area is not inhabitant by any significant wild life except stray existence of animals like Jungle rat, mangoes jackals etc. reptiles like snakes, lizard and birds like pigeon, bet etc and insects like scorpion spider etc. Due to stray population of wild life there will be no significant effect on the wild life due to mining. Moreover, the growth of vegetation of dumps etc. shall provide additional home for these stray animals.

By adopting the proposed reclamation plan, envisaging liberal plantation of vegetation of mixed species, it is expected to provide congenial habitant to promote wild life. After abandoning the mining operations the area can be converted into a bird sanctuary or a fish farm by having the close liaison with the state Govt. authorities.

**13.2.A.vii Public Buildings, places and Monuments:**

As already described at 13.1.IV. There are no permanent buildings, places or monuments in the lease area

**13.2.B Water Environment:**



**13.2.B.i Surface Water and Ground Water:**

There is no perennial drainage system in the mining area and while planning due care for drainage has been given. No significant effect on surface water regime is expected. The water table in this area occurs below 45-50 below general surface. Hence there will be no effect on the hydrology of the area as the working will not reach the water table. However, there may be some effect on the seasonal nallahs, which drain the precipitated water flowing from the area.

Further it is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. Thus rain water harvesting will ameliorate the ground water of the area.

**13.2.B.ii Water quality:**

There is no water courses in the area except dry nallahs. The precipitated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 45-50 m below the ground surface.

**13.2.C. Noise & Air Environment:**

**13.2.C.i Noise :**

No test has been carried out to determine the present noise level. However, since this is an isolated area without any habitation industry the existing noise level in this area is well below the level at which normal speech communication may be interfered. The creation of vegetation barrier around the workings on both the sides of the roads and office buildings will also act as sound barriers.

**13.2.C.ii Air:**



Air pollution is expected during the mining of mineral, removal of overburden and operations of crushers in the area. The mining activities like drilling with down the hole drill machines, blasting by using high explosives and ANFO, loading of the minerals by excavators and its transportation from dumpers shall generate dust and which will tend to cause air pollution. The following measures shall be undertaken to curb generation of dust:-



## Dust

The dust generation during drilling will be reduced by wet drilling. The dust generated during blasting will be minimized by water spray at the working faces before and after the blasting. The dust generated by excavation will also be controlled by spraying of water at the working faces. Dust generated due to plying of vehicles on mine roads will be dealt with by regular sprinkling of water on the roads. The sprinkling water will be done at short intervals using only a small quantity of water at each time just sufficient to wet the surface. Further the vehicles used for transportation of the mineral will not be overloaded to prevent generation of airborne dust during their movement.

The speed of the movement of the vehicles will also be controlled to minimize generation of excess dust. Further as far as possible transport of mineral from the mines will not be done during the evening hours of summer season when the relative humidity is low and wind speed is high. The volume of airborne dust raised from the waste dumps will be kept under control by growing grass and vegetation.

The operative staff/ workers shall be provided with personal respiratory gadgets to prevent them from direct inhalation of dust.

### 13.2.C.iii Climate Condition:

The climate of Bhiwani district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The



winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wet test months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall	420 mm
Normal monsoon Rainfall	355 mm
Temperature	
Mean Maximum	41°C (May & June)
Normal Rain days	22°C

The general direction of wind in summer season is west to east and in winter it is northwest to southeast ( Plate no.14)

### 13.2.D Socio Economic Environment

#### 13.2.D. Demographic structure

Details of the Bhiwani District primary census Abstract has been given in table.

#### PRIMARY CENSUS ABSTRACT DISTRICT BHIWANI AT A GLANCE

Sr. No.	Item	Value			Rank in the Districts in Haryana
		Total	Rural	Urban	
1.	Population	1425022	1154629	270393	4
2.	No. Of households	246742	197505	49237	3
3.	Share in total population (%) (Haryana)	6.74	7.68	4.42	4
4.	Decadal growth rate (5)	22.49	19.42	37.56	14
5.	Child population age (0-6) % to total district population	15.73	16.11	14.13	7
6.	Sex ratio (female per 1000 males)	879	884	859	5
7.	Child sex ratio (0-6)	841	844	827	7



8	Urban population (%)	18.97			16
9	Literacy rate (%)	67.45	65.25	76.62	13
10	Female literacy rate (%)	53.00	49.72	66.90	13
11	Male female gap in literacy (%)	20.64	29.38	18.12	
12	Share of SC population (%) to total population in district.	90.61	19.54	19.90	10
13	Workers to total population	42.76	45.65	30.39	7
14	Main workers to total workers	69.78	67.27	85.88	16
15	SC literacy	56.26	55.59	59.05	12
16	Density of population	298	244	5256	18
17	Permanent houses (%) of total census houses.	70.53	68.1	8.67	8
18	Condition of houses good (%)	43.95	41.69	53.36	16
19	Households having no exclusive room or one room (% of total households).	19.5	18.09	25.70	5
20	Household with availability of electricity (% of total household)	83.19	18.76	93.24	12
21	Household having tap water (% of total households)	55.4	48.55	84.01	6
22	Households having bathroom with houses (%)	55.05	45.0	70.93	13
23	Household having kitchen within houses (%)	62.33	60.18	71.37	5
24	Household having television	42.19	34.26	69.94	17
25	Household having telephone (%)	6.92	3.85	19.69	18
26	Household having bank accounts (%)	44.44	44.21	45.41	11
27	Household having radio (%)	42.63	42.35	43.79	5
28	Household having car, jeep (%)	2.34	1.90	4.14	17
29	Household having scooter, motorcycle (%)	10.35	7.38	22.65	19
30	Household having bicycle (%)	34.41	27.68	62.31	19
31	Household having no drainage of Wastewater (%)	36.3	41.54	14.55	6
32	Household having no Lateran (%)	64.52	73.93	25.51	6
33	Household having none of assets (%)	33.8	38.21	15.58	18
34	Electricity available, latrine no available (%)	50.19	57.28	20.81	5
35	Electricity not available, latrine available (%)	2.48	2.59	2.05	11





Due to mining activities significant changes are expected in the daily life of the inhabitants as mining activities will open new avenues of employment generation for local people. The favorable changes are expected in the terms of more employment opportunities, better Infrastructure facilities like power linkage, medical facilities, water supply etc.

**13.2.D.ii Occupational health and safety :**

The people/labour who are associated with mining activities are generally exposed for pollution related diseases which on prolonged exposure to the same environment become chronic. In order to check the above, regular check up of the labour and other persons working in the same environment shall be made. Preventive measures viz. Use of respiratory masks, helmets etc. shall be adjusted to avoid the adverse impact of mining / pollution on the health of the labour.

**13.2.D.iii Recreational Facilities:**

After eight hours of hard work the labour/workers/operators badly need some kind of entertainment to ease them. It is therefore proposed, to organize a cultural and educative program at least once in month. Some additional programs shall be organized, especially on the family welfare and other fields to entertain them as well as to educate them. This will include program on alcohol addiction etc.

**13.3 Environment Management Plan:**

To check the adverse effect likely to be caused to the proposed mining on the environment and ecology of the area environmental control measures are to be followed. Based on the environmental impact assessment made the following measures shall be taken into account for the betterment of the environment and ecology.



**13.3.i Temporary storage and Utilization of top soil:**

The topsoil will be removed separately in advance of the mining of other overburden and will be stocked separately. The locations of the soil stack yard are shown in year wise plans. To prevent erosion of the stacked top soil the height of the stacks will be restricted to 6mtrs above ground level. The retaining wall will also be erected along the lower edges of the topsoil of stacks, as they will be prone to erosion. The width of these walls will be 0.5 mtrs. at top and 1 meter at the bottom with a height of about 6 mtrs. Further plantation of grass is proposed on the surface of the dump slopes to improve its quality and to restrict soil erosion.

**13.3.ii Proposal for reclamation of land affected by mining activities during and at the end of mining lease period.**

Land reclamation is the single broad environmental protection system which will provide protection and control of most of the adverse environmental impacts of mining and also have improvement of aesthetic beauty of the area which will be denuded due to mining activity. As a result of mining of this deposit the original ground profile will be lowered and deep depressions will be created. Further at some selected places the ground will be covered as waste dumps. Besides this the hydrographic system may be affected due to wash-off. Based on these conditions it is proposed to improve the effected land wherever possible for better land use, so as to support forestry and creation of water reservoir etc. Accordingly, the land reclamation portion shall be done by planting trees on the dumps along the roads surroundings the office building on the waste barren land and in the open pits when they reach their ultimate stage.



### **Plantation Along the roads.**

In order to barricade the dust generated during the movement of the trucks and also to restrict noise level a forestation is proposed along the approach roads to pits . This will improve the aesthetic beauty of the area by a screening visual intrusion of the quarry workings. For this purpose the soil produced from the mine will be brought and spread in the layer of 2mtr. thick and 6 meters. Wide along both sides of the roads.

### **Surrounding the office buildings:**

A vegetation barrier will be provided around the office buildings and on the waste barren land.

### **In open pits :**

As the mineral is not going to be depleted during lease period no plantation is proposed in the mineral bearing area/ pits. Only foot hill side and barren land will be planted.

### **A forestation/ Green belt**

The lease area is hilly terrain devoid of any vegetation. Mining activities will not cause any harm to riparian vegetation cover as the working will not extend beyond the lease area. Land outside is the private agriculture land. Link road from the crusher zone pass through the areas. It is proposed to have plantation on both sides of the roads as greenbelt to provide cover against dust dissemination. Plantation will also be carried out as social forestry programme in villages, school and the areas allocated by the Panchayat/ State authorities.

Native plants like Neem, Pipal, Khejri, Ber and other local species will be planted. A suitable combination of trees that can grow fast and also have good leaf cover shall be adopted to develop the greenbelt. It is proposed to plant 3500 no's of native species along with some fruit



bearing and medicinal trees during the plan period.

**Table: Greenbelt Programme**

Year	Saplings to be planted	Survival 70 %	Species	Place of Plantation
I	700	490	Neem,	Along the roads, in barren area, surrounding office & rest shelter and other social forestry programme.
II	700	490	Peepal,	
III	700	490	Ber,	
IV	700	490	Shisham,	
V	700	490	Sirish,	
<b>Total</b>	<b>3500</b>	<b>2450</b>	Babool, Gulmohar	

The tree plantation is proposed at spacing of 3m x3 mtr. The size of the pits will be 40cm x 40 cm filled with manures. The intervening space between the trees will be covered with bush varieties. Taking a survival rate of 70%, about 700 no. of trees will be planted year wise during plan period. Fifteen hundred (1500) trees/ hectare shall be planted on yearly basis.

**Post plantation care:**

This will include the following measures:-

- a) Protection from grazing and fires.
- b) Watering at least once a week during dry spells.
- c) Manu ring
- d) Weeding and soil working.
- e) Mulching
- f) Replacement of causalities.
- g) Protection form pests.

**The maintenance system will include:-**



- a) Examination of signs of slopes failure and excess erosion.
- b) Collection of water samples.
- c) Keeping and effective track of vegetation established.
- d) Checking the quality of air near mine site by air sampling and getting it analyzed.
- e) Collection and analysis of regular soil samples from reclaimed areas to monitor the improvement in soil characteristics.

**Equipment for Environmental Restoration Plan:**

- i) Water tankers will be used for the sprinkling of water on the mining faces regularly .
- ii) A tractor with trolley will be used to transport the seeds, saplings, fertilizers and other agricultural tools. The same tractor will be used for water spray, work also. Other miscellaneous agricultural tools will be required for seedbed preparation, terracing of dumps, mulching, plantation and roost post plantation care.

**Manpower and Organization:**

Regular man power will be required to be deployed for supervision, sample collection, assistance in reclamation works, monitoring system of post plantation care. For carrying out the actual work of a forestation, sapling plantation, mulching, construction of drains and tanks and other maintenance work, casual labor will be deployed as and when necessary.

**13.3.iii**

**Program of Afforestation**

The afforestation will be done proposed earlier. Plant saplings will be obtained from private/ Govt. nurseries. During the forestation work the combination of different type of species will be done on the area ear marked for plantation in green belt & in the surrounding areas.



The area is demarcated on the plan plat No 5-9. The tree plantation will be made all along the mine approach roads surrounding the site services. This will cover about 3.40 ha land. About 700 trees per year will be planted on the above area. The annual area covered will be 0.70 hectares. The survival rate is expected 70% therefore the saplings / plants which dies will be replace in addition to the plants proposed above.

**13.3.iv Stabilization and Vegetation of Dumps:-**

The same is already described in chapter 7 at para no. 7.3

**13.3.v Treatment and Disposal of water from Mine:-**

There is no regular disposal of water form mines except during rainy season. The water pumped out from the mines during rainy season shall be disposed through water garland ditches where settlement tanks are provided at regular interval to settle down the UN-dissolved matter/ sediments before finally depositing of the purposed out water through the natural nallah which is situated within the lease hold area.

Since the rainy water and the ground water do not contain any toxic material, this does not need any chemical treatment before disposal.

**13.3.vi Measure for minimizing adverse effects on water regime:**

It is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. This will help in recharging th ground water at a faster rate.



**13.3.vii Socio Economic benefits arising out of mining: -**

The socio economic benefits in the form of labour employment for mining transportation and other ancillary activities pertaining to mining shall benefit the local people also in the activities like milk supply and sharpening of tools, maintenance of tools etc. will also better the socio-economic status of the local inhabitants.

**13.4 MEASURES TAKEN AND TO BE TAKEN FOR THE CONTROL OF WATER, NOISE AND AIR POLLUTION**

**Air Pollution:**

Emission of gases and dust takes place due to movement of vehicles. Spraying of water and plantation along the road side prevents the spread of dust. Plantation also acts as barrier for restricting pollution. Impact on air environment has been assessed taking in to consideration the proposed production and increase emissions. The sources of air pollution are given below:

- Operation of mining machinery/ loading operations
- Transportation of mineral
- Wind erosion from barren area and nearby area

**Air pollutants released during production can be checked by:**

- Dust suppression system/ water spraying would be adopted at mine working and loading points
- Excavation operations to be suspended during very strong wind conditions
- Afforestation will be carried out for control of dust
- Plantation with wide canopy trees along approach road will help in dust suppression
- Persons to be provided with dust mask and other personal protective equipments, particularly during summer months and dust storm periods



### **Transportation**

- Regular water spraying on haulage roads during mineral transportation by water sprinklers,
- Avoid over loading of tippers & consequent spillage on the roads,
- Mineral carrying trucks will be effectively covered by tarpaulin to avoid escape of fines to atmosphere,
- Air quality shall be regularly monitored both in the core zone and the buffer zone.

### **Controlling of NOx level**

The source of NOx is due to vehicular emission. This can be controlled by proper maintenance and servicing of vehicles. Only P.U.C. certificated vehicles will be permitted

### **Noise Pollution**

There is drilling and blasting for mineral extraction. Noise pollution due to drilling, blasting & transportation will cause some problem to the inhabitants of this area because there is human settlement in close proximity to the link roads in lease area. Effective steps will be taken to keep the noise level well below the DGMS prescribed limit of 85 dBA.

### **Noise control is achieved by the following:**

- Proper care and maintenance of the equipment will be carried out.
- Personal protective equipment will be provided to the workers.

### **13.5 DETAILS OF HEALTH CHECKUP AND INSURANCE OF ALL THE EMPLOYED PERSONS (FOR EXISTING LEASE)**

All workers will be subjected to medical examination as per Mines Rule 1955 both at times of appointment and at least once in five years. Medical camps will be organized for this activity. Insurance of all employees as per the rules will be carried out.

### **13.6 Corporate Social Responsibility**





As a corporate responsibility following measures along with budget provision is proposed for improving the conditions of persons in and around the project area:

Sr. No.	Description	Amount (in lacs)
1	Health check up camps	3.0
2	Surveillance programme of the workers	2.0
3	Insurance cover of workers	5.0
4	Assistance to local schools, scholarship to students	2.5
5	Sanitations and drinking water facilities	5.0
6	Vocational training to persons for income generation	2.5
7	Assistance to self help groups	5.0
<b>Total</b>		<b>25.00</b>

### 13.7 Fund Provision for Environmental Management

It is proposed to create an Environment Management Fund. The contractor shall deposit/pay an amount equal to 10% of the due contract money along with instalments towards the 'Mines and Minerals Development, Restoration and Rehabilitation fund.

### 13.8 Fund Provision for EMP Measures

Following provisions are proposed to be taken for improving, control and monitoring of environment protection measures

Sr. No.	Particulars	Amount (in lacs)
1	Pollution monitoring – Air, Water, Noise	4.0
2	Pollution abatement – Water sprinkling	3.0
3	Wire fencing at plantation sites	1.0
4	Plantation including maintenance	1.0
5	Rainwater harvesting	2.0
6	Haul road and other roads repair and maintenance	2.5
<b>Total</b>		<b>13.5</b>

The protection measures will be dynamic and subject to periodic review so that measures remain effective and appropriate.



## PART –II

### PROGRESSIVE MINE CLOSURE PLAN

#### 1.0 Introduction:-

Vide notification GSR 330(E) date 10-04-2003, MCDR, 1988 has been amended incorporating preparation of Mine Closure Plan. Corresponding amendments has been made in MCDR, 1960. Accordingly Haryana Government has also amended the mineral concession rules which requires the Mine Closure Plan (Progressive & Final) as per chapter 10 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012" In the present case as it is a new mine a progressive mine closure plan, as a component of the mining plan is required. The present position of the deposit does not permit to close any part of the pits. At the proposed pace of work in the next coming 10 years it will not be possible to close down any part except doing protective works like fencing and making of a drain, plantation etc.

#### (A) NAME & ADDRESS OF THE LESSEE

M/s MSK (JV),S-571, Greater Kallash Part-II, New Delhi 110048

#### (B) LOCATION OF THE LEASE AREA

District Bhiwani  
State Haryana  
Taluka Dadri  
Village AtelaKalan

#### (C) EXTENT OF THE LEASE AREA

Village	Khasra no.	Area in hect.	Ownership
AtelaKalan	103,104 min,105,106,107 min	54hectares	Gram Panchayat



**(D) PRESENT LAND USE PATTERN**

Details are as below :

S. No.	Land Use Category	Present
1.	Waste Dump (Soil)	-
2.	Reclamation (Water body)	7.70
	<b>Total Excavated Area</b>	-
3.	Road	1.68
4.	Infrastructure (Administrative building crusher etc.)	0.16
5.	Town Ship Area	-
6.	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-
7.	Mineral / Sub-grade mineral Storage	-
8.	Undisturbed area	44.46
	<b>Total</b>	<b>54.00</b>

**(E) METHOD OF MINING:**

(Details are given in Chapter 4 of the main Mining plan)

The present mining operations are designed to be carried out by open cast mining means. The entire mining operation proposed are mechanized A part of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not put up in this stack yard to avoid the double handling. In the present operation the bench height shall be 9mtrs. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintained the 70° the mineral bearing rocks being hard and compact.

**(F) MINERAL PROCESSING OPERATION:**

No mineral processing is envisaged for stone (minor mineral) produced during the mining activity.



### **1.1 Reasons for closure:**

The progressive mine closure plan has been prepared in compliance of Rule 70 (1) of Haryana Minor Mineral Concession Rules 2012 under MMCR 1986. Which is reproduced as under.

**Rule 70.(1)** Every mineral concession holder shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director in this behalf.

As the mineral is not going to be depleted during the plan period no immediate closure is planned as sufficient reserves are available to carry on the activities. There is market potential in domestic demands.

### **1.2 Statutory Obligations:**

The lessee is bound to submit the Progressive mine closure plan either with Mining plan or Scheme of Mining Lessee is bound to follow the terms and conditions as will be stipulated in the lease deed /LOI.

In addition to it the rules pertaining to the Protection of Environment i.e. Environment Act Environment Rules and other associated rules for the protection of environment will have to be followed. During the course of mining the rules stipulated in Mines Act, Mines rules Metalliferous Mines Regulation 1961 and RMMCR.1986 will be followed. All other rules pertaining to the mining existing at that time will be followed during the course of mining activities.

### **1.3 Closure plan preparations**

Name, address and registration number of the recognized persons who prepared the progressive closure plan and name and address of the executing agency who is involved in the preparation of progressive mine closure plan.

S.N.Sharma  
RQP/DDN/135/2001-A (Annexure-III)



Lessee will himself implement the closure plan; no outside agency will be involved.



## **2.0 MINE DESCRIPTION**

### **2.1 General Geology and Local Geology**

#### **2.1.1 Regional Geology**

(Details are given in the Chapter 3 of main mining plan)

#### **2.1.2 Local Geology**

(Details are given in the Chapter 3 of main mining plan)

### **2.2 Reserves**

(Details are given in the Chapter 3 of main mining plan)

### **2.3 Mining Method:**

Mining method to be followed is described in Chapter 4 of mining plan

### **2.4 Mineral Beneficiation**

No mineral beneficiation is envisaged. But it is proposed to install a crusher in the lease hold area for crushing boulders.



**3 Review of implementation of mining plan including five years progressive closure plan upto the final closure plan**

Mining Plan and Progressive mine closure plan are being submitted for the first time. It will be reviewed after five years and review of implementation will be given with next mining scheme.



#### 4.0 CLOSURE PLAN

##### 4.1 Mined - out land

At the end of mining plan period that is at the end of 5 years about 26.30 hectares of area will be mined out. Landuse at various stages is given in the table below:

**Table Land Use at the end of plan period Land use pattern Atela Kalan Stone Mine – Present, After 5 years & End of Life of Mine**

S. No.	Land Use Category	Present	At the end of 5 <sup>th</sup> Year	At the end of Life of Mine
1	Waste Dump (Soil)	-	2.20	-
2	Reclamation (Water body)	7.70	26.30	27.56
	<b>Total Excavated Area</b>	-	<b>28.50</b>	<b>27.56</b>
3	Road	1.68	2.08	2.08
4	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5	Town Ship Area	-	-	-
6	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7	Mineral / Sub-grade mineral Storage	-	-	-
8	Undisturbed area	44.46	19.84	5.27
	<b>Total</b>	<b>54.00</b>	<b>54.00</b>	<b>54.00</b>

##### 4.2 Water quality management

There are no water courses in the area except dry nallahs. The precipitated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 45-505mtrs. Below the ground surface. There is no flow of water in the lease in post monsoon period. Area is having 420 mm rainfall in a year. During rainy season, water will be accumulated the pit which will be rained out and finally it will be sent in to





natural drain. A settling tank will be provided so that the finer sediments are settled down. These finer sediments will be collected after rain is over. There will be no intersection of water table as working will be carried above the valley level while the water level is 45-50 m below the general surface of area. Some wells are located in the agriculture fields where water table was recorded 45-50m.

#### **4.3 Air Quality Management:**

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like facemask, ear plug/ muffs.

For air pollution management at the progressive mine closure of mine, greenbelt will be developed to prevent and control air pollution.

#### **4.4 Waste Management:**

As stated in mining method, there will be no OB/ waste generation and there will not be any OB/ waste dumps.

#### **4.5 Top Soil Management**

There is a very thin soil/ top soil which will be scraped and used for plantation.

#### **4.6 Tailing dam management**

There is no proposal of beneficiation of mineral. No tailing dam is envisaged.

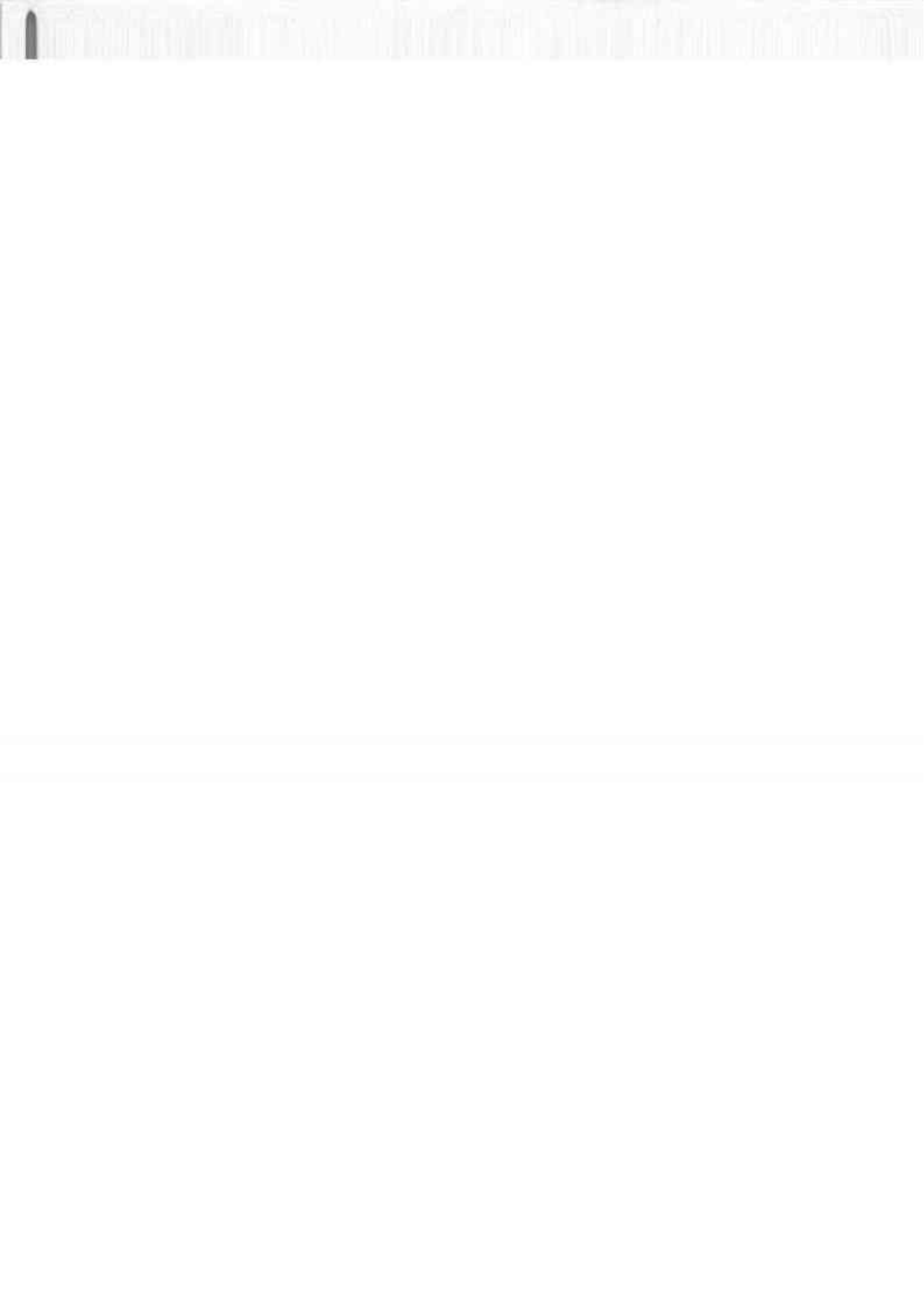
#### **4.7 Infrastructure:**

The infrastructure facilities like site office, first-aid station, rest shelter/ store, drinking water etc. will be established.

#### **4.8 Disposal of mining machinery:**

There will be deployment of heavy earth moving machines for operation of mine. Crusher will also be installed for in-house crushing of boulders. As this is a Progressive Mine Closure Plan for the next 5 years and therefore we do not envisage the disposal of mining and crushing machineries. But at the end of lease period, it is proposed to decommission the crushers.





#### 4.9 Safety & Security:

Safety measures will be implemented to prevent access to excavation area by un-authorized persons as per Mine Act 1952, MMR 1961.

- i. Safety measures will be implemented as per Mine Act 1952, MMR 1961, Mines Rules 1955.
- ii. Provisions of MMR 1961 shall be followed strictly and all roads shall be 10 m wide and have a gradient of not more than 1 in 20.
- iii. The bench height will be 9.0m.
- iv. Width of bench will be kept around 20.0 m for ease of operations and provide sufficient room for the movement of equipments.
- v. Protective equipment like dust masks, earplugs/ muffs and other equipments shall be provided for use by the work persons.
- vi. Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- vii. Danger signs shall be displayed near the excavations.
- viii. Security guards will be posted.
- ix. In the event of temporary closer, approaches will be fenced off and notice displayed.

#### 4.10 Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, inundation in underground mines, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the hilly area will involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.



- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
  - All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, RMMCR 1986 and other laws applicable to mine will strictly be complied with.
  - During heavy rainfall the mining activities will be suspended
  - All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.

#### 4.11 Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
  - Mine roads and approach roads,
  - Fencing on approach roads,
  - Checking and maintenance of machines and equipment,
  - Drinking water arrangements,
  - Mine office, first aid stations etc.
- Competent persons shall inspect the area regularly.



- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.



**5.0 ECONOMIC REPERCUSSION OF CLOSURE OF MINE AND MANPOWER RETRENCHMENTS**

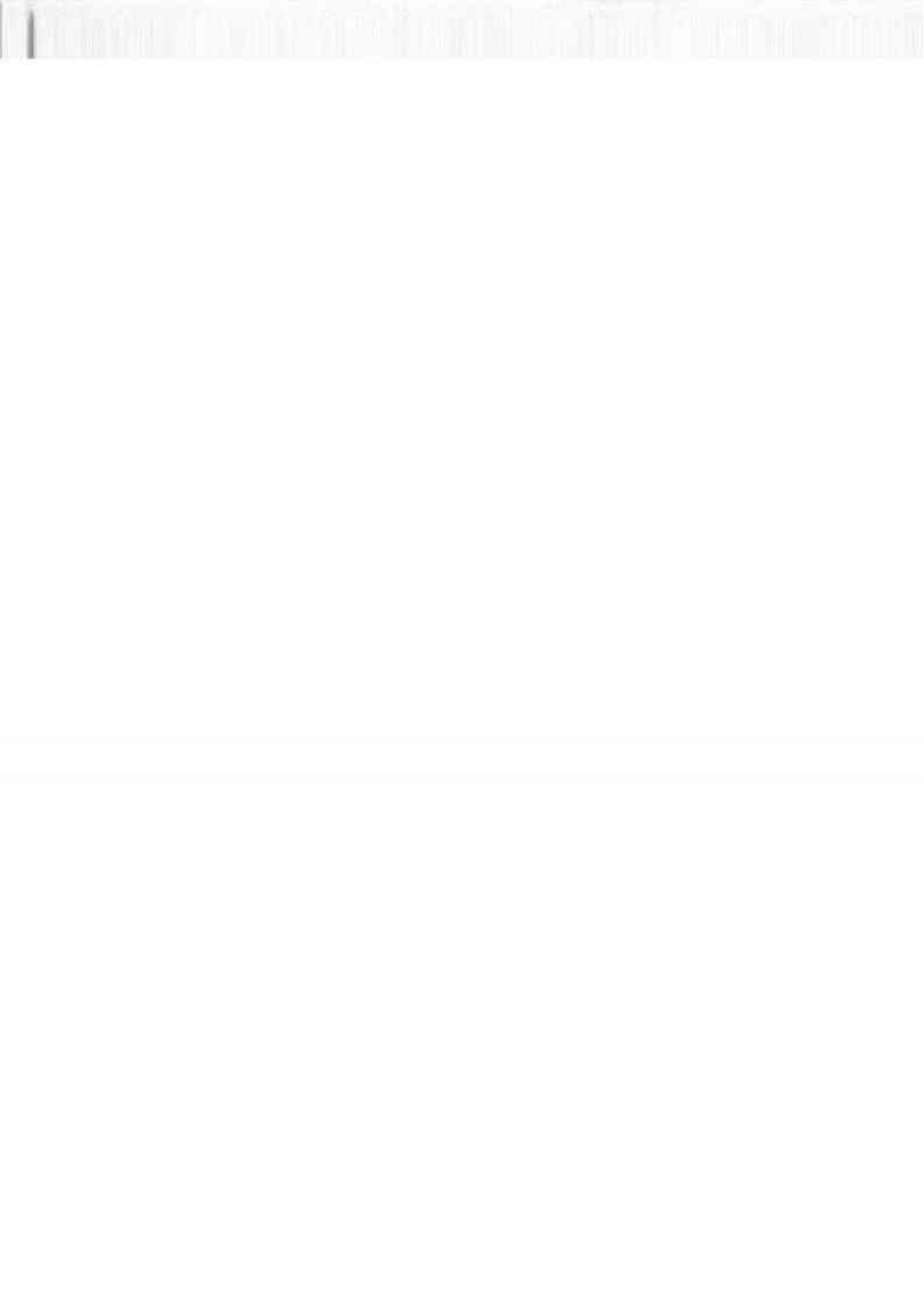
Lease area will be granted for a period of 12 years only. As per the production programme envisaged, at the end of lease period, still sufficient reserves would be left available for continuing production activities further. Hence, no closure is planned. There will be no affect on the man power as the persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.



## 6.0 TIME SCHEDULING FOR ABANDONMENT

The lease area has enormous potential for continuance of operations even after the expiry of the awarded period. The details of time schedule of all abandonment will be given at the time of final closer plan







## 7.0 ABANDONMENT COST

As at present mining is not going to be closed so abandonment cost could not be assessed. However based on the progressive mine closure activities during the plan period, cost is assessed as given below:

**Table 16: Abandonment Cost**

ACTIVITY	YEAR					Rate	Amount (inRs.)
	First	Second	Third	Fourth	Fifth		
Plantation (in no.)	700	700	700	700	700	@100Rs per sapling	3,50,000
Plantation cost	70,000	70,000	70,000	70,000	70,000	Including maintenance	
Wire fencing (meter)	60,000	60,000	60,000	60,000	60,000	@ of 120Rs per meter	3,00,000
Toe walls (m)770m	7,70,000	-	-	-	-	@ Rs 1000/m	7,70,000
Drain(m) 770m	7,70,000	-	-	-	-	@ Rs 1000/m	7,70,000
	<b>Total</b>						<b>21,90,000</b>



## 8.0 FINANCIAL ASSURANCE

Total 26.38 ha area will be put in use up to the end of the plan period. Details of area put in use as given below (As per circular No.4/2006 issued by CCOM, Nagpur following table has been considered for calculation for financial assurance).

**Table 17: Calculation for Financial Assurance**

S. No.	Item	Area put on use at start of plan (Ha) (A)	Requirement at the end of plan period (Ha)	Total area put to use (Ha) (B)	Area considered as fully reclaimed & rehabilitation (Ha) (C)	Net area considered for calculation (Ha) D = (B-C)
1.	Area to be excavated	7.70	26.38	26.38	0.00	26.38
2.	Storage for topsoil	0.0	0.80	0.80	0.0	0.80
3.	Overburden/ dumps	0.0	0.0	0.0	0.0	0.00
4.	Mineral storage	0.0	1.20	1.20	0.0	1.20
5.	Infrastructure (Workshop, Adm. Building & Road)	0.16	0.18	0.18	0.18	0.18
6.	Green belt	0.0	3.40	3.40	3.40	0.0
7.	Tailing pond	0.0	0.0	0.0	0.0	0.0
8.	Effluent treatment plan	0.0	0.0	0.0	0.0	0.0
9.	Mineral separation plant	0.0	0.0	0.0	0.0	0.0
10.	Township area	0.0	0.0	0.0	0.0	0.0
11.	Others to specify	0.0	0.0	0.0	0.0	0.0
<b>Total</b>		<b>7.86</b>	<b>31.96</b>	<b>31.96</b>	<b>3.58</b>	<b>28.56</b>

Total 28.56ha area is considered for calculation. The total financial assurance (@15000/- per ha. will be of Rs. 4, 28,400/-. This will be given by lessee as per rule no 70 (1) (6) amended in 2012 as surety bond / bank guarantee.



**9.0 CERTIFICATE**

It is enclosed with the report.



**10.0 PLAN AND SECTION**

Plan and section are prepared and enclosed with the mining plan.

S. N. SHARMA  
RECOGNISED QUALIFIED PERSON (RQP)  
INDIAN BUREAU OF MINES (IBM)  
RQP No. RQP/DDN/135/2001/A  
VALID UPTO : 29th MARCH 2021



Registered

From:

The Director,  
Department of Mines & Geology,  
Haryana.

To:

M/s MSK (JV),  
S-571, Greater Kailash,  
Part-II, New Delhi - 110 048.

Memo No. DMG/HY/ML/Atela Kalan/2013/155  
Dated Chandigarh, the 03.01.2014

Subject: Acceptance of the highest bid in respect of minor mineral mines of "Stone alongwith Associated minor minerals" of "Atela Kalan" over an area of 54.00 hectares in the Tehsil Dadri district Bhiwani offered in the auction held on 30.12.2013 and issuance of Letter of Intent (LoI) regarding.

You offered the highest bid of Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum, against the Reserve Price of Rs. 11,77,00,000/- per annum, for obtaining the Mining lease of Minor Mineral Mines namely "Atela Kalan" over an area of 54.00 hectares falling in Khasra numbers 103,104min,105,106,107min of Villages "Atela Kalan" in Tehsil Dadri, District Bhiwani, in the auction held on 30.12.2013 in the office of the Mining Officer, Bhiwani for the grant of mining leases of minor mineral mines of stone alongwith associated minor minerals of the districts of Bhiwani.

2. You are hereby informed that the state government has accepted the highest bid of Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum, offered by you in respect of the above said minor mineral mines/quarries of "Atela Kalan" under the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012 (State Rules). Accordingly, you have become the successful bidder in respect of "Atela Kalan" quarries of the district, Bhiwani.

3. The State Government having accepted the aforementioned highest bid offered by you, the Department is pleased to issue this Letter of Intent (LoI) for grant of mining lease in your favour in respect of the Mines/area namely "Atela Kalan" of stone along with associated minor minerals subject to the following terms and conditions:-

- (i) The period of lease shall be 12 years and the same shall commence with effect from the date of grant of environmental clearance by competent authority or etc.



expiry of a period of 12 months from the date of this communication of acceptance of highest bid/ issuance of "Letter of Intent", whichever is earlier;

- (ii) Though due care had been taken in specifying the details of the area of the mining sites, however, in case of any inadvertent mistake, the same shall be got rectified/corrected before execution of the lease deed/agreement;
- (iii) The amount of the highest bid i.e. Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum shall be the "Annual dead rent" payable by you in the manner prescribed in the lease deed/agreement to be executed on form ML-1 appended to the State Rules.
- (iv) The above said annual dead rent shall be increased @ 25% on completion of each block of three years. Accordingly, the year wise amount of the annual lease money shall be as per details given below:

Sr. No.	Year of the Contract Period	Annual contract Money
1	First Year	Rs. 16,07,00,000
2	Second Year	Rs. 16,07,00,000
3	Third Year	Rs. 16,07,00,000
4	Forth Year	Rs. 20,08,75,000
5	Fifth Year	Rs. 20,08,75,000
6	Sixth Year	Rs. 20,08,75,000
7	Seventh Year	Rs. 25,10,93,750
8	Eighth Year	Rs. 25,10,93,750
9	Ninth Year	Rs. 25,10,93,750
10	Tenth Year	Rs. 31,38,67,188
11	Eleventh Year	Rs. 31,38,67,188
12	Twelfth Year	Rs. 31,38,67,188

- (v) As per the terms and conditions of the grant, you are liable to deposit Rs. 4,01,75,000/- i.e. equal to 25% of the annual bid amount as "security deposit" and Rs. 1,33,91,667/- on account of one months advance dead rent out of which you have already deposited an amount of Rs. 1,60,70,000/- i.e. equal to 10% of the annual bid amount as 'initial bid security' at the fall of hammer. The balance amount of Rs. 2,41,05,000/- of the bid security i.e. 15% of the annual bid amount along with Rs. 1,33,91,667/- on account of one month's advance dead rent shall be deposited before commencement of the mining operations or before expiry of the period of 12 months, whichever is earlier;
- (vi) You shall have to execute lease deed in Form ML-1 appended to the State Rules within a period of 90 days from the date of issuance of this communication/ grant of Lol. The stamp as applicable at the time of execution/registration of the agreement shall be payable by you.
- (vii) Four copies of draft lease deed/agreement shall be submitted, of which the first copy shall be submitted on stamp paper of Rs. 1,38,98,040/- (Rs. One crore thirty



eight lakhs ninety eight thousand forty only. This amount is subject to audit and in case of any difference found at a later stage, the difference shall be payable by you on demand;

- (viii) The lease deed would also be required to be got registered on payment of the applicable Registration fee;
- (ix) In case you fail to execute the Lease Deed within the prescribed period of 90 days, this Lol shall be deemed to have been revoked and the amount of initial bid security deposited at the time of auction shall be forfeited. Further, the balance amount of 15% towards the bid security, amounting to Rs. 2,41,05,000/- being the 15% of the annual bid amount, shall be recovered as arrears of land revenue and, you, as the Lol holder/defaulters, shall be debarred from participation in any future auctions for a period of 5 years;
- (x) You shall also furnish a solvent surety for a sum equal to the amount of the annual bid for execution of the lease deed/agreement. In case the surety procured by the lessee during the subsistence of the lease is not found solvent, the lessee shall offer another solvent surety and a supplementary deed shall be executed to this effect;
- (xi) You shall be liable to deposit the Dead Rent in advance at monthly intervals as per provisions of lease deed/agreement i.e. from the date of commencement of the lease deed;
- (xii) You shall be liable to pay dead rent as determined through open auction or shall pay royalty in respect of each of the minor minerals extracted or removed or consumed by you or by your agent, manager, employee etc., whichever is more. The royalty shall be payable at the rates prescribed in the First Schedule appended to the State Rules and as may be revised by the State Government from time to time.
- (xiii) You shall also deposit/pay an additional amount equal to 10% of the due Dead Rent/Royalty, whichever is more, along with the monthly installments towards the 'Mines and Minerals Development, Restoration and Rehabilitation Fund'.
- (xiv) You shall also be liable to pay advance income tax as per provisions of Section 206(c) of income tax act in addition to contract money, payable as per terms and conditions of contract agreement.
- (xv) On enhancement of the annual dead rent with the expiry of every three years period, you shall deposit the balance amount of security so as to upscale the security amount equal to 25% of the revised annual dead rent as applicable for one year with respect to the next block of three years. No interest, whatsoever.



shall be payable on the security amount deposited under the prescribed security head of the government.

- (xvi) You shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) as per chapter 10 of the State Rules for the "Mining site" and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorised by the Director, Mines & Geology, in this behalf.
- (xvii) Further, the actual mining will be allowed to be commenced only after prior Environmental Clearance is obtained by you as the Lot holder/mining contractor for the Minor Mineral Stone Mines/Quarries from the Competent Authority as required under EIA notification dated 14/9/2006, as amended from time to time by the MoEF, GoI and guidelines/ circulars issued in this behalf.
- (xviii) The Mining contractor to whom the mining rights have been granted through this lease would also be liable to pay the following to the landowners for undertaking mining operation:
- (a) Annual rent in respect of the land area blocked under the concession but not being operated, and
  - (b) Rent plus compensation in respect of the area used for actual mining operations.
- (xix) The amount of annual rent and the compensation shall be settled mutually between the landowner and the lessee. In case of non-settlement of the rent and compensation, the same shall be decided by the District Collector concerned in accordance with the provisions contained in Chapter 9 of the "Haryana Minor Mineral Concession, Stocking, and Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".
- (xx) The total mineral excavated and stacked by the lease holder within the area granted on mining contract shall not exceed two times of the average monthly production as per approved Mining Plan at any point of time.
- (xxi) The lessee shall not stock any mineral outside the concession area granted on mining lease, without obtaining a valid licence as per provisions contained in Chapter 14 of the State Rules.
- (xxii) The lessee shall not carry out any mining operations in any reserved/ protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such





authority or officer authorized in this behalf, lessee(s) shall not be entitled to claim any relief in payment of contract money on this account;

- (xxiii) A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf
- (xxiv) The lessee shall be under obligation to make available up to 75% of the produced raw material/stone to the downstream industries i.e. stone crushers operating in the area. However, in case lessee is unable to find market for his raw mineral to the extent of 75% of production, he would be required to obtain prior permission of the department to consume raw mineral in excess of 25% of his production but not exceeding 50% of his production for grounds to be recorded in writing;
- (xxv) No transfer in lease shall be permissible for a period of first five years of grant of lease. However, on submission of an application, in accordance with the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Mineral & Prevention of Illegal Mining Rule, 2012, and after satisfying itself the state government may allow inducting of other partners/share holders to the extent of forty nine percent of the total shareholding of the original leaseholder;
- (xxvi) The lessee shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosives Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made thereunder, Wild Life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;

4. Accordingly, you are advised to submit the Draft Mining Lease deed/agreement on Form ML-1 (in Four copies) appended to the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012, first copy of which shall be on the stamp paper of Rs. 1,38,98,040/- (Rs. One crore thirty eight lakhs ninety eight thousand forty only), along with other requisite documents including a solvent surety(s) for a sum equal to the amount of the annual bid for execution of the agreement, within a period of 90 days from the date of issue of this bid acceptance letter and the Lot.

5. Please note that one Sh. Rajbir Singh had filed a CWP bearing No. 27700 of 2013 before the Hon'ble Punjab & Haryana High Court challenging the conditions of the auction notice and the rules relating to payment of Rent and Compensation to the land owners and the time of 12 months allowed to the highest bidders/Lot holders for



obtaining the Environmental Clearance as per EIA notification of the Ministry of Environment & Forests, Government of India. While the Hon'ble High Court did not restrain the auction proceedings and held that that the auctions may be held but it has also directed vide its orders dated 17.12.2013 that the same shall be subject to final outcome of the above said CWP. Accordingly, this acceptance/Lof is being issued subject to the outcome in CWP No. 27700 of 2013 pending before Hon'ble Punjab & Haryana High Court.

State Mining Engineer,  
for Director Mines & Geology, Haryana.

Enclt.No. DMG/HY/ML/Atela Kalan/2013/156

Dated: 03.01.2014

A copy is forwarded to the following for information and necessary action:-

1. The Chairman Haryana State Pollution Control Board, Sector-6, Panchkula
2. The Deputy Commissioner, Bhiwani.
3. The Mining Officer, Bhiwani.

State Mining Engineer,  
for Director Mines & Geology, Haryana.



# MSK (JV)

S-571 GREATER KAILASH II, NEW DELHI 110048

TEL: 011-29220374/75 FAX: 011-29220377

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## Declaration

The Mining Plan and Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertook that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed in the Mining Plan.



  
Applicant

# ANNEXURE 2



सर्वोच्च न्यायालय द्वारा  
 राज्य सरकार को सार में  
 मान्यता का प्रमाणपत्र

INDIAN BUREAU OF MINES

(खनिज रियायत नियमावली 1960 के नियम 22(सी) के अंतर्गत)

श्री एस. एन. शर्मा

पत्न श्री के. सी. शर्मा

निवासी हाउस नं. 2181, सेक्टर - 16, फरीदाबाद, हरियाणा

द्वारा अपनी योग्यताओं और अनुभव का उत्तुष्ट प्रमाण प्रस्तुत करने के फलस्वरूप  
 खनिज रियायत नियमावली, 1960 के नियम 22(सी) के अंतर्गत उन्हें एतद्वारा खनन  
 योजना तैयार करने हेतु योग्य व्यक्ति के रूप में मान्यता प्रदान की जाती है।

उनका पंजीयन क्रमांक

RAP/DDN/135/2001/A

है।

या मान्यता दिनांक 29.03.2011

की प्रमदल

होने वाली ~~दस्तावेज~~ की अवधि के लिए वैध है।

स्थान : देहरादून

दिनांक : 30.03.2011

*[Signature]*

क्षेत्रीय खान नियंत्रक  
 भारतीय खान ब्यूरो  
 Regional Controller of Mines  
 भारतीय खान ब्यूरो  
 Indian Bureau of Mines



## CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Mine Closure Plan in respect of minor mineral mines of "Stone along with Associated minor minerals" of AtelaKalan over an area of 54 hectares, Tehsil - Dadri, District - Bhiwani (Haryana) of M/s MSK(JV), S-571, GK-II, New Delhi is being prepared by S.N. Sharma ( Recognized Qualified Person).

I request The Director Mines and Geology, Haryana to make further correspondence regarding modification of the mining plan with the said RQP on the following address:-

S.N. Sharma (RQP/DDN/0135/2001-A)  
282, FF, Sector-11D, Faridabad-121006

Also send copies of all correspondence at our head office on the following address:-

MSK - 'JV'  
S-571, Greater Kailash-II, New Delhi-110048

I also authorize Shri S.N. Sharma to make correspondence with your office.

I hereby undertake that the Mining Plan in respect of this area prepared by RQP be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

This is to declare that the Mining Plan & Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed.

Place: New Delhi

Date: 15.01.2014



For MSK - 'JV'

  
Lead Partner



# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/01 **Report No.:** VEL/A/2103/11/031  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, **Party Reference No.:** NIL  
New Delhi-110048 **Reporting Date:** 16/03/2021  
**Name & Address of Party:** Stone Mine of AtelaKalan, Village- **Period of Analysis:** 11/03/2021 to 16/03/2021  
AtelaKalan, Tehsil- Charkhi Dadri, District- **Receipt Date:** 11/03/2021  
Bhiwani (HR)  
**Sample Description :** Ambient Air Quality Monitoring

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Near Mine Site  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 09:00 AM to 09:00 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human, Vehicular & mining related Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

### TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	50.46	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	87.43	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	26.21	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	13.40	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3(i)]18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SPM ANALYST  
(Tested By)



**NOTE:** a) The results listed refer only to the tested samples & applicable parameters  
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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/02  
**Issued To:** M/s MSK (JV)  
S-571, Greater Kailash Part- II,  
New Delhi-110048  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village-  
AtelaKalan, Tehsil- Charkhi Dadri,  
District- Bhiwani (HR)  
**Sample Description :** Ambient Air Quality Monitoring

**Report No.:** VEL/A/2103/11/032  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021  
**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : **Loading Area**  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : **10/03/2021 to 11/03/2021**  
**Time of Monitoring** : 09:30 AM to 09:30 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

### TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	<b>51.10</b>	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	<b>92.78</b>	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	<b>27.63</b>	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	<b>9.47</b>	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3(i)]18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SPM ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/03 **Report No.:** VEL/A/2103/11/033  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**Name & Address of Party:** S-571, Greater Kailash Part- II, New Delhi-110048 **Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021  
**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021  
**Sample Description :** Ambient Air Quality Monitoring

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : 100 mtr from mine site  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 10:00 AM to 10:00 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Stone loading activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

### TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	51.89	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	86.74	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	27.23	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	13.45	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3(i)]18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SPM ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/04 **Report No.:** VEL/A/2103/11/034  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, **Party Reference No.:** NIL  
New Delhi-110048 **Reporting Date:** 16/03/2021  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- **Period of Analysis:** 11/03/2021 to 16/03/2021  
AtelaKalan, Tehsil- Charkhi Dadri, **Receipt Date:** 11/03/2021  
District- Bhiwani (HR)  
**Sample Description :** Ambient Air Quality Monitoring

### General Information:-

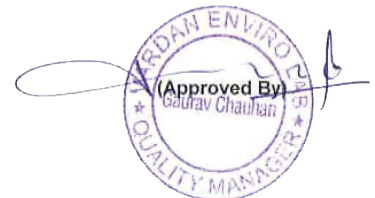
**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Haul Road  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 10:15 AM to 10:15 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Stone transportation activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

### TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	52.96	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	87.23	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	24.20	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	14.78	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3(i)]18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SR. ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/05  
**Issued To:** M/s MSK (JV)  
S-571, Greater Kailash Part- II,  
New Delhi-110048  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village-  
AtelaKalan, Tehsil- Charkhi Dadri,  
District- Bhiwani (HR)  
**Sample Description :** Ambient Air Quality Monitoring

**Report No.:** VEL/A/2103/11/035  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021  
**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village- Atela Kalan  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 10:20 AM to 10:20 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

### TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	44.63	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	81.21	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	22.58	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	12.20	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3(i)]18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SR ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/06 **Report No.:** VEL/A/2103/11/036  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, **Party Reference No.:** NIL  
New Delhi-110048 **Reporting Date:** 16/03/2021  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village-  
AtelaKalan, Tehsil- Charkhi Dadri, **Period of Analysis:** 11/03/2021 to 16/03/2021  
District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** Ambient Air Quality Monitoring

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village-Bilawal  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 10:35 AM to 10:35 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

## TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	45.10	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	84.47	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	21.63	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	11.78	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3 (i) 18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SR. ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/07  
**Issued To:** M/s MSK (JV)  
**Name & Address of Party:** S-571, Greater Kailash Part- II, New Delhi-110048  
**Sample Description :** Ambient Air Quality Monitoring

**Report No.:** VEL/A/2103/11/037  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021  
**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021

**Name & Address of Party:** Stone Mine of AtelaKalan , Village-AtelaKalan, Tehsil- Charkhi Dadri, District- Bhiwani (HR)

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village-Atela Khurd  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 10:40 AM to 10:40AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

## TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	43.10	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	72.96	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	21.00	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	12.36	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3 (i)] 18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SR. ANALYST  
(Tested By)



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# Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/A/08 **Report No.:** VEL/A/2103/11/038  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, **Party Reference No.:** NIL  
New Delhi-110048 **Reporting Date:** 16/03/2021  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village-  
AtelaKalan, Tehsil- Charkhi Dadri, **Period of Analysis:** 11/03/2021 to 16/03/2021  
District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** Ambient Air Quality Monitoring

### General Information:-

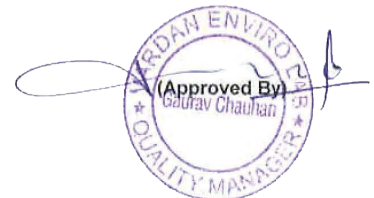
**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village-Dohka Moji  
**Instrument Used** : RDS & FPS sampler with all Accessories  
**Instrument Code** : --  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 11:00 AM to 11:00 AM  
**Ambient Temperature (° C)** : Min.18.0°C, Max.28.0°C  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No  
**Sampling & Analysis Protocol** : IS-5182  
**Parameter Required** : PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>

## TEST RESULTS

S. No.	Parameter	Protocol	Unit	Result	NAAQS*
1.	Particulate Matter (PM <sub>2.5</sub> )	#SOP No. VEL/SOP/01, Section No. SP 63	µg/m <sup>3</sup>	40.78	60
2.	Particulate Matter (PM <sub>10</sub> )	IS: 5182 (P-23), Gravimetric Method	µg/m <sup>3</sup>	78.63	100
3.	Nitrogen Dioxide (NO <sub>2</sub> )	IS: 5182 (P-6), Jacob & Hochheiser	µg/m <sup>3</sup>	20.56	80
4.	Sulphur Dioxide (SO <sub>2</sub> )	IS: 5182 (P-2) Modified West and Gaeke	µg/m <sup>3</sup>	11.20	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [PartIIsec.3 (i) 18.11.2009  
#As per Laboratory Standard Operating Procedure.

MEENU KAUSHIK  
SPM ANALYST  
(Tested By)



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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/AN/01 **Report No.:** VEL/AN/2103/11/031  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Reporting Date:** 16/03/2021  
**Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Near Mine Site  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human, Vehicular & mining related Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	75.5	67.7	dB(A)
2.	$L_{min}$	IS 9989	62.8	54.3	dB(A)
3.	$L_{eq}$	IS 9989	69.6	63.9	dB(A)
4.	#DGMS Limits in dB(*A) Leq ( Mining Area)	--	75.0	70.0	dB(A)

#DGMS:-Directorate General of Mine Safety.\*A “decibel” is a unit in which noise is measured.

MEENU KAUSHIK  
SPL ANALYST  
(Tested By)



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## Test Report

**Sample Number:** VEL/ MSK/AN/02 **Report No.:** VEL/AN/2103/11/032  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : **Loading Area**  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : **10/03/2021 to 11/03/2021**  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	79.8	73.1	dB(A)
2.	$L_{min}$	IS 9989	65.6	56.4	dB(A)
3.	$L_{eq}$	IS 9989	72.6	68.2	dB(A)
4.	#DGMS Limits in dB(*A) Leq ( Mining Area)	--	75.0	70.0	dB(A)

#DGMS:-Directorate General of Mine Safety.\*A “decibel” is a unit in which noise is measured.

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SR. ANALYST  
(Tested By)



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## Test Report

**Sample Number:** VEL/ MSK/AN/03 **Report No.:** VEL/AN/2103/11/033  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, New Delhi-110048 **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : 100 mtr from mine site  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021to 11/03/2021  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Stone transportation activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	78.7	74.5	dB(A)
2.	$L_{min}$	IS 9989	63.3	56.2	dB(A)
3.	$L_{eq}$	IS 9989	71.4	66.6	dB(A)
4.	#DGMS Limits in dB(*A) Leq ( Mining Area)	--	75.0	70.0	dB(A)

#DGMS:-Directorate General of Mine Safety.\*A “decibel” is a unit in which noise is measured.

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## Test Report

**Sample Number:** VEL/MSK/AN/04 **Report No.:** VEL/AN/2103/11/034  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : **Haul Road**  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : **10/03/2021 to 11/03/2021**  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Mining activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	80.1	75.7	dB(A)
2.	$L_{min}$	IS 9989	64.6	55.2	dB(A)
3.	$L_{eq}$	IS 9989	72.7	67.5	dB(A)
4.	#DGMS Limits in dB(*A) Leq ( Mining Area)	--	75.0	70.0	dB(A)

#DGMS:-Directorate General of Mine Safety.\*A “decibel” is a unit in which noise is measured.

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# Vardan EnviroLab

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## Test Report

**Sample Number:** VEL/MSK/AN/05 **Report No.:** VEL/AN/2103/11/035  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan, Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village-Atela Kalan  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Control measure if Any** : Human & Vehicular Activities  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	54.2	46.4	dB(A)
2.	$L_{min}$	IS 9989	42.6	37.8	dB(A)
3.	$L_{eq}$	IS 9989	47.1	41.9	dB(A)
4.	CPCB Limits in dB (*A) Leq ( Residential Area)	--	55.0	45.0	dB(A)

Note- \*A "decibel" is a unit in which noise is measured.

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SR ANALYST  
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# Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/ MSK/AN/06 **Report No.:** VEL/AN/2103/11/036  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
S-571, Greater Kailash Part- II, New Delhi-110048 **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : Village-Bilawal  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : 10/03/2021 to 11/03/2021  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	56.8	44.7	dB(A)
2.	$L_{min}$	IS 9989	43.5	31.3	dB(A)
3.	$L_{eq}$	IS 9989	49.6	37.8	dB(A)
4.	CPCB Limits in dB (* A ) Leq ( Residential Area)	--	55.0	45.0	dB(A)

Note- \*A "decibel" is a unit in which noise is measured.

MEENU KAUSHIK  
SR ANALYST  
(Tested By)



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ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/ MSK/AN/07 **Report No.:** VEL/AN/2103/11/037  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : **Village- Atela Khurd**  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : **10/03/2021 to 11/03/2021**  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	58.6	46.1	dB(A)
2.	$L_{min}$	IS 9989	42.4	33.7	dB(A)
3.	$L_{eq}$	IS 9989	52.3	38.5	dB(A)
4.	CPCB Limits in dB (* A ) $L_{eq}$ (Residential Area)	--	55.0	45.0	dB(A)

Note- \*A "decibel" is a unit in which noise is measured.

MEENU KAUSHIK  
SPL ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/ MSK/AN/08 **Report No.:** VEL/AN/2103/11/038  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**S-571, Greater Kailash Part- II, New Delhi-110048** **Party Reference No.:** NIL  
**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, **Reporting Date:** 16/03/2021  
Tehsil- Charkhi Dadri, District- Bhiwani (HR) **Receipt Date:** 11/03/2021  
**Sample Description :** AMBIENT NOISE LEVEL MONITORING

### General Information:-

**Sample collected by** : Vardan EnviroLab Representative  
**Sampling Location** : **Village- Dohka Moji**  
**Instrument Used** : Sound Level Meter  
**Instrument Calibration Status** : Calibrated  
**Meteorological condition during monitoring** : Clear Sky  
**Date of Monitoring** : **10/03/2021 to 11/03/2021**  
**Time of Monitoring** : 06:00 AM to 06:00AM  
**Surrounding Activity** : Human & Vehicular Activities  
**Scope of Monitoring** : Regulatory Requirement  
**Control Measure if Any** : No Any  
**Sampling & Analysis Protocol** : IS-9989  
**Sampling Duration** : 24 Hours  
**Parameter Required** :  $L_{max}$ ,  $L_{min}$ ,  $L_{eq}$

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	$L_{max}$	IS 9989	59.5	48.8	dB(A)
2.	$L_{min}$	IS 9989	44.6	36.1	dB(A)
3.	$L_{eq}$	IS 9989	51.7	42.6	dB(A)
4.	CPCB Limits in dB (* A ) Leq ( Residential Area)	--	55.0	45.0	dB(A)

Note- \*A "decibel" is a unit in which noise is measured.

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SR ANALYST  
(Tested By)



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Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/S/01  
**Issued To:** M/s MSK (JV)  
S-571, Greater Kailash Part- II,  
New Delhi-110048

**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan,  
Tehsil- Charkhi Dadri, District- Bhiwani (HR)

**Sample Description:** Soil Sample  
**Sampling Location:** Near Mine Site  
**Sample Collected by:** Vardan EnviroLab Representative  
**Sampling & Analysis Protocol:** IS 2720, USEPA 3050B & USDA

**Report No.:** VEL/S/2103/11/011  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021

**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021  
**Sampling Date:** 11/03/2021  
**Type of Sampling:** Composite  
**Sampling Quantity:** 2.0 Kg  
**Packing Status:** Temp Sealed

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.58	--
2.	Conductivity	IS:14767 by Conductivity meter	0.278	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty	--
4.	Color	SOP , SP-78,Issue No.-01 & Issue Date-14/02/2013	Light Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01 & Issue Date-14/02/2013	31.23	%
6.	Bulk density	SOP , SP-80,Issue No.-01 & Issue Date-14/02/2013	1.48	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01 & Issue Date-14/02/2013	52.63	mg/100g
8.	Calcium as Ca	SOP , SP-82,Issue No.-01 & Issue Date-14/02/2013	18.84	mg/100g
9.	Sodium as Na	SOP , SP-84,Issue No.-01 & Issue Date-14/02/2013	34.58	mg/kg
10.	Potassium as K	SOP , SP-84,Issue No.-01 & Issue Date-14/02/2013	52.36	kg/hect.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.42	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01 & Issue Date-14/02/2013	18.2	mg/100g
13.	Available Nitrogen as N	IS:14684 Distillation Method	164.20	kg./hect.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01 & Issue Date-14/02/2013	18.57	kg./hect.
15.	Zinc (as Zn)	USEPA 3050B	4.60	mg/kg
16.	Manganese (as Mn )	USEPA 3050B	3.36	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.81	mg/kg
18.	Cadmium (as Cd )	USEPA 3050B	0.63	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	1.24	mg/kg
20.	Copper (as Cu )	USEPA 3050B	4.20	mg/kg

\*SOP-Laboratory standard operating procedure.

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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/S/02  
**Issued To:** M/s MSK (JV)  
S-571, Greater Kailash Part- II,  
New Delhi-110048

**Name & Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan, Tehsil-  
Charkhi Dadri, District- Bhiwani (HR)

**Sample Description:** Soil Sample  
**Sampling Location:** Village -Bilawal  
**Sample Collected by:** Vardan EnviroLab Representative  
**Sampling & Analysis Protocol:** IS 2720, USEPA 3050B & USDA

**Report No.:** VEL/S/2103/11/012  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 16/03/2021

**Period of Analysis:** 11/03/2021 to 16/03/2021  
**Receipt Date:** 11/03/2021  
**Sampling Date:** 11/03/2021  
**Type of Sampling:** Composite  
**Sampling Quantity:** 2.0 Kg  
**Packing Status:** Temp Sealed

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.82	--
2.	Conductivity	IS:14767 by Conductivity meter	0.281	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Light Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	25.60	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.64	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	41.72	mg/100g
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	18.81	mg/100g
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	22.18	mg/kg
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	51.78	kg/hect.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.43	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	7.69	mg/100g
13.	Available Nitrogen as N	IS:14684 Distillation Method	184.28	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	31.76	kg./hec.
15.	Zinc (as Zn)	USEPA 3050B	4.39	mg/kg
16.	Manganese (as Mn )	USEPA 3050B	3.25	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.57	mg/kg
18.	Cadmium (as Cd )	USEPA 3050B	0.70	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	1.56	mg/kg
20.	Copper (as Cu )	USEPA 3050B	3.45	mg/kg

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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)

Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)

ISO 9001 | ISO 14001 | ISO 45001

## Test Report

<b>Sample Number:</b>	VEL/MSK/W/01	<b>Report No.:</b>	VEL/W/2011/07/011
<b>Issued To:</b>	M/s MSK (JV) S-571, Greater Kailash Part- II, New Delhi-110048	<b>Format No.:</b>	7.8 F-01
<b>Name and Address of Party:</b>	Stone Mine of Atela Kalan ,Village- AtelaKalan, Tehsil- Charkhi Dadri, District- Bhiwani (HR)	<b>Party Reference No.:</b>	NIL
<b>Sample Description:</b>	Ground Water Sample	<b>Reporting Date:</b>	13/11/2020
<b>Sampling Location:</b>	Near Mine site	<b>Period of Analysis:</b>	07/11/2020 to 13/11/2020
<b>Sample Collected by:</b>	Vardan Enviro Lab Representative	<b>Receipt Date:</b>	07/11/2020
<b>Sampling &amp; Analysis Protocol:</b>	IS & APHA	<b>Sampling Date:</b>	07/11/2020
		<b>Type of Sampling:</b>	Grab
		<b>Sampling Quantity:</b>	2.0 Ltr.
		<b>Preservation:</b>	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H <sup>+</sup> B Electrometric Method	7.38	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	*BDL (**DL 0. 1 NTU)	NTU	1	5
4.	Odour	APHA, 2150 B , Threshold Test Method	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	APHA , 2340 C, EDTA Titrimetric Method	153.45	mg/l	200	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	42.20	mg/l	75	200
8.	Alkalinity as CaCO <sub>3</sub>	APHA , 2320 B, Titrimetric Method	144.36	mg/l	200	600
9.	Chloride as Cl	APHA, 4500-Cl <sup>-</sup> B, Argentometric Method	52.18	mg/l	250	1000
10.	#Cyanide as CN	APHA , 4500 CN <sup>-</sup> D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	11.70	mg/l	30	100
12.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	415.00	mg/l	500	2000
13.	Sulphate as SO <sub>4</sub>	APHA , 4500 E, Turbidimetric Method	42.47	mg/l	200	400
14.	Fluoride as F	APHA , 4500-F <sup>-</sup> D, SPADNS Method	0.28	mg/l	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	IS 3025 (P-34) ,Chromotropic Method	4.30	mg/l	45	No Relaxation
16.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.21	mg/l	0.3	No relaxation
17.	Aluminium as Al	APHA , 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA, 4500B C, Carmine Method	0.36	mg/l	0.5	1
19.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.05	No Relaxation

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# Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)

ISO 9001 | ISO 14001 | ISO 45001

## Test Report

Sample No.: VEL/MSK/W/01			Report No: VEL/W/2011/07/011			
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
21.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
23.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.32	mg/l	5	15
24.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.18	mg/l	0.05	1.5
25.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
26.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.003 mg/l)	mg/l	0.003	No Relaxation
27.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
28.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
29.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL (**DL 0.001 mg/l)	mg/l	0.01	0.05
30.	Mercury as Hg	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
31.	Total Coliform	IS 1622,1981, RA-2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample	
32.	E. Coli	IS 1622,1981, RA-2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - \*BDL-Below Detection Limit, \*\*DL- Detection Limit

#These parameter are not covered in our NABL scope.

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(Tested By)



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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)

ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/W/02 **Report No.:** VEL/W/2011/07/012  
**Issued To:** M/s MSK (JV) **Format No.:** 7.8 F-01  
**Name and Address of Party:** S-571, Greater Kailash Part- II, New Delhi-110048 **Party Reference No.:** NIL  
**Stone Mine of AtelaKalan , Village- AtelaKalan,** **Reporting Date:** 13/11/2020  
**Tehsil- Charkhi Dadri, District- Bhiwani (HR)** **Period of Analysis:** 07/11/2020 to 13/11/2020  
**Sample Description:** Ground Water Sample **Receipt Date:** 07/11/2020  
**Sampling Location:** Village -Bilawal **Sampling Date:** 07/11/2020  
**Sample Collected by:** Vardan Enviro Lab Representative **Type of Sampling:** Grab  
**Sampling & Analysis Protocol:** IS & APHA **Preservation:** 2.0 Ltr. Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H <sup>+</sup> B Electrometric Method	7.74	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	*BDL (**DL 0. 1 NTU)	NTU	1	5
4.	Odour	APHA, 2150 B , Threshold Test Method	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	APHA , 2340 C, EDTA Titrimetric Method	136.39	mg/l	200	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	35.58	mg/l	75	200
8.	Alkalinity as CaCO <sub>3</sub>	APHA , 2320 B, Titrimetric Method	128.67	mg/l	200	600
9.	Chloride as Cl	APHA, 4500-Cl <sup>-</sup> B, Argentometric Method	42.50	mg/l	250	1000
10.	#Cyanide as CN	APHA , 4500 CN <sup>-</sup> D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	11.857	mg/l	30	100
12.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	385.00	mg/l	500	2000
13.	Sulphate as SO <sub>4</sub>	APHA , 4500 E, Turbidimetric Method	40.58	mg/l	200	400
14.	Fluoride as F	APHA , 4500-F D, SPADNS Method	0.23	mg/l	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	IS 3025 (P-34) ,Chromotropic Method	5.47	mg/l	45	No Relaxation
16.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.20	mg/l	0.3	No relaxation
17.	Aluminium as Al	APHA , 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA, 4500B C, Carmine Method	0.32	mg/l	0.5	1
19.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.05	No Relaxation

MEENU KAUSHIK  
SR. ANALYST  
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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)

ISO 9001 | ISO 14001 | ISO 45001

## Test Report

Sample No.: VEL/MSK/W/02				Report No: VEL/W/2011/07/012		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
21.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
23.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.38	mg/l	5	15
24.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.17	mg/l	0.05	1.5
25.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
26.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.003 mg/l)	mg/l	0.003	No Relaxation
27.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.1mg/l)	mg/l	0.01	No Relaxation
28.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
29.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
30.	Mercury as Hg	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
31.	Total Coliform	IS 1622,1981, RA-2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample	
32.	E. Coli	IS 1622,1981, RA-2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - \*BDL-Below Detection Limit, \*\*DL- Detection Limit

#These parameter are not covered in our NABL scope.

MEENU KAUSHIK  
SR ANALYST  
(Tested By)



NOTE: a) The results listed refer only to the tested samples & applicable parameters  
b) Total liabilities of our lab will be restricted to the invoice amount only  
c) The sample will be destroyed after retention time unless otherwise specified  
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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

<b>Sample Number:</b>	VEL/MSK/W/01	<b>Report No.:</b>	VEL/W/2101/08/011
<b>Issued To:</b>	M/s MSK (JV) S-571, Greater Kailash Part- II, New Delhi-110048	<b>Format No.:</b>	7.8 F-01
<b>Name and Address of Party:</b>	Stone Mine of Atela Kalan , Village- AtelaKalan, Tehsil- Charkhi Dadri, District- Bhiwani (HR)	<b>Party Reference No.:</b>	NIL
<b>Sample Description:</b>	Ground Water Sample	<b>Reporting Date:</b>	14/01/2021
<b>Sampling Location:</b>	Near Mine site	<b>Period of Analysis:</b>	08/01/2021 to 14/01/2021
<b>Sample Collected by:</b>	Vardan EnviroLab Representative	<b>Receipt Date:</b>	08/01/2021
<b>Sampling &amp; Analysis Protocol:</b>	IS & APHA	<b>Sampling Date:</b>	08/01/2021
		<b>Type of Sampling:</b>	Grab
		<b>Sampling Quantity:</b>	2.0 Ltr.
		<b>Preservation:</b>	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H <sup>+</sup> B Electrometric Method	7.41	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	*BDL (**DL 0. 1 NTU)	NTU	1	5
4.	Odour	APHA, 2150 B , Threshold Test Method	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	APHA , 2340 C, EDTA Titrimetric Method	143.47	mg/l	200	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	38.20	mg/l	75	200
8.	Alkalinity as CaCO <sub>3</sub>	APHA , 2320 B, Titrimetric Method	128.36	mg/l	200	600
9.	Chloride as Cl	APHA, 4500-Cl <sup>-</sup> B, Argentometric Method	52.00	mg/l	250	1000
10.	#Cyanide as CN	APHA , 4500 CN <sup>-</sup> D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	11.70	mg/l	30	100
12.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	423.00	mg/l	500	2000
13.	Sulphate as SO <sub>4</sub>	APHA , 4500 E, Turbidimetric Method	21.69	mg/l	200	400
14.	Fluoride as F	APHA , 4500-F <sup>-</sup> D, SPADNS Method	0.23	mg/l	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	IS 3025 (P-34) ,Chromotropic Method	6.58	mg/l	45	No Relaxation
16.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.21	mg/l	0.3	No relaxation
17.	Aluminium as Al	APHA , 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA, 4500B C, Carmine Method	0.32	mg/l	0.5	1
19.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.05	No Relaxation

MEENU KAUSHIK  
SR ANALYST  
(Tested By)



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# Vardan EnviroLab

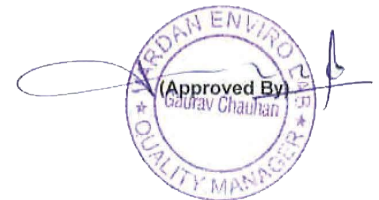
Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

Sample No.: VEL/MSK/W/01			Report No: VEL/W/2101/08/011			
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
21.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
23.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.38	mg/l	5	15
24.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.19	mg/l	0.05	1.5
25.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
26.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.003 mg/l)	mg/l	0.003	No Relaxation
27.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
28.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
29.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL (**DL 0.001mg/l)	mg/l	0.01	0.05
30.	Mercury as Hg	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
31.	Total Coliform	IS 1622,1981, RA-2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample	
32.	E. Coli	IS 1622,1981, RA-2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - \*BDL-Below Detection Limit, \*\*DL- Detection Limit  
#These parameter are not covered in our NABL scope.

MEENU KAUSHIK  
SR ANALYST  
(Tested By)



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# Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

**Sample Number:** VEL/MSK/W/02  
**Issued To:** M/s MSK (JV)  
S-571, Greater Kailash Part- II, New Delhi-110048

**Report No.:** VEL/W/2101/08/012  
**Format No.:** 7.8 F-01  
**Party Reference No.:** NIL  
**Reporting Date:** 14/01/2021  
**Period of Analysis:** 08/01/2021 to 14/01/2021

**Name and Address of Party:** Stone Mine of AtelaKalan , Village- AtelaKalan,  
Tehsil- Charkhi Dadri, District- Bhiwani (HR)

**Receipt Date:** 08/01/2021  
**Sampling Date:** 08/01/2021  
**Type of Sampling:** Grab  
**Sampling Quantity:** 2.0 Ltr.  
**Preservation:** Refrigerated

**Sample Description:** Ground Water Sample  
**Sampling Location:** Village -Bilawal  
**Sample Collected by:** Vardan EnviroLab Representative  
**Sampling & Analysis Protocol:** IS & APHA

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H <sup>+</sup> B Electrometric Method	7.56	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	*BDL (**DL 0. 1 NTU)	NTU	1	5
4.	Odour	APHA, 2150 B , Threshold Test Method	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as CaCO <sub>3</sub>	APHA , 2340 C, EDTA Titrimetric Method	132.50	mg/l	200	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	37.69	mg/l	75	200
8.	Alkalinity as CaCO <sub>3</sub>	APHA , 2320 B, Titrimetric Method	127.47	mg/l	200	600
9.	Chloride as Cl	APHA, 4500-Cl <sup>-</sup> B, Argentometric Method	45.30	mg/l	250	1000
10.	#Cyanide as CN	APHA , 4500 CN <sup>-</sup> D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	9.34	mg/l	30	100
12.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	374.00	mg/l	500	2000
13.	Sulphate as SO <sub>4</sub>	APHA , 4500 E, Turbidimetric Method	34.12	mg/l	200	400
14.	Fluoride as F	APHA , 4500-F D, SPADNS Method	0.24	mg/l	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	IS 3025 (P-34) ,Chromotropic Method	6.54	mg/l	45	No Relaxation
16.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.17	mg/l	0.3	No relaxation
17.	Aluminium as Al	APHA , 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA, 4500B C, Carmine Method	0.30	mg/l	0.5	1
19.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.05	No Relaxation

MEENU KAUSHIK  
SPANALYST  
(Tested By)



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Branch Off: Plot No. 24 & 25, Narayan Vihar, Block-B, Jaipur - 302035 (Rajasthan)  
ISO 9001 | ISO 14001 | ISO 45001

## Test Report

Sample No.: VEL/MSK/W/02				Report No: VEL/W/2101/08/012		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
21.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
22.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
23.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.40	mg/l	5	15
24.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.19	mg/l	0.05	1.5
25.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
26.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.003 mg/l)	mg/l	0.003	No Relaxation
27.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.01mg/l)	mg/l	0.01	No Relaxation
28.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
29.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
30.	Mercury as Hg	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
31.	Total Coliform	IS 1622,1981, RA-2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample	
32.	E. Coli	IS 1622,1981, RA-2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

**Note:** - \*BDL-Below Detection Limit, \*\*DL- Detection Limit  
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MEENU KAUSHIK  
SR. ANALYST  
(Tested By)



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Mines at Atela Kalan/Jhojhu Kalan in  
Distt. Charkhi Dadri, Haryana

Mining of Stone alongwith Minor Minerals

Letter No. PBR/278/2020

08/12/2020

Date: 19/09/2020

To

The Director,  
Ministry of Environment, Forests & Climate Change (IA Division),  
Indira Paryavaran Bhavan, Jor Bagh Road,  
New Delhi

**Sub: Submission of Six Monthly Compliance Report of Stipulated Conditions of Environmental Clearance for Stone Mining Project of M/s MSK (JV) with Production capacity of 6 MTPA located at Vill-Atela Kalan, Tehsil- Charkhi Dadri, District - Charkhi Dadri, Haryana (54 ha) for submission period of December, 2020.**

**Ref. No. J-11015/74/2014-IA.II(M) dated 11<sup>th</sup> June 2015**

Sir,

In accordance to the EC letter as above stated received from Ministry of Environment, Forests & Climate Change vide letter **J-11015/74/2014-IA.II (M) dated 11<sup>th</sup> June 2015**, We are submitting herewith six monthly compliance report of stipulated conditions of Environment Clearance (Soft only) along with laboratory analysis results the specific and general conditions and relevant annexure. We fully assure you that we will comply with all conditions as specified in the Environment clearance granted us.

**For M/s MSK (JV)**

  
Authorised Signatory.

Name - Umesh Singh  
Designation- Mining Manager  
E-mail - info@msk JV.in  
Contact No. - 7027850711

EHT257761511N INR16972725776151  
SP GURGAON SORTING OFFICE - DELHI S. COUNTER (122)  
Counter No:3,16/12/2020,16150  
To:03R,MOEF & CC  
PIN:110003, Lodi Road RD  
From:MSK JV,SK 2  
Wt:48gms  
Amt:17.70 (Cash)Tax:2.70  
<Track on www.indiapost.gov.in>  
<Dial 18002666968> <Wear Masks, Stay Safe>

Copy to:

1. The Director, Ministry of Environment & Forests, Northern Regional Office, Sector-31, Dakshin Marg, Chandigarh-160030
2. The Member Secretary, Haryana State Pollution Control Board (HSPCB), Sector-6, Panchkula

**Ward No. 1, MC Colony, Charkhi Dadri, Haryana - 127306**  
**Telephone : 7027800700, E-mail : info@msk JV.in**





Mines at Atela Kalan/Jhojhu Kalan in  
Distt. Charkhi Dadri, Haryana

Mining of Stone alongwith Minor Minerals

Letter No. PBR/2020/2021

Date: 19/09/2020

To

The Director,  
Ministry of Environment, Forests & Climate Change (IA Division),  
Indira Paryavaran Bhavan, Jor Bagh Road,  
New Delhi

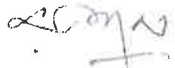
**Sub: Submission of Six Monthly Compliance Report of Stipulated Conditions of Environmental Clearance for Stone Mining Project of M/s MSK (JV) with Production capacity of 6 MTPA located at Vill-Atela Kalan, Tehsil- Charkhi Dadri, District – Charkhi Dadri, Haryana (54 ha) for submission period of December, 2020.**

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For M/s MSK (JV)

  
Authorised Signatory.

Name - Umesh Singh  
Designation- Mining Manager  
E-mail - info@mskjav.in  
Contact No. - 7027850711



Copy to:

1. The Director, Ministry of Environment & Forests, Northern Regional Office, Sector-31, Dakshin Marg, Chandigarh-160030
2. The Member Secretary, Haryana State Pollution Control Board (HSPCB), Sector-6, Panchkula

प्राप्त किया/Received  
पर्यावरण, वन (IA) कलकत्ता क्षेत्रीय कार्यालय  
Ministry of Environment, Forests & Climate Change  
Northern Regional Office

**Ward No. 1, MC Colony, Charkhi Dadri, Haryana - 127306**  
**Telephone : 7027800700, E-mail : info@mskjav.in**



Mines at Atela Kalan/Jhojhu Kalan in  
Distt. Charkhi Dadri, Haryana

Mining of Stone alongwith Minor Minerals

Letter No. MSK/JV/2020/1

08/12/2020  
Date: 19/09/2020

To

The Director,  
Ministry of Environment, Forests & Climate Change (IA Division),  
Indira Paryavaran Bhavan, Jor Bagh Road,  
New Delhi

**Sub:Submission of Six Monthly Compliance Report of Stipulated Conditions of Environmental Clearance for Stone Mining Project of M/s MSK (JV) with Production capacity of 6 MTPA located at Vill-Atela Kalan, Tehsil- Charkhi Dadri, District - Charkhi Dadri, Haryana (54 ha) for submission period of December, 2020.**

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**For M/s MSK (JV)**

  
Authorised Signatory.

Name - Umesh Singh  
Designation- Mining Manager  
E-mail - info@mskjb.in  
Contact No. - 7027850711

Haryana State Pollution Control Board  
C-11, Sector 6 Panchkula

  
17/12/2020

Copy to:

1. The Director, Ministry of Environment & Forests, Northern Regional Office, Sector-31, Dakshin Marg, Chandigarh-160030
2. The Member Secretary, Haryana State Pollution Control Board (HSPCB), Sector-6, Panchkula

**Ward No. 1, MC Colony, Charkhi Dadri, Haryana - 127306**  
**Telephone : 7027800700, E-mail : info@mskjb.in**

# MSK - "JV"

Mines at Atela Kalan in Tehsil Dadri  
Distt. Bhiwani, Haryana

**Manufacturer of Sand & Quality Aggregates**

To

Mr. S.C. Gupta  
Rohtak Road,  
Charkhi Dadri,  
Haryana.

**Subject:- Appointment Letter.**

Dear Sir,

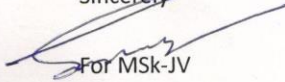
We are please to confirm your appointment in our company w.e. from 1.10.2015.

Below mention are the term of your appointment:

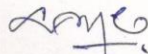
- Your position will be a Doctor to be posted at Atela Mines, Charkhi Dadri site for 2 days in a week. You will be expected to provide occupational Health Services to our workers/ staffs engaged at mines at Atela for their Health Check up, Diagnosis and consultation including all compliance report of medical Examination under rule 29B. of mines act.
- Per visit Doctor fee Rs. 2000/- will be paid. Company will provide vehicles for picking up & dropping at the time of visit.
- Charges of lab testing which is required for compliance @ Rs 750/- per head will be paid.
- The company shall be intitled to terminate your services with 30 days notice period.

Please indicate your understanding & acceptance of the above mention term & condition by signing and returning the duplicate copy of the letter.

Sincerely



For MSK-JV



Authorized Signatory

I have carefully read the above term & condition and that are acceptable to me in full.

