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# ASD - RKC J.V.

VILLAGE - KHERI BATTAR, TEHSIL - CHARKHI DADRI, DISTT. - BHIWANI (HR.)

Ref.

Date : \_\_\_\_\_  
Date: \_\_\_\_\_

To

The Director, Ministry of Environment, Forests & Climate Change,  
Northern Regional Office,  
Sector-31, Dakshin Marg,  
Chandigarh-160030

**Sub: Submission of Six Monthly Compliance Report of Stipulated Conditions of Environment Clearance for proposed stone along with associates Minor Minerals at Kheribattar plot -2 over an area 42.0 Ha tehsil- Dadri District: Bhiwani, Haryana for Submission period of December (April-September) 2019.**

**Ref. No. SEIAA/HR/2016/875 dated: 04.10.2016**

Sir,

In accordance to the EC letter as above stated received from State Environment Impact Assessment Authority (SEIAA) vide letter SEIAA/HR/2016/875 dated: 04.10.2016. 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 ASD RKC JV.

Authorised Signatory,

Name - Sanjeev Kumar Singh  
Designation- Head Project  
E-mail - singh\_sanjiv@rediffmail.com  
Contact No.- 9833080030

Copy to:

1. State Environment Impact Assessment Authority (SEIAA), Bay No. 55-58, Paryatan Bhavan, Sector-2, Panchkula, Haryana.
2. The Chairmen, Haryana State Pollution Control Board (HSPCB), Sector-6, Panchkula

**SIX MONTHLY ENVIRONMENTAL COMPLIANCE MONITORING REPORT OF  
STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE  
(Period-April 2019 to September 2019)**

**FOR**

**“Stone along with Associated Minor Minerals at Kheribattar Plot-2,  
Teshsil-Dadri, District-Bhiwani,  
Haryana.**

**SUBMITTED BY:**

**M/s ASD RKC J.V.**

**40, Laxmi Nagar, Near Sub City Centre,**

**HiranMagri, Sector-8, Udaipur,**

**Rajasthan-313002**

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# 1

## INTRODUCTION

### 1.1 About the Project

M/s ASD RKC J.V. has obtained the Environmental Clearance Letter from State Environment Impact Assessment Authority, Haryana for the Mining of “Stone along with Associated Minor Minerals” at Kheribattar Plot-2, over an area of 42.0 Ha. in Tehsil-Dadri, District-Bhiwani, Haryana Vide Ref. No. SEIAA/HR/2016/875 on dated: 04.10.2016.

The Total area of the mining site is 42.0 Ha. The total cost of the project is 4.23 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/MP/Kheribattar-2/2015/478-481 dated 12.01.2016.

### 1.2 Purpose of the Report

As per the “Sub Para (ii)” of “Para 10” of EIA Notification 2006, it is stated that “It shall be mandatory for the project management to submit six monthly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year” and as per compliance of condition mentioned in Environment Clearance Letter (i.e. Part B General Condition, point number IX), 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 MoEF & CC, Delhi, MoEF & CC, Chandigarh and HSPCB, Panchkula. Various scheduled Site Visits were conducted by a team of Experts to Monitor Pollution related parameters as defined by CPCB / HSPCB. 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 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 Letter. 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 and environmental pollution mitigative measures as suggested in approved Mining Plan, Form-1 and Environmental Management Plan.
- 4) The non conformity in the project with respect to the environmental implication of the project.



**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 stack emissions,
- 4) Analysis of Samples collected during Monitoring,
- 5) Interpretation of Monitoring Results,
- 6) Preparation of six monthly 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. Compliance Report, explaining the entire specific & general conditions given in the EC Letter and providing details w.r.t. each condition/ guideline.
3. Monitoring Reports & Analysis, showing the level of pollution/emission within the project site for various Environment Parameters.
4. Photographs showing status of the project and sampling/monitoring of environmental parameters.
5. Supporting Documents related mandatory for the project.

# 2

## ADHERENCE OF SPECIFIC AND GENERAL CONDITIONS

### Part A: Specific Conditions

S. No.	Specific Conditions	Reply																		
1.	<p>This Environmental Clearance is granted for Production of Stone along with Associated Minerals as per below mentioned figures.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Bench mRL</th> <th>Production</th> </tr> </thead> <tbody> <tr> <td>First</td> <td>381, 372, 363, 354, 336, 327</td> <td>70 lakh MT</td> </tr> <tr> <td>Second</td> <td>327, 318, 309, 300</td> <td>70 lakh MT</td> </tr> <tr> <td>Third</td> <td>300, 291, 282</td> <td>75 lakh MT</td> </tr> <tr> <td>Fourth</td> <td>282 &amp; 273</td> <td>80 lakh MT</td> </tr> <tr> <td>Fifth</td> <td>264 &amp; 255</td> <td>81.66 lakh MT</td> </tr> </tbody> </table>	Year	Bench mRL	Production	First	381, 372, 363, 354, 336, 327	70 lakh MT	Second	327, 318, 309, 300	70 lakh MT	Third	300, 291, 282	75 lakh MT	Fourth	282 & 273	80 lakh MT	Fifth	264 & 255	81.66 lakh MT	Agreed.
Year	Bench mRL	Production																		
First	381, 372, 363, 354, 336, 327	70 lakh MT																		
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Fifth	264 & 255	81.66 lakh MT																		
2.	The project proponent shall obtain prior CTO under Air Act and Water Act from HSPCB and effectively implement all the conditions stipulated by the HSPCB.	The project proponent has obtained CTO from State Pollution Control Board, Haryana. The letter number of the CTO is <b>313100416BHICTOHWM3466014</b> dated- <b>29.11.2016</b> and valid up to-30.09.2021																		
3.	The project proponent shall carry out mining activity strictly as per the approved Mining plan.	Mining activity is being carrying out strictly as per the approved Mining Plan. Vide letter no. <b>DMG/HY/MP/Kheribattar-2/2015/478-481</b> dated - <b>12.01.2016</b>																		
4.	The project proponent shall ensure that the mining operations shall not intersect groundwater table and the mining operation should be restricted at least 3 meter above the ground water table.	Agreed. Mining Activity is being done as per approved mining plan.																		
5.	Topsoil shall be stacked temporarily at earmarked sites only and it shall not be kept unutilized for a period more than three years; it shall be used for land reclamation and plantation in mining out areas.	Agreed and Complied.																		
6.	The project proponent shall ensure that no natural water course/water body shall be obstructed due to any mining operations.	Agreed. We ensure that no natural water course/water body shall be obstructed due to any mining operations.																		
7.	The over burden generated shall be stacked at earmarked dump site (s) only and it shall not be kept active for long period of time. The maximum height of the already existing waste dumps shall not exceed 5 meter in single terraces and the slope angle shall not exceed 28° as per norms.	Agreed.																		
8.	The dumping site selected and proposed shall be used for OB dump at the designated site within the lease area as per the approved mine plan. In no case the overburden should be dumped outside the lease area.	Agreed and complied. OB dump at designated site as per approved mining plan.																		
9.	The benches height and slope shall be maintained as per approved mining plan.	Agreed.																		

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		The bench height is maintained as per approved mining plan.
10.	Waste dump shall be terraced. The height of the dump and its slope shall not exceed as suggested in the approved mining plan. A retaining wall shall be constructed at the toe of the dump.	Agreed.
11.	Garland drains shall be constructed to prevent the flow of the water in the dumps.	Agreed.
12.	Check dams shall be constructed in the seasonal rivulets to prevent the flow of fines to low lying areas during rains.	Not Applicable.
13.	The total waste generated in the present plan period shall be as envisaged, which shall be accommodated in old dumpsite in addition to the waste already dumped. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self sustaining. Compliance status shall be submitted to HSPCB and MOEF Zonal Office, Chandigarh on six monthly bases.	Agreed & complied.
14.	Drills shall either be operated with dust extractors or equipped with water injection system.	Agreed and complied.
15.	The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slop of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.	Agreed.
16.	Catch drains and siltation ponds of appropriate size shall be constructed for size shall be constructed for the working pit. OB dumps and mineral dumps to arrest flow of silt and sediment. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de-silted, particularly after monsoon and maintained properly.	Agreed.
17.	Garland drains; setting tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps and sump capacity shall be constructed 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 shall also provide adequate pits shall be constructed at the corners of the garland drains and de-silted.	Agreed.
18.	Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Agreed.
19.	Green belt should be developed as per the proposed plantation as given in the proposal. Plantation should be carried out in phased manner. The green belt should be developed in the safety zone around the mining lease by planting	Agreed. The Plantation has been done with the consultation of DFO/Agriculture Department.

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	the native species around ML area, OB dumps, backfield and reclaimed around water body, road etc. in consultation with the local DFO/Agriculture Department.	
20.	Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. The project proponent shall adopt water curtain technology to suppress the RPM as per the assurance given. It shall be ensured that the Ambient Air Quality Parameters conform to the norms prescribed by the CPCB.	Agreed. Regularly water sprinkling is being done on main haulage roads and loading and unloading areas with water tankers fitted sprinklers. Lab reports are attached as <b>Annexure-1</b> .
21.	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Agreed.
22.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease. The monitoring shall be carried out four times in a year pre-monsoon (April-May), monsoon (August), post monsoon (November); winter (January) and the data thus collected may be sent regularly to MOEF Regional Office, Chandigarh and Regional Director CGWB.	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>Annexure1</b> . Ground water Level monitoring data in and around the mine area for <b>Pre monsoon (April)</b> and <b>Monsoon (Auguts)</b> are given in <b>Table 3.11 of the chapter-3</b> .
23.	Data on ambient air quality and stack emissions shall be submitted to Haryana Pollution Control Board once in six months carried out by MOEF/NABL/CPCB/Government approved lab.	Agreed. The lease holder has engaged an NABL accredited Laboratory to conduct Monitoring and the reports are submitted to Haryana Pollution Control Board once in six months.
24.	Vehicular emission shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded. The project proponent shall ensure that the vehicle must have pollution under control certificate.	Agreed.
25.	Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders shall be implemented.	Blasting is being conducted during day time 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>➤ Silencer in the machineries is being provided to reduce generation of noise.</li> <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/will be conducting regularly at the project site. (Lab report attached as <b>Annexure-1</b>).</li> </ul>
26.	The blasting operation will be carried out as per the norms of Director (Mines & Safety), Ghaziabad. Take all safety measures as per the various mining	Agreed. Blasting is being conducted on in day time and as per the norms of Director (Mines & Safety), Ghaziabad.

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	regulations.	<p>The safety measures to reduce the impact due to blasting are as follows:</p> <ul style="list-style-type: none"> <li>➤ The position of every deep-hole to be drilled is being distinctly marked by the foreman so as to be readily seen by the drillers.</li> <li>➤ No drilling has commenced in an area, where shot have been fired, until the blaster has made thorough examination at all places.</li> <li>➤ Shots shall not be fired except during hours of day-light.</li> <li>➤ Siren has blown over the entire area falling within the radius of 500m from the place of firing.</li> <li>➤ Two persons have posted, one in either direction at the two extreme points of the road lying within the danger zone.</li> <li>➤ The number of detonators issued to, and in the position of a blaster during his shift shall not exceed the maximum number of shots that's he is permitted to fire.</li> <li>➤ Shot firing tools such as electric lamp or torch, a tool made entirely of wood suitable for charging and stemming. A scraper made of brass or wood, a knife for cutting off fuses, crimpers, picker shall be provided by the owner.</li> </ul>
27.	The project proponent shall take all precautionary measures during mining operations for conservations and protection of endangered fauna. If any, spotted in the study area. A plan for conservation shall be drawn and approved by the State Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the wildlife conservation plan so prepared specific to the project site shall be effectively implemented. A copy of action plan may be submitted to the HSPCB and MOEF, Regional Office, Chandigarh within 3 months.	<p>Agreed. NOC of Forest has been taken from Forest Department and Letter number is <b>1938</b> date-<b>03.11.2015</b>.</p>
28.	As envisaged, the Project Proponent shall invest at least an amount of Rs. 54 lakh as cost for implementing various environmental protection measures including recurring expense per year.	<p>The total cost of project is 4.23Crores. The project proponent will invest amount of Rs. 54 lakh as cost for implementing various environmental protection measures including recurring expenses per year.</p>
29.	A sum of Rs. 24.5 lakh shall be earmarked by the Project Proponent for investment as CSR on socio economic up-liftment activities of the area particularly in the area of habitat, health or education, training programme of rural women & man provide the kit for employment generation. The proposal should contain provision for monthly medical camps, distributions of medicines and improvement in educational facilities in the nearby schools. Details of such activity along with time bound action plan be submitted to HSPCB/SEIAA Haryana before the start of operation.	<p>Budget allocation for CSR Activities is 24.5 Lakh per annum. Agreed.</p>

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30.	Budgetary provision of Rs. 08 lakh per year earmarked for the labours working in the Mine for all necessary infrastructure facilities such as healthy facility, sanitation facility, fuel for cooking, along with safe drinking water, medical camps and toilets for women, crèche for infants should be made and submitted to HSPCB at the time CTO/SEIAA Haryana. The housing facilities should be provided for mining labours.	Agreed. Housing arrangement has been made for the labour near the site with all amenities. Whereas rest shelter, first aid facility, crèche, soak pit and other basic sanitary facilities are being developed at the mine site. All the temporary structure to be removed after the completion of the project.
31.	A Final Mine Closure Plan along with details of corpus fund shall be submitted to the SEIAA well within the stipulated period as prescribed in the minor mineral concession rules 2012.	Agreed.
32.	The water reservoir, which would be created/available during post closure (all pits), shall be provided with suitable benches and fencing to provide the access to the water body and safety.	Agreed.
33.	The project proponent shall ensure that the EC letter as well as the status of compliance of EC conditions and the monitoring data are placed on company's website and displayed at the project site.	Agreed.
34.	The project proponent shall ensure that loading in Trucks do not exceed the norms fixed by the Transport Department as per relevant rules.	Agreed. We ensure that loading in Trucks do not exceed the norms fixed by the Transport Department as per relevant rules.
35.	The project proponent shall ensure approach roads are widened and strengthened as per requirements fixed by PWD and district administration before the start of the work.	Agreed.
36.	The project proponent shall ensure that all measures are taken simultaneously for safeguard and maintenance of the health of the workers.	As per the provisions, rules and regulations of Mines Act, the management will undertake all the necessary precautions. <ul style="list-style-type: none"> <li>➤ Sanitary facilities will be provided.</li> <li>➤ All necessary &amp; statutory first aid and medical facilities will be provided to the workers.</li> <li>➤ Preventive measures have been taken for occupational health &amp; safety of workers.</li> <li>➤ Pre-placement medical examination and periodical medical examination of workers is being conducted such as Hematological Test, Biochemical Test, Urine R/M, Spirometry, Audiometry, Vision test.</li> <li>➤ Vocational training will be provided to the workers.</li> </ul>
37.	The project proponent shall ensure supply of drinking water through RO.	Agreed.

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**Part B. General Conditions**

S. No.	Specific Conditions	Reply
i.	Any change in mining technology/scope of working shall not be made without prior approval of the SEIAA.	Agreed.
ii.	Any change in the calendar plan including excavation, quantum of mineral and waste shall not be made.	Agreed.
iii.	Periodic monitoring of ambient air quality shall be carried out for PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> monitoring. Location of the stations (minimum 6) shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring shall be decided in consultation with the Haryana State Pollution Control Board (HSPCB). Six monthly reports of the data so collected shall be regularly submitted to the HSPCB/CPCB including the MOEF, Regional Office, and Chandigarh.	Agreed. Periodic monitoring of ambient air quality is being carried out for PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> monitoring. Lab reports are enclosed as <b>Annexure-1</b> .
iv.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM etc. shall be provided with earplugs/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> <li>➤ Dense plantation in mining area is also reducing propagation of noise outside the core zone.</li> </ul>
v.	Waste water (workshop and waste water from the mine) shall be properly collected & treated so as to conform to the standard prescribed under GSR 422 (E) dated 19 <sup>th</sup> May 1993 and 31 <sup>st</sup> December 1993 (amended to date). Oil and grease trap shall be installed before discharge.	Agreed.
vi.	Personnel working in dusty areas shall wear protective respiratory devices they shall also be provided with adequate training and information on safety and health aspects.	Following mitigation measures has been initiated for the workers who worked at critically dusty area. <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>
vii.	Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Agreed. <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 equipments.</li> <li>➤ Workers are informed and kept aware about occupational health hazards due to</li> </ul>



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		such activities and preventive measures. ➤ Workers health related problem is being properly addressed.
viii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the HSPCB and the Regional Office of MOEF located at Chandigarh.	Agreed & Complied.
ix.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the northern Regional Office of MOEF, the respective Office of CPCB, HSPCB and SEIAA Haryana.	We are regularly submitting six monthly compliance reports with monitoring reports to the northern regional office of MoEF & CC, HSPCB and SEIAA Haryana.
x.	The SEIAA, Haryana reserve the right to add new conditions, modify/annual any of the stipulated conditions and/or to revoke the clearance if implementation of any of the condition stipulated by SEIAA, Haryana or any other component authorities is not satisfactory.	Agreed.
xi.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.
xii.	The above conditions will be enforced, inter alia, under the provision 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 (all amended till date) and rules made hereunder and also any other orders passed by the Honb'le Supreme Court of India/High Court of Haryana and other Court of law relating to the subject matter.	Agreed.
xiii.	The Project Proponent should inform the public that the project has been accorded Environment Clearance by the SEIAA and copies of the clearance letter area available with the Haryana State Pollution Control Board & SEIAA. This should be advertised within 7 days from the date of issue of the clearance letter at least in tow local newspapers that are widely circulated in the region and the copy of the same should be forwarded to SEIAA Haryana. A copy of Environment Clearance conditions shall also be put on project proponent's web site for public awareness.	Agreed & Complied.
xiv.	All the other statutory clearances such as the approvals for storage of diesel from the Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as may be applicable, by Project Proponent from the competent authority before the start of mining operation.	Agreed.
xv.	That the grant of this EC is issued from the environment angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time being in force, rests with the industry/unit/project proponent. Any appeal	Agreed.

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 National Green Tribunal Act, 2010.

# 3

## DETAILS OF ENVIRONMENTAL MONITORING

### 3.1 Monitoring Portfolio:

This report is prepared for the period April 2019 to September 2019 as per EC conditions. The samples were analyzed at NABL approved Environmental laboratory. Following environmental components has been monitored and analyzed.

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

### 3.2 AMBIENT AIR QUALITY MONITORING

#### 3.2.1 Ambient Air Quality Monitoring Stations

Ambient air quality monitoring has been carried out at 6 locations as mentioned below. 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 Code	Location Name
1.	AAQ-1	Near Main Office
2.	AAQ-2	100 mtr from mine site
3.	AAQ-3	Haul Road
4.	AAQ-4	Village-Kheribattar
5.	AAQ-5	Loading Area
6.	AAQ-6	Village-Kheribora

#### **AAQ-1: Near Main Office**

The sampler was placed near office was free from any obstructions. Surroundings of the sampling site represent Industrial environmental setting.

#### **AAQ-2: 100 mtr from mine site**

The sampler was placed 100 mtr. from mine site and was free from any obstructions. Surroundings of the sampling site represent Industrial environmental setting.

#### **AAQ-3: Haul Road**

The sampler was placed haul road, for estimate the pollution level due to movement of vehicles.

**AAQ-4: Village-Kheribattar**

The sampler was placed at Village-Kheribattar, was free from any obstructions. Surroundings of the sampling site represent residential environmental setting.

**AAQ-5: Loading Area**

The sampler was placed at loading area to estimate the pollution level due to loading activity.

**AAQ-6: Village-Kheribora**

The sampler was placed at Village-Kheribora, was free from any obstructions. Surroundings of the sampling site represent residential environmental setting.

**3.2.2 Ambient Air Quality Monitoring Methodology**

Monitoring was conducted in respect of the following parameters:

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

The duration of sampling of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub> were 24 hourly continuous sampling per day. The monitoring was conducted for one day at each location. This is to allow a comparison with the National Ambient Air Quality Standards.

The air 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 and minimum detectable levels 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>x</sub>.

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

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

#SOP-As per Laboratory Standard Operating Procedure.

### 3.2.3 Ambient Air Quality Monitoring Results

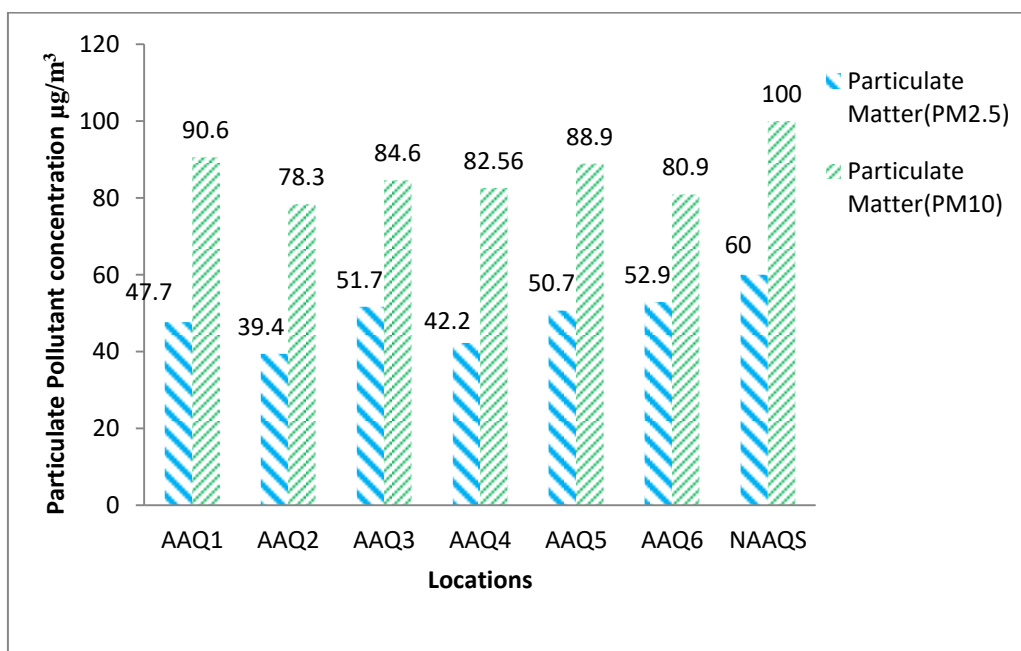
The detailed on-site monitoring results of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub> are presented as **Table 3.3**

**Table 3.3 Ambient Air Quality Monitoring Results**  
(All results are expressed in µg/m<sup>3</sup>)

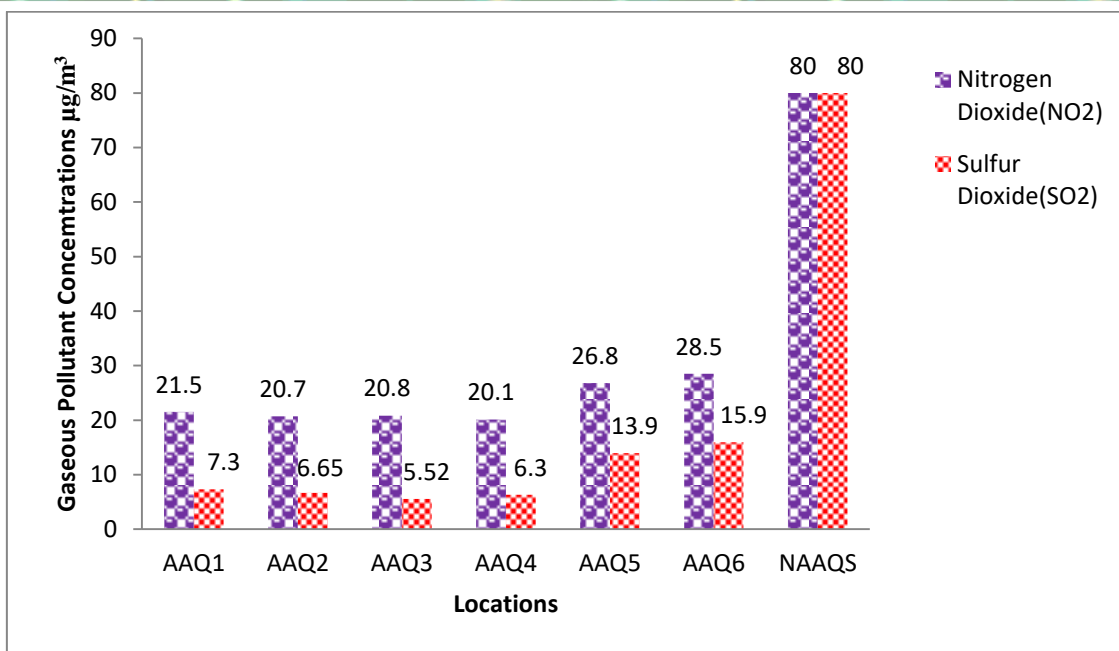
S. No.	Parameter	Test Result						NAAQS*
		AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	
1.	Particulate Matter (PM <sub>2.5</sub> ), µg/m <sup>3</sup>	47.7	39.4	51.7	42.2	50.7	52.9	60
2.	Particulate Matter (PM <sub>10</sub> ), µg/m <sup>3</sup>	90.6	78.3	84.6	82.56	88.9	80.9	100
3.	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	21.5	20.7	20.8	20.1	26.8	28.5	80
4.	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	7.3	6.65	5.52	6.3	13.9	15.9	80

\*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009

#### 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**

#### 3.2.4 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 39.4 to 52.9 µg/m<sup>3</sup> and 78.3 to 90.6 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 20.1 to 28.5 µg/m<sup>3</sup> and 5.52 to 15.9 µg/m<sup>3</sup> respectively. All the results were found to be well within the prescribed NAAQS limits.

### 3.3 AMBIENT NOISE MONITORING

#### 3.3.1 Ambient Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels due to various mining allied activities and increased vehicular movement. A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Ambient noise monitoring was conducted at 6 locations near the mining area as given in **Table 3.4**.

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

S. No.	Location Code	Location Name
1	N1	Near main Office
2	N2	100 mtr from mine site
3	N3	Haul Road
4	N4	Village-Kheribattar
5	N5	Loading Area
6	N6	Village-Kheribora

#### 3.3.2 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.

#### 3.3.3 Ambient Noise Monitoring Results

The location wise ambient noise monitoring results is summarized in **Table 3.5**. Graphical presentation of location wise variation of ambient noise level is shown in **Figure 3.2**

**Table 3.5 Location Wise variation of ambient Noise Level**

Parameter	Location Code											
	N1		N2		N3		N4		N5		N6	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
<b>Lmax</b>	72.3	68.9	78.5	70.5	75.5	64.5	60.6	57.9	72.9	64.6	64.3	52.3
<b>Lmin</b>	50.1	51.5	54.2	50.7	56.9	43.2	44.6	39.2	55.7	47.2	46.5	32.5
<b>Leq</b>	<b>50.15</b>	<b>58.52</b>	<b>63.5</b>	<b>55.3</b>	<b>64.2</b>	<b>58.24</b>	<b>52.16</b>	<b>41.23</b>	<b>67.5</b>	<b>38.5</b>	<b>49.8</b>	<b>42.1</b>
<b>CPCB Limits in dB(A) Leq</b>	75.0	70.0	75.0	70.0	75.0	70.0	55.0	45.0	75.0	70.0	55.0	45.0

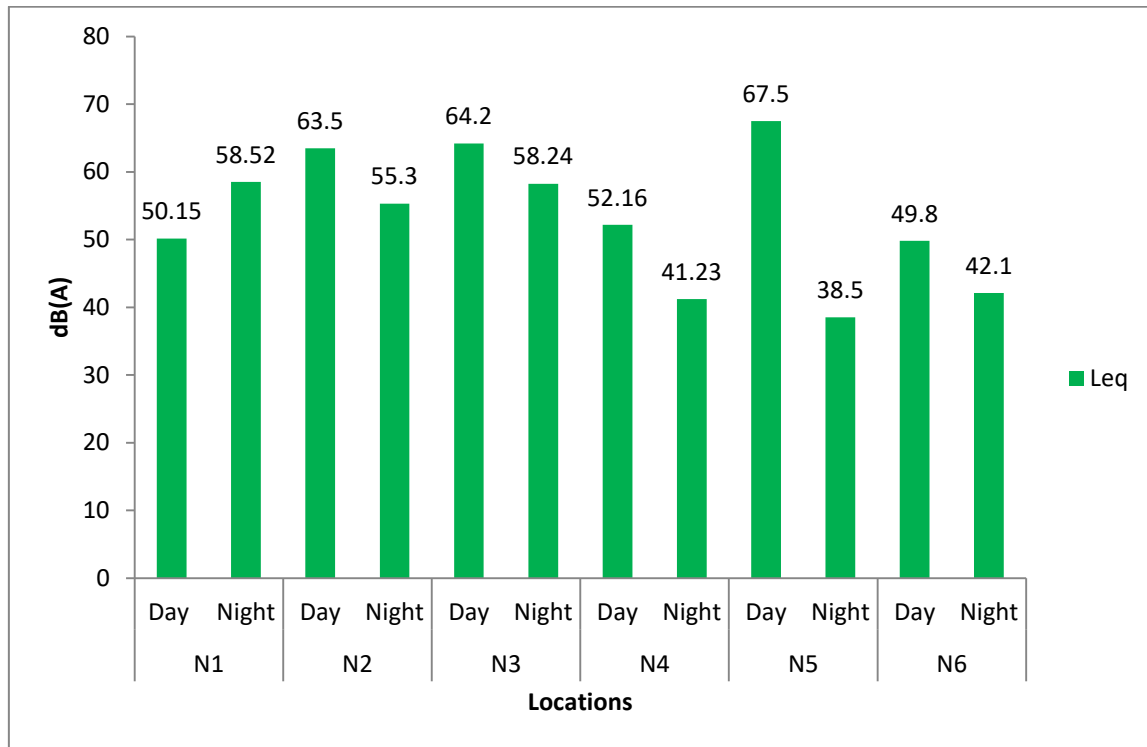


Figure 3.3 Graphical Presentation of Ambient Noise Level

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

The Equivalent noise levels for day and night was found to be in range of 49.8 to 67.5 dB (A) and 38.5 to 58.52 dB (A) respectively. The noise levels were well within the permissible limits of NAAQS w.r.t Noise.



### 3.4 Water Quality Monitoring

#### 3.4.1 Ground Water Quality Monitoring Locations

Keeping in view the importance of water as important source to the local population, sample of ground water was collected from the project site for the assessment of impacts of the project on the water quality.

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

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

S. No.	Location Code	Location Name/ Description
1.	GW1	Near Project Site (in April 2019 and August 2019)
2.	GW2	Village- Kheribora( in April 2019 and August 2019)

#### 3.4.2 Methodology of Ground Water Quality Monitoring

Sampling of ground water was carried out on April 2019 and August 2019. 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. Samples collected for metal content were acidified to <2 pH with 1 ml HNO<sub>3</sub>. Samples for bacteriological analysis were 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 in **Table 3.7, 3.8, 3.9 & 3.10**.

### 3.4.3 Ground Water Quality Monitoring Results

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

**Table 3.7 Ground Water Quality Monitoring Results (April 2019 Pre monsoon) Project 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)	--	7.29	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	318.45	200	600
7.	Calcium as Ca	mg/l	51.97	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	310.20	200	600
9.	Chloride as Cl	mg/l	173.94	250	1000
10.	Cyanide as CN	mg/l	*BDL(**DL 0.05 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	46.43	30	100
12.	Total Dissolved Solids	mg/l	672.00	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	62.90	200	400
14.	Fluoride as F	mg/l	0.85	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	22.73	45	No Relaxation
16.	Iron as Fe	mg/l	0.40	0.3	No relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.02 mg/l)	0.03	0.2
18.	Boron	mg/l	0.45	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	0.45	5	15
24.	Copper as Cu	mg/l	0.04	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	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL	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	

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

**Table 3.8 Ground Water Quality Monitoring Results (April 2019 Pre monsoon) Village- Kheribora**

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)	--	7.30	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	317.34	200	600
7.	Calcium as Ca	mg/l	51.79	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	315.20	200	600
9.	Chloride as Cl	mg/l	145.90	250	1000
10.	Cyanide as CN	mg/l	*BDL(**DL 0.05 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	30.85	30	100
12.	Total Dissolved Solids	mg/l	683.00	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	35.51	200	400
14.	Fluoride as F	mg/l	0.74	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	20.91	45	No Relaxation
16.	Iron as Fe	mg/l	0.50	0.3	No relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.02 mg/l)	0.03	0.2
18.	Boron	mg/l	0.41	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	0.10	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	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL	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	

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

**Table 3.9 Ground Water Quality Monitoring Results (Monsoon) Project 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)	--	7.35	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	300.41	200	600
7.	Calcium as Ca	mg/l	53.25	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	280.45	200	600
9.	Chloride as Cl	mg/l	155.21	250	1000
10.	Cyanide as CN	mg/l	*BDL(**DL 0.05 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	43.86	30	100
12.	Total Dissolved Solids	mg/l	735.10	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	52.45	200	400
14.	Fluoride as F	mg/l	0.74	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	22.60	45	No Relaxation
16.	Iron as Fe	mg/l	0.30	0.3	No relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.02 mg/l)	0.03	0.2
18.	Boron	mg/l	0.25	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	0.31	5	15
24.	Copper as Cu	mg/l	0.02	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	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL	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	

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

**M/s ASD RKC J.V. Project: Environmental Clearance for Proposed Stone along with Associated Minor Minerals  
at Kheribattar Plot-2, Tehsil- Dadri, District-Bhiwani, Haryana.  
EC No. SEIAA/HR/2016/875 Dated-04.10.2016**

**Table 3.10 Ground Water Quality Monitoring Results (Monsoon) Village- Kheribora**

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)	--	7.28	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	310.90	200	600
7.	Calcium as Ca	mg/l	50.74	75	200
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	315.42	200	600
9.	Chloride as Cl	mg/l	136.30	250	1000
10.	Cyanide as CN	mg/l	*BDL(**DL 0.05 mg/l)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	47.56	30	100
12.	Total Dissolved Solids	mg/l	718.20	500	2000
13.	Sulphate as SO <sub>4</sub>	mg/l	21.20	200	400
14.	Fluoride as F	mg/l	0.51	1.0	1.5
15.	Nitrate as NO <sub>3</sub>	mg/l	20.74	45	No Relaxation
16.	Iron as Fe	mg/l	0.47	0.3	No relaxation
17.	Aluminium as Al	mg/l	*BDL(**DL 0.03 mg/l)	0.03	0.2
18.	Boron	mg/l	0.35	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 0.5mg/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	0.17	5	15
24.	Copper as Cu	mg/l	0.04	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	0.003	No Relaxation
27.	Lead as Pb	mg/l	*BDL	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	

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

#### 3.4.4 Discussion on Ground Water Quality in the Study Area

The Ground water quality of all location were observed to be slightly alkaline in nature with total alkalinity reaching up to 280.45 and 315.42 mg/L respectively in water samples against the prescribed limit of 200 mg/L (600 Permissible limit). Total Hardness in the water is 300.41 mg/L and 318.45 mg/L at project site 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.

#### 3.4.5 Ground Water Level in and around the mine site

Ground water level was monitored villages and locations located approx. 5 Km in and around mine area. Water level of the water sources was measured manually in pre monsoon (month of April) and during Monsoon (month of August). 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.

**Table 3.11 Ground Water level in and around the mine site**

Sample. Number	Village Name	Location	Water Level (in mbgl) (April, 2019)	Water Level (in mbgl) (August, 2019)
W1	Mine Site	28°33'43.25"N 76°10'32.89"E	43.10	42.60
W2	Kaliyana	28°33'7.55"N 76°12'1.14"E	40.50	39.70
W3	Asawari	28°32'31.65"N 76° 8'36.32"E	44.50	43.80
W4	Kalali	28°31'21.66"N 76°11'1.54"E	42.90	41.80
W5	Kheri Bura	28°35'22.68"N 76°11'56.23"E	40.10	39.40

### 3.5 SOIL MONITORING

#### 3.5.1 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 mining 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- Kheribora

#### 3.5.2 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 2019.

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 Spectrophotometer.

#### 3.5.3 Soil Monitoring Results

Single sample of soil is collected from the project 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, 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>7.50</b>
2.	<b>Conductivity</b>	IS:14767 by Conductivity meter	mS/cm	<b>0.380</b>
3.	<b>Soil Texture</b>	IS : 2720 (P-22, RA2003)	--	<b>Sandy</b>
4.	<b>Color</b>	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	--	<b>Brownish</b>
5.	<b>Water holding capacity</b>	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	%	<b>40.20</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/100g	<b>50.62</b>
8.	<b>Calcium as Ca</b>	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	mg/100g	<b>30.70</b>
9.	<b>Sodium as Na</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	mg/kg	<b>40.40</b>
10.	<b>Potassium as K</b>	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	kg/hect.	<b>145.70</b>
11.	<b>Organic Matter</b>	IS:2720 (P-22) Titrimetric Method	%	<b>0.50</b>
12.	<b>Magnesium as Mg</b>	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	mg/100g	<b>22.80</b>
13.	<b>Available Nitrogen as N</b>	IS:14684 Distillation Method	kg./hect.	<b>150.41</b>
14.	<b>Available Phosphorus</b>	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	kg./hect.	<b>30.81</b>
15.	<b>Zinc (as Zn)</b>	USEPA 3050B	mg/kg	<b>5.30</b>
16.	<b>Manganese (as Mn )</b>	USEPA 3050B	mg/kg	<b>5.20</b>
17.	<b>Lead (as Pb)</b>	USEPA 3050B	mg/kg	<b>0.47</b>
18.	<b>Cadmium (as Cd )</b>	USEPA 3050B	mg/kg	<b>2.30</b>
19.	<b>Chromium (as Cr)</b>	USEPA 3050B	mg/kg	<b>2.50</b>
20.	<b>Copper (as Cu )</b>	USEPA 3050B	mg/kg	<b>3.14</b>

\*SOP -Laboratory standard operating procedure. #Chromium- this parameter is not covered our NABL scope.

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

S. No.	Parameter	Test-Method	Unit	Result
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	--	<b>7.40</b>
2.	Conductivity	IS:14767 by Conductivity meter	mS/cm	<b>0.370</b>
3.	Soil Texture	IS : 2720 (P-22, RA2003)	--	<b>Sandy</b>
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	--	<b>Brownish</b>
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	%	<b>33.6</b>
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	gm/cc	<b>1.94</b>
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	mg/100g	<b>52.30</b>
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	mg/100g	<b>31.70</b>
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	mg/kg	<b>47.50</b>
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	kg/hect.	<b>148.30</b>
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	%	<b>0.82</b>
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	mg/100g	<b>29.45</b>
13.	Available Nitrogen as N	IS:14684 Distillation Method	kg./hect.	<b>130.74</b>
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	kg./hect.	<b>33.64</b>
15.	Zinc (as Zn)	USEPA 3050B	mg/kg	<b>8.34</b>
16.	Manganese (as Mn )	USEPA 3050B	mg/kg	<b>6.40</b>
17.	Lead (as Pb)	USEPA 3050B	mg/kg	<b>2.36</b>
18.	Cadmium (as Cd )	USEPA 3050B	mg/kg	<b>2.12</b>
19.	Chromium (as Cr)	USEPA 3050B	mg/kg	<b>3.51</b>
20.	Copper (as Cu )	USEPA 3050B	mg/kg	<b>5.34</b>

\*SOP -Laboratory standard operating procedure. #Chromium- this parameter is not covered our NABL scope.

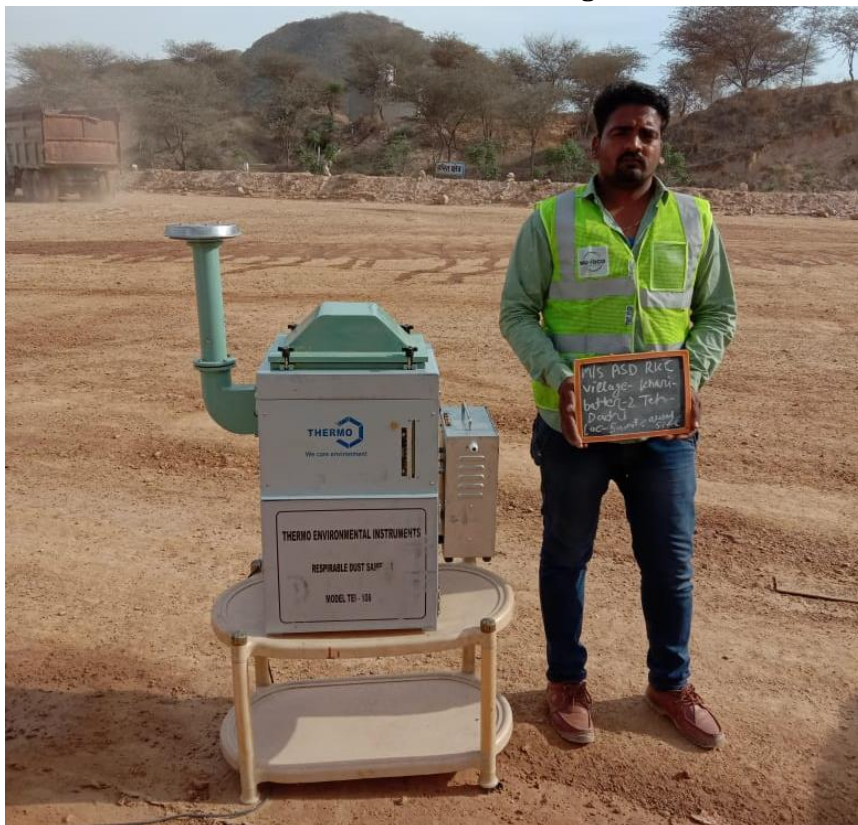
### 3.5.4 Discussion on Soil Characteristics in the Study Area

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

### 3.6 SITE PHOTOGRAPHS



**Ambient Noise Monitoring**



**Ambient Air Monitoring**





**Ambient Noise Monitoring**



**Ambient Air Monitoring**



**Loading Unloading Photos**





Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan)  
Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
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## Test Report

Sample Number : VEL/A/1909100023

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100023  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT AIR

### General Information

Sampling Location : Near Main Office  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 09:00 AM To 09:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM10, PM2.5, NO2, SO2

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	90.6	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	47.7	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	21.5	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	7.3	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

**Ruchi Chaudhary**  
(Tested By)

Analyst

**Subodh Shekhawat**

(Checked By)

Deputy Technical Manager





## Test Report

Sample Number : VEL/A/1909100024

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100024

Format No : 7.8 F-01

Party Reference No : Nil

Reporting Date : 14/09/2019

Period of Analysis : 10/09/2019-12/09/2019

Receipt Date : 10/09/2019

Sample Description : AMBIENT AIR

### General Information

Sampling Location : 100 Mtr From mine site  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 09:20 AM To 09:20 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM10, PM2.5, NO2, SO2

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	78.3	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	39.4	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	20.7	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	6.65	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

Rushi Chaudhary

(Tested By)

Analyst

Subodh Shekhawat

(Checked By)

Deputy Technical Manager

(Approved By)



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## Test Report

Sample Number : VEL/A/1909100025

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100025  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT AIR

### General Information

Sampling Location : Haul Road  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 09:40 AM To 09:40 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM10, PM2.5, NO2, SO2

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	84.6	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	51.7	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	20.8	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	5.52	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

  
Ruchi Chaudhary  
(Tested By)

Analyst

  
Subodh Shekhawat

(Checked By)

Deputy Technical Manager



(Approved By)

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## Test Report

Sample Number : VEL/A/1909100026

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100026  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT AIR

### General Information

Sampling Location : Village-Kheribattar  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 10:00 AM To 10:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM10, PM2.5, NO2, SO2

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	82.56	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	42.2	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	20.1	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	6.30	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

  
(Tested By)

Analyst

  
(Checked By)

Deputy Technical Manager



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## Test Report

Sample Number : VEL/A/1909100027

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100027  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

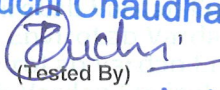
Sample Description : AMBIENT AIR

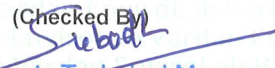
### General Information

Sampling Location : Loading Area  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 10:20 AM To 10:20 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM -10, PM - 2.5, NO2, SO2

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	88.9	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	50.7	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	26.8	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	13.9	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

Ruchi Chaudhary  
  
(Tested By)  
Analyst

Subodh Shekhawat  
(Checked By)  
  
Deputy Technical Manager



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## Test Report

Sample Number : VEL/A/1909100028

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/A/1909100028

Format No : 7.8 F-01

Party Reference No : Nil

Reporting Date : 14/09/2019

Period of Analysis : 10/09/2019-12/09/2019

Receipt Date : 10/09/2019

Sample Description : AMBIENT AIR

### General Information

Sampling Location : Village-Kheribattar  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 10:40 AM To 10:40 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : IS : 5182  
Sampling Duration : 24 Hours  
Parameter Required : PM -10, PM - 2.5, NO<sub>2</sub>, SO<sub>2</sub>

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	80.9	µg/m <sup>3</sup>	100
2	Particulate Matter (as PM - 2.5)	SOP No. VEL/SOP/01, Section No. SP 63:2013	52.9	µg/m <sup>3</sup>	60
3	Nitrogen Dioxides (as NO <sub>2</sub> )	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	28.5	µg/m <sup>3</sup>	80
4	Sulphur Dioxide (as SO <sub>2</sub> )	IS:5182 (P-2), Modified West and Gaeke, RA:2012	15.9	µg/m <sup>3</sup>	80

\*\*\*End of Report\*\*\*

**Ruchi Chaudhary**  
(Tested By)

Analyst

**Subodh Shekhawat**

(Checked By)

Deputy Technical Manager



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## Test Report

Sample Number : VEL/N/1909100050

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/N/1909100050  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE


### General Information

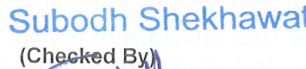
Sampling Location : Near Main Office  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	72.3	68.9	dB (A)
2	Lmin.	I S-9989	50.1	51.5	dB (A)
3	Leq	I S-9989	50.15	58.52	dB (A)
4	#DGMS Limits in dB(A*) Leq (Mining Area)	--	75.00	70.00	dB (A)

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

\*\*\*End of Report\*\*\*

  
(Tested By)  
Analyst

  
(Checked By)  
Deputy Technical Manager



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## Test Report

Sample Number : VEL/N/1909100051  
Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana  
Report No. : VEL/N/1909100051  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE

### General Information

Sampling Location : 100 Mtr from mine site  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	78.5	70.5	dB (A)
2	Lmin.	I S-9989	54.2	50.7	dB (A)
3	Leq	I S-9989	63.50	55.30	dB (A)
4	#DGMS Limits in dB(A*) Leq (Mining Area)	--	75.00	70.00	dB (A)

Note-#DGMS:-Directorate General of Mines & Safety.

\*\*\*End of Report\*\*\*

Ruchi Chaudhary  
(Tested By)  
Analyst

Subodh Shekhawat  
(Checked By)  
Deputy Technical Manager



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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan)  
Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
NABL Accredited | ISO 9001 | ISO 14001 | OHSAS 18001

## Test Report

Sample Number : VEL/N/1909100052  
Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/N/1909100052  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE

### General Information

Sampling Location : Haul Road  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	75.5	64.5	dB (A)
2	Lmin.	I S-9989	56.9	43.2	dB (A)
3	Leq	I S-9989	64.20	58.24	dB (A)
4	#DGMS Limits in dB(A*) Leq (Mining Area)	--	75.00	70.00	dB (A)

#DGMS:-Directorate General of Mine & Safety.

\*\*\*End of Report\*\*\*

**Ruchi Chaudhary**  
(Tested By)  
Analyst

**Subodh Shekhawat**  
(Checked By)  
Deputy Technical Manager



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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan)  
Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
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## Test Report

Sample Number : VEL/N/1909100053

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/N/1909100053  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE

### General Information

Sampling Location : Village:-kheribattar  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	60.6	57.9	dB (A)
2	Lmin.	I S-9989	44.6	39.2	dB (A)
3	Leq	I S-9989	52.16	41.23	dB (A)
4	CPCB Limits in dB(A*) Leq (Residential Area)	--	55.00	45.00	dB (A)

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

\*\*\*End of Report\*\*\*

**Ruchi Chaudhary**  
(Tested By)  
Analyst

**Subodh Shekhawat**  
(Checked By)  
Deputy Technical Manager



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## Test Report

Sample Number : VEL/N/1909100054  
Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/N/1909100054  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE

### General Information


Sampling Location : Loading Area  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	72.9	64.6	dB (A)
2	Lmin.	I S-9989	55.7	47.2	dB (A)
3	Leq	I S-9989	67.50	38.50	dB (A)
4	#DGMS Limits in dB(A*) Leq (Mining Area)	--	75.00	70.00	dB (A)

#DGMS:-Directorate General of Mine & Safety.

\*\*\*End of Report\*\*\*

  
(Tested By)  
Analyst

  
(Checked By)  
Deputy Technical Manager



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## Test Report

Sample Number : VEL/N/1909100055  
Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/N/1909100055  
Format No : 7.8 F-01  
Party Reference No : Nil  
Reporting Date : 14/09/2019  
Period of Analysis : 10/09/2019-12/09/2019  
Receipt Date : 10/09/2019

Sample Description : AMBIENT NOISE

### General Information

Sampling Location : Village-Kheribora  
Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
Sampling Equipment used : RDS & FPS  
Instrument Code : --  
Instrument Calibration Status : Calibrated  
Meteorological condition during monitoring : Clear Sky  
Date of Monitoring : 09/09/2019 To 10/09/2019  
Time of Monitoring : 06:00 AM To 06:00 AM  
Ambient Temperature (°C) : Min.21°C Max.31°C  
Surrounding Activity : Human, Vehicular & Other Mining Activities  
Scope of Monitoring : Regulatory Requirement  
Sampling & Analysis Protocol : CPCB  
Sampling Duration : 24 Hours  
Parameter Required : Lmax.,Lmin.,Leq,

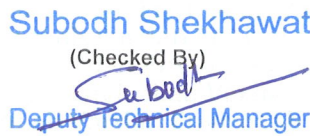
S.No.	Parameters	Test Method	Test Results		Units
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 6:00 am)	
1	Lmax.	I S-9989	64.3	52.3	dB (A)
2	Lmin.	I S-9989	46.5	32.5	dB (A)
3	Leq	I S-9989	49.80	42.10	dB (A)
4	CPCB Limits in dB(A*) Leq (Residential Area)	--	55.00	45.00	dB (A)

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

\*\*\*End of Report\*\*\*

  
Rishi Chaudhary  
(Tested By)

Analyst

  
Subodh Shekhawat  
(Checked By)  
Deputy Technical Manager



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## Test Report

Sample Number : VEL/W/1908070023

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
 Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
 Project Name:-Stone Mine (Associated Minor Mineral),  
 Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/W/1908070023  
 Format No : 7.8 F-01  
 Party Reference No : Nil  
 Reporting Date : 12/08/2019  
 Period of Analysis : 07/08/2019-12/08/2019  
 Receipt Date : 07/08/2019  
 Sampling Date : 07/08/2019  
 Sampling Quantity : 2.0 Ltr.  
 Sampling Type : Grab

Sample Description : Ground Water Sample  
 Location : Near Project Site  
 Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
 Preservation : Refrigerated  
 Sampling and Analysis Protocol : IS 10500 2012

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH (at 25°C)	APHA 4500 H+B Electrometric Method:2017	7.35	--	6.5 to 8.5	No Relaxation
2	Colour	APHA 2120 B Visual Comparison Method:2017	*BDL(**DL 5Hazen)	Hazen	5	15
3	Turbidity	APHA 2130 B Nephelometric Method:2017	*BDL(**DL 0.1NTU)	NTU	1	5
4	Odour	APHA 2150 B Threshold Odour Method:2017	Agreeable	--	Agreeable	Agreeable
5	Taste	APHA 2160 B Flavor Threshold Test Method:2017	Agreeable	--	Agreeable	Agreeable
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C EDTA Titrimetric Method:2017	300.41	mg/l	200	600
7	Calcium (as Ca)	APHA 3500 Ca B EDTA Titrimetric Method:2017	53.25	mg/l	75	200
8	Alkalinity (as CaCO <sub>3</sub> )	APHA 2320 B Titration Method:2017	280.45	mg/l	200	600
9	Chloride (as Cl)	APHA 4500 Cl B Argentometric Method:2017	155.21	mg/l	250	1000
10	Cyanide (as CN)	APHA 4500 CN D Titrimetric Method:2017	*BDL(**DL-0.0 5 mg/L)	mg/l	0.05	No Relaxation
11	Magnesium (as Mg)	APHA 3500 Mg B Calculation Method:2017	43.86	mg/l	30	100
12	Total Dissolved Solids	APHA 2540 C Gravimetric Method:2017	735.10	mg/l	500	2000
13	Sulphate (as SO <sub>4</sub> )	APHA 4500 E Turbidimetric Method:2017	52.45	mg/l	200	400
14	Fluoride (as F)	APHA 4500 F D Spands Method:2017	0.74	mg/l	1.0	1.5
15	Nitrate (as NO <sub>3</sub> )	IS 3025 (P-34), Chromotropic	22.60	mg/l	45.0	No Relaxation

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**MEENU KAUSHIK**  
 Senior Analyst

**Subodh Shekhawat**  
 Deputy Technical Manager





## Test Report

Sample Number : VEL/W/1908070023

Report No. : VEL/W/1908070023

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
15		Method, RA:2003				
16	Iron (as Fe)	APHA 3500 Fe B 1,10 Phenanthroline Method:2017	0.30	mg/l	0.3	No Relaxation
17	Aluminium (as Al)	APHA 3111 D Direct Nitrousoxide Acetylene Flame Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.03	0.2
18	Boron (as B)	APHA 4500 C Carmine Method:2017	0.25	mg/l	0.5	1.0
19	Total Chromium (as Cr)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 3 mg/L)	mg/l	0.05	No Relaxation
20	Phenolic Compounds (C6H5OH)	APHA 5530 C Chloroform Extraction Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	0.002
21	Mineral Oil	APHA 5520 C Partition Infra Red:2017	*BDL(**DL-0.5 mg/L)	mg/l	0.5	No Relaxation
22	Anionic Detergents (as MBAS)	APHA 5540 C MBAS Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.2	1.0
23	Zinc (as Zn)	APHA 3111 B Direct Acetylene Flame Method:2017	0.31	mg/l	5.0	15.0
24	Copper (as Cu)	APHA 3111 B Direct Acetylene Flame Method:2017	0.02	mg/l	0.05	1.5
25	Manganese (as Mn)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 6 mg/L)	mg/l	0.1	0.3
26	Cadmium (as Cd)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 03 mg/L)	mg/l	0.003	No Relaxation
27	Lead (as Pb)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
28	Selenium (as Se)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
29	Arsenic (as As)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	0.05
30	Mercury (as Hg)	APHA 3112 B Cold Vapor AAS Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	No Relaxation
31	Total Coliform	IS 1622:2009	<2	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--
32	E.Coli	IS 1622:2009	Absent	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--

Subodh Shekhawat

Deputy Technical Manager

MEENU KAUSHIK  
Senior Analyst

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 Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
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## Test Report

Sample Number : VEL/W/1908070024

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
 Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
 Project Name:-Stone Mine (Associated Minor Mineral),  
 Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/W/1908070024

Format No : 7.8 F-01

Party Reference No : Nil

Reporting Date : 12/08/2019

Period of Analysis : 07/08/2019-12/08/2019

Receipt Date : 07/08/2019

Sampling Date : 07/08/2019

Sampling Quantity : 2.0 Ltr.

Sampling Type : Grab

Sample Description : Ground Water Sample

Location : Village-Kheribora

Sample Collected by : VEL Representative (Mr. Rakesh Kumar)

Preservation : Refrigerated

Sampling and Analysis Protocol : IS 10500 2012

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH (at 25°C)	APHA 4500 H+B Electrometric Method:2017	7.28	--	6.5 to 8.5	No Relaxation
2	Colour	APHA 2120 B Visual Comparison Method:2017	*BDL(**DL 5Hazen)	Hazen	5	15
3	Turbidity	APHA 2130 B Nephelometric Method:2017	*BDL(**DL 0.1NTU)	NTU	1	5
4	Odour	APHA 2150 B Threshold Odour Method:2017	Agreeable	--	Agreeable	Agreeable
5	Taste	APHA 2160 B Flavor Threshold Test Method:2017	Agreeable	--	Agreeable	Agreeable
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C EDTA Titrimetric Method:2017	310.90	mg/l	200	600
7	Calcium (as Ca)	APHA 3500 Ca B EDTA Titrimetric Method:2017	50.74	mg/l	75	200
8	Alkalinity (as CaCO <sub>3</sub> )	APHA 2320 B Titration Method:2017	315.42	mg/l	200	600
9	Chloride (as Cl)	APHA 4500 Cl B Argentometric Method:2017	136.30	mg/l	250	1000
10	Cyanide (as CN)	APHA 4500 CN D Titrimetric Method:2017	*BDL(**DL-0.05 mg/L)	mg/l	0.05	No Relaxation
11	Magnesium (as Mg)	APHA 3500 Mg B Calculation Method:2017	47.56	mg/l	30	100
12	Total Dissolved Solids	APHA 2540 C Gravimetric Method:2017	718.20	mg/l	500	2000
13	Sulphate (as SO <sub>4</sub> )	APHA 4500 E Turbidimetric Method:2017	21.20	mg/l	200	400
14	Fluoride (as F)	APHA 4500 F D Spands Method:2017	0.51	mg/l	1.0	1.5
15	Nitrate (as NO <sub>3</sub> )	IS 3025 (P-34), Chromotropic	20.74	mg/l	45.0	No Relaxation

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**Signature Analyst**

**Subodh Shekhawat**

**Deputy Technical Manager**

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## Test Report

Sample Number : VEL/W/1908070024

Report No. : VEL/W/1908070024

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
15		Method, RA:2003				
16	Iron (as Fe)	APHA 3500 Fe B 1,10 Phenanthroline Method:2017	0.47	mg/l	0.3	No Relaxation
17	Aluminium (as Al)	APHA 3111 D Direct Nitrousoxide Acetylene Flame Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.03	0.2
18	Boron (as B)	APHA 4500 C Carmine Method:2017	0.35	mg/l	0.5	1.0
19	Total Chromium (as Cr)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 3 mg/L)	mg/l	0.05	No Relaxation
20	Phenolic Compounds (C6H5OH)	APHA 5530 C Chloroform Extraction Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	0.002
21	Mineral Oil	APHA 5520 C Partition Infra Red:2017	*BDL(**DL-0.5 mg/L)	mg/l	0.5	No Relaxation
22	Anionic Detergents (as MBAS)	APHA 5540 C MBAS Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.2	1.0
23	Zinc (as Zn)	APHA 3111 B Direct Acetylene Flame Method:2017	0.17	mg/l	5.0	15.0
24	Copper (as Cu)	APHA 3111 B Direct Acetylene Flame Method:2017	0.04	mg/l	0.05	1.5
25	Manganese (as Mn)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 6 mg/L)	mg/l	0.1	0.3
26	Cadmium (as Cd)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 03 mg/L)	mg/l	0.003	No Relaxation
27	Lead (as Pb)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
28	Selenium (as Se)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
29	Arsenic (as As)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	0.05
30	Mercury (as Hg)	APHA 3112 B Cold Vapor AAS Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	No Relaxation
31	Total Coliform	IS 1622:2009	<2	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--
32	E.Coli	IS 1622:2009	Absent	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--

MEENU KAUSHIK  
Senior Analyst

Subodh Shekhawat

Deputy Technical Manager

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan)  
 Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
**NABL Accredited | ISO 9001 | ISO 14001 | OHSAS 18001**

## Test Report

Sample Number : VEL/W/1904090019

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
 Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
 Project Name:-Stone Mine (Associated Minor Mineral),  
 Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/W/1904090019  
 Format No : 7.8 F-01  
 Party Reference No : Nil  
 Reporting Date : 13/04/2019  
 Period of Analysis : 09/04/2019-13/04/2019  
 Receipt Date : 09/04/2019  
 Sampling Date : 10/09/2019  
 Sampling Quantity : 2.0 Ltr.  
 Sampling Type : Composite

Sample Description : Ground Water Sample  
 Location : Near Project Site  
 Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
 Preservation : Refrigerated  
 Sampling and Analysis Protocol : IS 10500 2012

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH (at 25°C)	APHA 4500 H+B Electrometric Method:2017	7.29	--	6.5 to 8.5	No Relaxation
2	Colour	APHA 2120 B Visual Comparison Method:2017	*BDL(**DL 5Hazen)	Hazen	5	15
3	Turbidity	APHA 2130 B Nephelometric Method:2017	*BDL(**DL 0.1NTU)	NTU	1	5
4	Odour	APHA 2150 B Threshold Odour Method:2017	Agreeable	--	Agreeable	Agreeable
5	Taste	APHA 2160 B Flavor Threshold Test Method:2017	Agreeable	--	Agreeable	Agreeable
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C EDTA Titrimetric Method:2017	318.45	mg/l	200	600
7	Calcium (as Ca)	APHA 3500 Ca B EDTA Titrimetric Method:2017	51.97	mg/l	75	200
8	Alkalinity (as CaCO <sub>3</sub> )	APHA 2320 B Titration Method:2017	310.20	mg/l	200	600
9	Chloride (as Cl)	APHA 4500 Cl B Argentometric Method:2017	173.94	mg/l	250	1000
10	Cyanide (as CN)	APHA 4500 CN D Titrimetric Method:2017	*BDL(**DL-0.0 5 mg/L)	mg/l	0.05	No Relaxation
11	Magnesium (as Mg)	APHA 3500 Mg B Calculation Method:2017	46.43	mg/l	30	100
12	Total Dissolved Solids	APHA 2540 C Gravimetric Method:2017	672.00	mg/l	500	2000
13	Sulphate (as SO <sub>4</sub> )	APHA 4500 E Turbidimetric Method:2017	62.90	mg/l	200	400
14	Fluoride (as F)	APHA 4500 F D Spands Method:2017	0.85	mg/l	1.0	1.5
15	Nitrate (as NO <sub>3</sub> )	IS 3025 (P-34), Chromotropic	22.73	mg/l	45.0	No Relaxation

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Subodh Shekhawat

Deputy Technical Manager

Page No. 1/3





## Test Report

Sample Number : VEL/W/1904090019

Report No. : VFI/W/1904090019

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
15		Method, RA:2003				
16	Iron (as Fe)	APHA 3500 Fe B 1,10 Phenanthroline Method:2017	0.40	mg/l	0.3	No Relaxation
17	Aluminium (as Al)	APHA 3111 D Direct Nitrousoxide Acetylene Flame Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.03	0.2
18	Boron (as B)	APHA 4500 C Carmine Method:2017	0.45	mg/l	0.5	1.0
19	Total Chromium (as Cr)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 3 mg/L)	mg/l	0.05	No Relaxation
20	Phenolic Compounds (C6H5OH)	APHA 5530 C Chloroform Extraction Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	0.002
21	Mineral Oil	APHA 5520 C Partition Infra Red:2017	*BDL(**DL-0.5 mg/L)	mg/l	0.5	No Relaxation
22	Anionic Detergents (as MBAS)	APHA 5540 C MBAS Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.2	1.0
23	Zinc (as Zn)	APHA 3111 B Direct Acetylene Flame Method:2017	0.45	mg/l	5.0	15.0
24	Copper (as Cu)	APHA 3111 B Direct Acetylene Flame Method:2017	0.04	mg/l	0.05	1.5
25	Manganese (as Mn)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 6 mg/L)	mg/l	0.1	0.3
26	Cadmium (as Cd)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 03 mg/L)	mg/l	0.003	No Relaxation
27	Lead (as Pb)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
28	Selenium (as Se)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
29	Arsenic (as As)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	0.05
30	Mercury (as Hg)	APHA 3112 B Cold Vapor AAS Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	No Relaxation
31	Total Coliform	IS 1622:2009	<2	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--
32	E.Coli	IS 1622:2009	Absent	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--

Subodh Shekhawat

MEENU KAUSHIK  
Senior Analyst

Subodh  
Deputy Technical Manager

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 Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
**NABL Accredited | ISO 9001 | ISO 14001 | OHSAS 18001**

## Test Report

Sample Number : VEL/W/1904090020

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
 Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
 Project Name:-Stone Mine (Associated Minor Mineral),  
 Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Report No. : VEL/W/1904090020  
 Format No : 7.8 F-01  
 Party Reference No : Nil  
 Reporting Date : 13/04/2019  
 Period of Analysis : 09/04/2019-13/04/2019  
 Receipt Date : 09/04/2019  
 Sampling Date : 09/04/2019  
 Sampling Quantity : 2.0 Ltr.  
 Sampling Type : Composite

Sample Description : Ground Water Sample  
 Location : Village-Kheribora  
 Sample Collected by : VEL Representative (Mr. Rakesh Kumar)  
 Preservation : Refrigerated  
 Sampling and Analysis Protocol : IS 10500 2012

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH (at 25°C)	APHA 4500 H+B Electrometric Method:2017	7.30	--	6.5 to 8.5	No Relaxation
2	Colour	APHA 2120 B Visual Comparison Method:2017	*BDL(**DL 5Hazen)	Hazen	5	15
3	Turbidity	APHA 2130 B Nephelometric Method:2017	*BDL(**DL 0.1NTU)	NTU	1	5
4	Odour	APHA 2150 B Threshold Odour Method:2017	Agreeable	--	Agreeable	Agreeable
5	Taste	APHA 2160 B Flavor Threshold Test Method:2017	Agreeable	--	Agreeable	Agreeable
6	Total Hardness (as CaCO <sub>3</sub> )	APHA 2340 C EDTA Titrimetric Method:2017	317.34	mg/l	200	600
7	Calcium (as Ca)	APHA 3500 Ca B EDTA Titrimetric Method:2017	51.79	mg/l	75	200
8	Alkalinity (as CaCO <sub>3</sub> )	APHA 2320 B Titration Method:2017	315.20	mg/l	200	600
9	Chloride (as Cl)	APHA 4500 Cl B Argentometric Method:2017	145.90	mg/l	250	1000
10	Cyanide (as CN)	APHA 4500 CN D Titrimetric Method:2017	*BDL(**DL-0.0 5 mg/L)	mg/l	0.05	No Relaxation
11	Magnesium (as Mg)	APHA 3500 Mg B Calculation Method:2017	30.85	mg/l	30	100
12	Total Dissolved Solids	APHA 2540 C Gravimetric Method:2017	683.00	mg/l	500	2000
13	Sulphate (as SO <sub>4</sub> )	APHA 4500 E Turbidimetric Method:2017	35.51	mg/l	200	400
14	Fluoride (as F)	APHA 4500 F D Spands Method:2017	0.74	mg/l	1.0	1.5
15	Nitrate (as NO <sub>3</sub> )	IS 3025 (P-34), Chromotropic	20.91	mg/l	45.0	No Relaxation

MEENU KAUSHIK  
 Senior Analyst

Subodh Shekhawat  
 Deputy Technical Manager



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## Test Report

Sample Number : VEL/W/1904090020

Report No. : VEL/W/1904090020

S.No.	Test Parameters	Test Method	Results	Units	Requirement as per IS:10500-2012	
					Acceptable Limits	Permissible Limits
15		Method, RA:2003				
16	Iron (as Fe)	APHA 3500 Fe B 1,10 Phenanthroline Method:2017	0.50	mg/l	0.3	No Relaxation
17	Aluminium (as Al)	APHA 3111 D Direct Nitrousoxide Acetylene Flame Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.03	0.2
18	Boron (as B)	APHA 4500 C Carmine Method:2017	0.41	mg/l	0.5	1.0
19	Total Chromium (as Cr)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 3 mg/L)	mg/l	0.05	No Relaxation
20	Phenolic Compounds (C6H5OH)	APHA 5530 C Chloroform Extraction Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	0.002
21	Mineral Oil	APHA 5520 C Partition Infra Red:2017	*BDL(**DL-0.5 mg/L)	mg/l	0.5	No Relaxation
22	Anionic Detergents (as MBAS)	APHA 5540 C MBAS Method:2017	*BDL(**DL-0.0 2 mg/L)	mg/l	0.2	1.0
23	Zinc (as Zn)	APHA 3111 B Direct Acetylene Flame Method:2017	0.32	mg/l	5.0	15.0
24	Copper (as Cu)	APHA 3111 B Direct Acetylene Flame Method:2017	0.10	mg/l	0.05	1.5
25	Manganese (as Mn)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 6 mg/L)	mg/l	0.1	0.3
26	Cadmium (as Cd)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 03 mg/L)	mg/l	0.003	No Relaxation
27	Lead (as Pb)	APHA 3111 B Direct Acetylene Flame Method:2017	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
28	Selenium (as Se)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	No Relaxation
29	Arsenic (as As)	APHA 3114 B AAS Method	*BDL(**DL-0.0 1 mg/L)	mg/l	0.01	0.05
30	Mercury (as Hg)	APHA 3112 B Cold Vapor AAS Method:2017	*BDL(**DL-0.0 01 mg/L)	mg/l	0.001	No Relaxation
31	Total Coliform	IS 1622:2009	<2	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--
32	E.Coli	IS 1622:2009	Absent	MPN/10 0 ml	Shall not be detectable in any 100 ml sample	--

Subodh Shekhawat

MEENU KAUSHIK  
Senior Analyst

Subodh  
Deputy Technical Manager

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Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
NABL Accredited | ISO 9001|ISO 14001|OHSAS 18001

## Test Report

Sample Number : VEL/S0/1909100008

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Sample Description : SOIL

Location : Near Mine Site

Sample Collected by : VEL Representative (Mr. Rakesh Kumar)

Parameter Required : As per work order

Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/1909100008

Format No : 7.8 F-01

Party Reference No : Nil

Reporting Date : 14/09/2019

Period of Analysis : 10/09/2019-14/09/2019

Receipt Date : 10/09/2019

Sampling Date : 10/09/2019

Sampling Quantity : 2.0 Kg.

Sampling Type : Composite(Dep.30cm)

Packing Status : Temp Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P-26) By pH Meter, RA:2011	7.40	-
2	Electrical Conductivity	IS :14767,By Conductivity Meter, RA:2006	0.370	mS/cm
3	Colour	SOP, SP-85, Issue No.01:2013	Brownish	-
4	Water holding capacity	SOP, SP-81, Issue No.01:2013	33.6	%
5	Bulk density	SOP, SP-80, Issue No.01:2013	1.94	gm/cc
6	Chloride	SOP, SP-85, Issue No.01:2013	52.30	mg/kg
7	Calcium (as Ca)	SOP, SP-82, Issue No.01:2013	31.70	mg/kg
8	Sodium (as Na)	SOP, SP-84, Issue No.01:2013	47.50	mg/kg
9	Potassium (as K)	SOP, SP-84, Issue No.01:2013	148.30	mg/kg
10	Organic Matter	IS:2720 (P-22), Titrimetric Method, RA:2009	0.82	%
11	Magnesium (as Mg)	SOP, SP-83, Issue No.01:2013	29.45	mg/kg
12	Available Nitrogen (as N)	IS:14648, Distillation Method, RA:2006	130.74	kg. /hec.
13	Phosphorus	SOP, SP-86, Issue No.01:2013	33.64	kg. /hec.
14	Total Zinc (as Zn)	USEPA 3050 B:1996	8.34	mg/kg
15	Total Manganese (as Mn)	USEPA 3050 B:1996	6.40	mg/kg
16	Total Chromium (as Cr)	USEPA 3050 B:1996	2.36	mg/kg
17	Total Lead (as Pb)	USEPA 3050 B:1996	2.12	mg/kg
18	Total Cadmium (as Cd)	USEPA 3050 B:1996	3.51	mg/kg
19	Total Copper (as Cu)	USEPA 3050 B:1996	5.34	mg/kg
20	Soil Texture	IS:2720 (P-4) RA:2006	Sandy	--

\*\*\*End of Report\*\*\*

Subodh Shekhawat

MEENU KAUSHIK  
(Tested By)  
Senior Analyst

Subodh  
(Checked By)  
Deputy Technical Manager



Page No. 1/1

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan)  
Corp. Off : Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)  
NABL Accredited | ISO 9001 | ISO 14001 | OHSAS 18001

## Test Report

Sample Number : VEL/S0/1909100009

Name & Address of the Party : M/s ASD RKC J.V. 40, Laxmi Nagar Near Sub City  
Hiran Margi, Sector-8, Udaipur, Rajasthan-313002,  
Project Name:-Stone Mine (Associated Minor Mineral),  
Kheribattar Plot-2, Tehsil-Dadri, Distt-Bhiwani Haryana

Sample Description : SOIL

Location : Village-Kheribora

Sample Collected by : VEL Representative (Mr. Rakesh Kumar)

Parameter Required : As per work order

Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/1909100009

Format No : 7.8 F-01

Party Reference No : Nil

Reporting Date : 14/09/2019

Period of Analysis : 10/09/2019-14/09/2019

Receipt Date : 10/09/2019

Sampling Date : 10/09/2019


Sampling Quantity : 2.0 Kg.

Sampling Type : Composite(Dep.30cm)

Packing Status : Temp Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P-26) By pH Meter, RA:2011	7.52	-
2	Electrical Conductivity	IS :14767,By Conductivity Meter, RA:2006	0.380	mS/cm
3	Colour	SOP, SP-85, Issue No.01:2013	Brownish	-
4	Water holding capacity	SOP, SP-81, Issue No.01:2013	40.20	%
5	Bulk density	SOP, SP-80, Issue No.01:2013	1.64	gm/cc
6	Chloride	SOP, SP-85, Issue No.01:2013	50.62	mg/kg
7	Calcium (as Ca)	SOP, SP-82, Issue No.01:2013	30.70	mg/kg
8	Sodium (as Na)	SOP, SP-84, Issue No.01:2013	40.40	mg/kg
9	Potassium (as K)	SOP, SP-84, Issue No.01:2013	145.70	mg/kg
10	Organic Matter	IS:2720 (P-22), Titrimetric Method, RA:2009	0.50	%
11	Magnesium (as Mg)	SOP, SP-83, Issue No.01:2013	22.80	mg/kg
12	Available Nitrogen (as N)	IS:14648, Distillation Method, RA:2006	150.41	kg. /hec.
13	Phosphorus	SOP, SP-86, Issue No.01:2013	30.81	kg. /hec.
14	Total Zinc (as Zn)	USEPA 3050 B:1996	5.30	mg/kg
15	Total Manganese (as Mn)	USEPA 3050 B:1996	5.20	mg/kg
16	Total Chromium (as Cr)	USEPA 3050 B:1996	0.47	mg/kg
17	Total Lead (as Pb)	USEPA 3050 B:1996	2.30	mg/kg
18	Total Cadmium (as Cd)	USEPA 3050 B:1996	2.50	mg/kg
19	Total Copper (as Cu)	USEPA 3050 B:1996	3.14	mg/kg
20	Soil Texture	IS:2720 (P-4) RA:2006	Sandy	--

\*\*\*End of Report\*\*\*

  
MEENU KAUSHIK  
(Tested By)  
Senior Analyst

Subodh Shekhawat  
(Checked By)  
  
Deputy Technical Manager



Page No. 1/1

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3(1)

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY HARYANA  
Bay No. 55-58, Prayatan Bhawan, Sector-2, PANCHKULA.

No. SEIAA/HR/2016/375

Dated: 04-10-2016 ✓

To

M/s ASD RKC JV  
40.1 axmi Nagar, Near Sub City Centre,  
Hiran Magri, Sector-8, Udaipur,  
Rajasthan-313002.

**Subject: Environmental Clearance for proposed Stone along with Associated Minor Minerals at Kheribattar Plot 2, over an area of 42.0 Ha Tehsil-Dadri District-Bhiwani, Haryana.**

This has reference to your application no. nil dated 30.11.2015 addressed to M. S. SEIAA Haryana received online on 30.11.2015 and subsequent letter dated 26.07.2016 seeking prior environmental clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz. Form-I, Pre-feasibility report, copy of approved Mining Plan, EIA/EMP on the basis of approved TOR and the additional clarifications furnished in response to the observations of the State Expert Appraisal Committee (SEAC) constituted by MOEF & CC, GOI vide their Notification 21.08.2015, in its meetings held on 13.01.2016 and 03.08.2016.

[2] The SEAC has examined the application and noted that the proposal is for Mining of Stone along with Associated Minor Minerals at Kheribattar Plot 2, over an area of 42.0 Ha at Tehsil- Dadri District-Bhiwani, Haryana, Khasra no.139, 140 & 141 min. The Letter of Intent (LOI) dated 21.10.2015 has been granted for an area of 42.0 Ha having Village- Kheribattar Plot 2. The validity of Mining Scheme in the Mining plan is for 5 years. The project proponent has submitted copy NOC from Forest Department. The SEAC appraised this project under category 1(a) as category B-1 project as other mine lease area is also located within 500 meter. The project proposal has been appraised as per proper procedure of EIA Notification i.e. approval of TOR and Public hearing.

**Brief details of the project:**

1. Category/Item no. (in schedule):	1 (a) B-1
2. Location of Project	Village- Kheribattar Plot 2, Tehsil-Dadri District-Bhiwani, Haryana over an area of 42.0 Ha.
3. Project Details Khasra No.	Mining of Stone along with Associated Minerals "Kheribattar Plot 2", over an area of 42.0 Ha Khasra no.139, 140 & 141 min
4. Production capacity	81,66,000 MT/Year (27220 Ton/day)
Project Cost	4.23 Crores



5.	Water Requirement & Source	10 KLD through Tankers		
		Dust suppression & Wet Drilling	4 KLD	
		Plantation	4 KLD	
		Drinking	2 KLD	
6.	Environment Management Plan Budget	54 lakh		
7.	CSR Activates Budget	24.5 Lakh		
8.	Production (Year wise)	<b>Year</b>	<b>Bench mrl</b>	<b>Production</b>
		First	381,372,363,354,336,327	70 lakh MT
		Second	327, 318, 309, 300	70 lakh MT
		Third	300, 291, 282	75 lakh MT
		Fourth	282 & 273	80 lakh MT
		Fifth	264 & 255	81.66 lakh MT
9.	Green belt plantation	<b>Year of Plantation</b>	<b>Proposed Plantation</b>	
		I Yr.	700 Trees	
		II Yr.	700 Trees	
		III Yr.	700 Trees	
		IV Yr.	700 Trees	
		V Yr.	700 Trees	
10.	Machinery required	Excavator, Dozer Crawler Mounted, Wagon Drill with inbuilt Compressors, Air Compressor, Rock Breaker, Diesel Operated Pump, Explosive Van		

The SEIAA in its 95<sup>th</sup> meeting held on 26.08.2016 decided to agree with the recommendations of SEAC to accord Environment Clearance to this project by imposing the following conditions.

**SPECIFIC CONDITIONS:**

- [1] This Environment Clearance is granted for Production of Stone along with Associated Minerals as per below mentioned figures.

Year	Bench mrl	Production
First	381,372,363,354,336,327	70 lakh MT
Second	327, 318, 309, 300	70 lakh MT
Third	300, 291, 282	75 lakh MT
Fourth	282 & 273	80 lakh MT
Fifth	264 & 255	81.66 lakh MT

- [2] The project proponent shall obtain prior CTO under Air Act and Water Act from HSPCB and effectively implement all the conditions stipulated by the HSPCB.
- [3] The project proponent shall carry out mining activity strictly as per the approved Mining Plan.
- [4] The project proponent shall ensure that the mining operations shall not intersect groundwater table and the mining operation should be restricted at least 3 meter above the ground water table.

- [5] Topsoil shall be stacked temporarily at earmarked sites only and it shall not be kept unutilized for a period more than three years; it shall be used for land reclamation and plantation in mined out areas.
- [6] The project proponent shall ensure that no natural water course/water body shall be obstructed due to any mining operations.
- [7] The over burden generated shall be stacked at earmarked dump site (s) only and it shall not be kept active for long period of time. The maximum height of the already existing waste dumps shall not exceed 5 meter in single terraces and the slope angle shall not exceed 28° as per norms.
- [8] The dumping site selected and proposed shall be used for OB dump at the designated site within the lease area as per the approved mine plan. In no case the overburden should be dumped outside the lease area.
- [9] The benches height and slope shall be maintained as per approved mining plan.
- [10] Waste dump shall be terraced. The height of the dump and its slope shall not exceed as suggested in the approved mining plan. A retaining wall shall be constructed at the toe of the dump.
- [11] Garland drains shall be constructed to prevent the flow of the water in the dumps.
- [12] Check dams shall be constructed in the seasonal rivulets to prevent the flow of fines to low lying areas during rains.
- [13] The total waste generated in the present plan period shall be as envisaged, which shall be accommodated in old dumpsite in addition to the waste already dumped. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self sustaining. Compliance status shall be submitted to HSPCB and MOEF Zonal Office, Chandigarh on six monthly bases.
- [14] Drills shall either be operated with dust extractors or equipped with water injection system.
- [15] The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slop of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.
- [16] Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, OB dumps and mineral dumps to arrest flow of silt and sediment. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de-silted, particularly after monsoon and maintained properly.
- [17] Garland drains: setting tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps and sump capacity shall 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 shall also provide adequate pits shall be constructed at the corners of the garland drains and de-silted.

- [18] Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- [19] Green belt should be developed as per the proposed plantation as given in the proposal. Plantation should be carried out in phased manner. The green belt should be developed in the safety zone around the mining lease by planting the native species around ML area, OB dumps, backfilled and reclaimed around water body, road etc. in consultation with the local DFO/Agriculture Department.
- [20] Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. The project proponent shall adopt water curtain technology to suppress the RPM as per the assurance given. It shall be ensured that the Ambient Air Quality Parameters conform to the norms prescribed by the CPCB.
- [21] The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- [22] Regular monitoring of ground water level and quality shall be carried out in and around the mine lease. The monitoring shall be carried out four times in a year-pre monsoon (April-May), monsoon (August), post monsoon (November); winter (January) and the data thus collected may be sent regularly to MOEF Regional Office, Chandigarh and Regional Director CGWB.
- [23] Data on ambient air quality and stack emissions shall be submitted to Haryana Pollution Control Board once in six months carried out by MOEF/NABI/CPCB/Government approved lab.
- [24] Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded. The project proponent shall ensure that the vehicle must have pollution under control certificate.
- [25] Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders shall be implemented.
- [26] The blasting operation will be carried out as per the norms of Director (Mines & Safety), Gaziabad. Take all safety measures as per the various mining regulations.
- [27] The project proponent shall take all precautionary measures during mining operations for conservation and protection of endangered fauna, if any, spotted in the study area. A plan for conservation shall be drawn and approved by the State



Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the wildlife conservation plan so prepared specific to the project site shall be effectively implemented. A copy of action plan may be submitted to the HSPCB and MOEF, Regional Office, Chandigarh within 3 months.

- [28] As envisaged, the Project Proponent shall invest at least an amount of Rs. 54 lakh as cost for implementing various environmental protection measures including recurring expenses per year.
- [29] A sum of Rs. 24.5 lakh shall be earmarked by the Project proponent for investment as CSR on socio economic up-liftment activities of the area particularly in the area of habitat, health or education, training programme of rural women & man provide the kit for employment generation. The proposal should contain provision for monthly medical camps, distributions of medicines and improvement in educational facilities in the nearby schools. Details of such activity along with time bound action plan be submitted to HSPCB/SEIAA Haryana before the start of operation.
- [30] Budgetary provision of Rs. 08 lakh per year earmarked for the labours working in the Mine for all necessary infrastructure facilities such as health facility, sanitation facility, fuel for cooking, along with safe drinking water, medical camps and toilets for women, crèche for infants should be made and submitted to HSPCB at the time of CTO/SEIAA Haryana. The housing facilities should be provided for mining labours.
- [31] A Final Mine Closure Plan along with details of corpus fund shall be submitted to the SEIAA well within the stipulated period as prescribed in the minor mineral concession rules 2012.
- [32] The water reservoir, which would be created/available during post closure (all pits), shall be provided with suitable benches and fencing to provide the access to the water body and safety.
- [33] The project proponent shall ensure that the EC letter as well as the status of compliance of EC conditions and the monitoring data are placed on company's website and displayed at the project site.
- [34] The project proponent shall ensure that loading in Trucks do not exceed the norms fixed by the Transport Department as per relevant rules.
- [35] The project proponent shall ensure approach roads are widened and strengthened as per requirements fixed by PWD and district administration before the start of the work.
- [36] The project proponent shall ensure that all measures are taken simultaneously for safeguard and maintenance of the health of the workers.

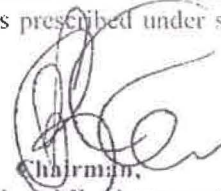
9(5)

[37] The project proponent shall ensure supply of drinking water through RO.

**GENERAL CONDITIONS:**

- [i] Any change in mining technology/scope of working shall not be made without prior approval of the SEIAA.
- [ii] Any change in the calendar plan including excavation, quantum of mineral and waste shall not be made.
- [iii] Periodic monitoring of ambient air quality shall be carried out for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations (minimum 6) shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring shall be decided in consultation with the Haryana State Pollution Control Board (HSPCB). Six monthly reports of the data so collected shall be regularly submitted to the HSPCB/CPCB including the MOEF, Regional office, Chandigarh.
- [iv] Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM etc. shall be provided with earplugs/muffs.
- [v] Waste water (workshop and waste water from the mine) shall be properly collected & treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 93 and 31<sup>st</sup> December 1993 (amended to date). Oil and grease trap shall be installed before discharge.
- [vi] Personnel working in dusty areas shall wear protective respiratory devices they shall also be provided with adequate training and information on safety and health aspects.
- [vii] Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- [viii] The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the HSPCB and the Regional office of MOEF located at Chandigarh.
- [ix] The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the northern Regional Office of MoEF, the respective Office of CPCB, HSPCB and SEIAA Haryana.
- [x] The SEIAA, Haryana reserves the right to add new conditions, modify/annual any of the stipulated conditions and/or to revoke the clearance if implementation of any of the condition stipulated by SEIAA, Haryana or any other competent authorities is not satisfactory.
- [xi] Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- [xii] The above conditions will be enforced, inter alia, under the provision 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 (all amended till date) and rules made hereunder and also any other orders passed by the Hon'ble Supreme Court of India/High Court of Haryana and other Court of law relating to the subject matter.

- [xiii] The Project proponent should inform the public that the project has been accorded Environment Clearance by the SEIAA and copies of the clearance letter are available with the Haryana State Pollution Control Board & SEIAA. This should be advertised within 7 days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region and the copy of the same should be forwarded to SEIAA Haryana. A copy of Environment Clearance conditions shall also be put on project proponent's web site for public awareness.
- [xiv] All the other statutory clearances such as the approvals for storage of diesel from the Chief Controller of Explosives, Fire department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (protection) Act, 1972 etc. shall be obtained, as may be applicable, by Project proponent from the competent authority before the start of mining operation.
- [xv] That the grant of this EC is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time being in force, rests with the industry/unit/project proponent. 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 National Green Tribunal Act, 2010.



Chairman,  
State Level Environment Impact  
Assessment Authority, Haryana, Panchkula.

Endst. No. SEIAA HR/2016/

Dated:.....

A copy of the above is forwarded to the following:

1. The Director (IA Division), MoEF&CC, Gol, Indra Paryavaran Bhavan, Zor bagh Road-New Delhi.
2. The Regional office, Ministry of Environment, Forests & Climate Change, Govt. of India, Bay's no. 24-25, Sector 31-A, Dakshin Marg, Chandigarh.
3. The Chairman, Haryana State Pollution Control Board, C-11, Sector-6, Pkl.
4. The Director General, Mines & Geology Department Haryana, Chandigarh.

Chairman,  
State Level Environment Impact  
Assessment Authority, Haryana, Panchkula.