

*EXECUTIVE SUMMARY
OF EIA/EMP STUDY*

FOR

**JALWA QUARTZ-QUARTZITE (SILICA STONE) MINE
(19.8 Hec.)**

AT

**Vill.: BISHANPUR ; P.S. : Piri Bazaar
Block : Surajgarha Dist.: LAKHISARAI
(BIHAR)**

Of

**M/s IDIO CONSTRUCTION & INDUSTRIES (INDIA)
LTD.**

**Regd. Address : M-104, Bhaskar Bhawan, 01st Floor, Khajpura, Bailey Road
(Near Pillar No. 21) ; Raja Bazaar, Dist.: PATNA – 800 014 (Bihar), India**

SUMMARY

ENVIRONMENTAL IMPACT ASSESSMENT

1.0 Introduction

M/s IDIO Construction & Industries (India) Limited (IDIO), owns a mining project of Quartz-Quartzite (Silica Stone) at Vill. Bishunpur, Block Surajgarha, Dist. Lakhisarai, State Bihar, India.

Mining Lease for Quartz-Quartzite (Silica Stone) (Minor Mineral) over an area of 19.80 Ha. (48.92 Acres) was granted on 23rd Aug.'2001 by Govt. of Bihar for a period upto 30 years i.e. 22nd Aug.'2031 in favour of IDIO Construction and Industries (India) Ltd. Mining activities were started in the year 2002.

Mining Development Officer, Lakhisarai stopped the mining activity due to non availability of Environmental Clearance , vide letter No. 464 dated 05.11.2014.

As per observation of Hon'ble NGT and MoEFCC, Govt. of India, IDIO has submitted EC proposal vide Proposal No. SIA/BR/MIN/73047/2022 under violation clause as per EIA Notification 2006 and amendments thereof.

2.0 Project Location and Environmental Sensitivity

<i>PARTICULARS</i>	<i>DETAILS</i>
• Location	Vill. Bishanpur, Kajra, Dist. Lakhisarai
• Latitude	25 ^o 12'11.8"to 25 ^o 12'23.8"N
• Longitude	86 ^o 16'33.3" to 86 ^o 17'07.9"E
• Elevation above mean sea level	52-64 m.
• Total land Area.	19.8 Ha.
• Nearest Railway Station	Abhaipur Railway Station: 5 Km.
• Nearest Highway	NH-80 (7.5 Km.)
• Nearest Major City	Lakhisarai, 20 km
• Nearest River	Kiul River – 8.5 Km. (N) Garkhe nadi : 3 Km. N
• National Park, Reserve Forest	<i>Not exist within 5 km. radius</i> <i>(Bhimbandh Wildlife sanctuary is more than 5 Km. away from IDIO mining lease area</i>
• Wildlife Sanctuary	
• Biosphere Reserve, Hill & Valleys	

3.0 Salient Features of the Project

Scheme of Mining Plan has been approved by Deptt. of Mines & Geology, Govt. of Bihar vide letter No. 2497 Dt: 28.08.2020. Mineable reserve is based on the feasibility studies over Measured Mineral Resources and indicated mineral resources. Total mining area is 19.8 Ha. Total Mineable Reserve has been estimated as 11945470 Tonnes. Mineable ore reserve has been calculated from the resources in the area considering the ore which is not mineable in view of blocked ore in ML boundary and ultimate pit limit as calculated from the Geological plan & sections. In this case it is found that some ore will be blocked. Thus the mineable reserve estimated on the basis of measured and indicated category is as tabulated below.

The Summary of Mineable Reserve:

Category of Resource	Mineable Reserves in Tonnes		Non Mineable in Tonnes
Proved (111)	3368550	Feasibility Mineral Resources (211)	1135250
Probable (122)	857663	Pre-Feasibility Mineral Resources (222)	513425
TOTAL	4226213		1648675

The Jalwa Quartz-Quartzite Mine is a small mining project, whose project cost is 3.5 Crores approx. It involves proposed production of 502968 tone / annum only.

4.0 Process Description

Mine will be mechanized (OTFM) mine. Blasting is required as the deeper layers of quartzite are too hard for pickaxes. At present mechanized operation is going on and benches are worked, in mineral. Though the height of bench varies depending on the thickness of the concerned strata, the maximum height is kept below 6 m, where the thickness of mineral exceeds this limit an additional bench is opened.

The faces are laid so as to start from the edge of the quarry and advanced inwards towards the center of the property.

The length of the faces in mineral varies from place to place. The faces are not necessarily straight, the main objective being to maintain despatchable grade.

5.0 Existing Baseline Environment Scenario :

Baseline environment data for all the components has been collected during the period Jan. – Mar.'2022. The detail findings are here as under ;

[i] Meteorology :

The average temperature was recorded to be in the range of 7.0 – 38.0 °C during the study period. The maximum reading was found to be 38.0 °C during Mar.'2022 and the minimum was found to be 7.0 °C during Jan.'22.

During the study the average relative humidity was found to be in the range of 30 – 72. The minimum values was found during Mar.'22 and maximum value was found during Jan.'2022.

The wind is predominantly blowing from E to W direction. The wind speeds are of the range of 0.52 – 11.8 m/sec. and the calm condition is 16.7 %. The periodic wind rose diagrams have been provided in Figure 3.4

No rainfall was observed during the study period.

[ii] Demographic Profile

Total population in the Surajgarha CD Block in accordance to the 2011 census data is 290998 persons, in 48654 number of households. The total male population is 154509 and total female population is 136489.

The Scheduled Caste (SC) population is 42225, out of which 22424 are males and 19801 females. The Scheduled Tribe (ST) population is 5718, out of which 2919 are males and 2799 females. The total Scheduled Tribes population is very less.

The Sex Ratio of Surajgarha Block is 883 . Thus for every 1000 men there were 883 females in Surajgarha Block. Also as per Census 2011, the Child Sex Ration was 919 which is greater than Average Sex Ratio (883) of Surajgarha Block.

[iii] Socio Economic Profile

In Surajgarha Block out of total population, 92810 were engaged in work activities. 51706 of workers describe their work as Main Work (Employment

or Earning more than 6 Months) while 41104 were involved in Marginal activity providing livelihood for less than 6 months.

[iv] Topography and Land Use

The district has a diverse landscape ranging from hills to flood plains. The major geomorphic units are rocky upland, pediplain, alluvial plain and flood plains.

The Rocky Upland area comprises series of Kachhua and Kajra hills. These hill tracts constitute elevated and rugged landmasses surrounded by alluvial plains. The altitude of hills varies from 250 to 500m amsl. It comprises mainly quartzite, phyllite and schist of Kharagpur formation. The rocks of Kharagpur formation have undergone tectonic deformation giving rise to variety of deformational structures. The rocky uplands are limited mainly in Surajgarha block.

[v] Water Quality

8 ground water samples & 2 surface water samples were collected & analyzed from the study area.

Ground Water Quality

All the water samples were bearing an agreeable taste. The colour of all the water samples was found to be <5 Hazen unit. Odour of all the water was unobjectionable.

The water samples were found to be free from contaminations due to Fluoride & Boron. The dissolved solids level in the water samples were found in the range of 364 - 626 mg/l., which is within the permissible limits of IS 10500:2021.

The chlorides were found to be in the range of 16 - 64 mg/l. The Sulphates were found in the range of 22.4 – 36.8 mg/l. Total hardness values in the range of 228 - 508 mg/l. It is within the permissible limits of IS 10500:2012. Total Alkalinity values were in the range of 248 - 556 mg/l.

Values of Iron are in range of 0.38 – 0.74 mg/l. & values for Zinc are in range of 0.38 – 0.46 mg/l.

All other parameters have been found to be within the permissible limits prescribed under the IS : 10500 :2012 for drinking water.

Surface Water Quality

Surface water characteristics shows that it can be best used for outdoor bathing, irrigation and other domestic purposes without any treatment except for drinking purposes. As per classification of IS 2296:1982, surface water of the study area falls under Class B.

[vi] Ambient Air Quality :

To ascertain the baseline Ambient Air Quality status of the study area, monitoring of AAQ was conducted at 8 locations around the project area. Summary results are as under ;

Stn. No.	Location Name	24-hourly average concentration ($\mu\text{g}/\text{m}^3$)									
		PM ₁₀		PM _{2.5}		SO ₂		NO ₂		CO (mg/m ³)	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
AQ1	Project Site	35.2	53.2	21.6	32.1	5.2	7.3	9.2	20.1	0.05	0.08
AQ2	Surajgarha	46.3	67.1	27.4	41.2	6.5	14.8	18.4	33.9	0.10	0.27
AQ3	Abhaipur	38.6	58.3	25.1	33.2	5.7	11.8	10.9	24.1	0.09	0.14
AQ4	Kajra	44.0	60.2	27.2	36.6	5.4	12.2	15.6	28.8	0.05	0.12
AQ5	Kiranpur	39.5	55.2	21.8	28.3	5.1	9.5	12.6	26.6	0.06	0.13
AQ6	Ratanpur	40.3	56.3	22.7	29.4	5.3	10.4	11.4	26.4	0.05	0.18
AQ7	Pokhrama	48.6	62.8	28.7	37.2	5.1	12.0	10.2	22.4	0.05	0.12
AQ8	Kawadpur	45.2	63.1	23.2	36.5	5.6	11.5	10.5	26.5	0.05	0.11

It can be observed from the above table the AAQ status around the project area is within the limits of NAAQS, 2009.

6.0 Environmental Impacts of Proposed Mining Project ;

There are two sources from which the environment of the area can be affected if suitable control measures are not strictly applied. These are, discharge of waste water either on land or in surface water bodies and emissions from the project operations.

Both these two aspects have been taken into consideration while envisaging the proposed mining project.

The water required for the project will be taken from nearest village or dugwell at project site. Only 8 KLD water will be required for IDIO mining project operation. No industrial waste water will be generated. The project area falls under safe category as per categorization of CGWA.

Thus, no negative impact is anticipated on the water quality and water use due to IDIO mining project.

The mining is done by opencast OTFM process of handling, transportation, and storage of lime in the mining activities are prone to generation of high levels of fugitive dust that may increase the levels of PM to high extent. The probable sources of pollution due to mining activities are as follows.

- Mining activity (drilling, blasting, loading)
- Transport of Overburden or soil for dumping/ backfill and limestone to sorting/sizing
- Dumping of waste
- Sorting of quartz-quartzite (Silica Stone) Mine and loading
- Transportation of sorted quartz-quartzite

The effects of air pollutants upon receptors are influenced by concentrations of pollutants and their dispersion in the atmosphere. Air quality modelling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards. The efficient management of air quality requires the use of modelling techniques to analyze the patterns of pollutant concentrations from many individual sources of air pollutants operating simultaneously.

The predicted GLCs of pollutants after commissioning of the proposed project is significant to add up on the existing ambient air quality.

The estimated cumulative GLCs after commissioning of the proposed project are found to be within the National Ambient Air Quality Standards 2009 prescribed by CPCB.

Hence it can be concluded that the impact on Ambient Air Quality of the nearby areas by the IDIO mining project will be less significant, provided that adequate air pollution control system will be adopted and implemented.

Moreover, proposed air pollution control measures, viz., water sprinkling and green belt development with extensive plantation of Dust controlling species for controlling dust emissions, will prevent and minimize air pollution load due to proposed mining project.

Emissions due to mineral handling during mining operation are not much and restricted to the lease area only. Air pollution is caused mainly due to dust generation added with gaseous emission from transportation activities along with mining operation like drilling, blasting, loading, haulage etc. Proper mitigation measures will be practiced during mining activities to control air pollution load below the prescribed limits.

Following measures shall be taken to mitigate the effect of mining operation over ambient air environment:

- Water spraying on mine faces to control dust emanating from loading and handling operations;
- Water spraying over the muck pile to be loaded in order to reduce dust generation during loading operations;
- Water sprinklers along the mine haulage roads to reduce dust generation during plying of dumpers on the haul road;
- Trucks transporting materials will be covered to reduce dust emission;
- Periodic water sprinkling on haul roads to minimize dust emissions;
- Extensive plantation of trees of different variety in limestone storage yard;
- A good housekeeping and proper maintenance which will help in controlling pollution;
- Periodical monitoring of air samples at various locations.
- All over-burden dumps shall be stabilized with legumes and grass to prevent the erosion of soil and arrest the dust emission during windy days.
- Dust mask shall be provided to all workers working in dusty atmosphere; and Regular maintenance of vehicles shall be carried out in order to control emissions;

7.0 Solid Waste Generation and Management

There will be no overburden or waste generated during mining which will be backfilled in the pit.

8.0 **Impact on Socio Economic Status**

Proposed mining project may change socio economic condition of the nearby areas. As there will be flow of financial and material resources, there remains a large possibility of growth of population in the business, trade, commerce and service sector. The inflow of financial and material resources would contribute towards changing the socio economic environment of the areas as this would introduce a mixed culture emphasizing urban traits in place of traditional, prevalent rural customs. The economic, cultural and technological changes are likely to induce social stress and ethical changes. All these would change the local life style.

9.0 **Environmental management plan**

A comprehensive Environmental Management Plan has been prepared under which the unit will be adopting measures in preserving the environment from degradation. Important among those are Green Belt Development Plan which would act as Noise damper also. The environmental monitoring program on all components of environment has been drawn and indicated in the EMP in detail which is a part of EIA.

IDIO will adopt all measures for better environmental management. IDIO will develop & maintain green belt all around the mining project premises for better environmental management.

An amount of Rs 105 lakhs has been allocated for Environment Management activities. Rs. 5 lakhs will spend on CER activities in phase wise manner after start of mining activities.

10.0 **Occupational Health and Safety**

IDIO will adopt all precautionary measures to reduce the risk of exposure of employees to occupational safety and health hazards. Pre & post medical check-ups will be done of all the employees. Employees will be regularly examined and the medical records will be maintained for each employee as per requirement of The Factories Act'1948.

11.0 **Rainwater Harvesting**

The mine will be worked as opencast mechanized method and mining operations will generate rainwater storage pits at the end of mining. The total estimated area of pits

will be 9.78 ha (after life of the mine). Cattle will be fed for drinking water on the available water reservoir. The water reservoir will attract birds and will improve aquatic environment.

12.0 Conclusion

- No Industrial Waste water will be generated due to operation of proposed mining project of IDIO.
- Ground water characteristics are within the limits of IS 10500:2012.
- Ambient Air Quality within the study area are within the National Ambient Air Quality Standards (Nov.'2009).
- Ambient Noise Level of the study area is also well within the limits for Industrial Area.
- No Solid waste will be generated from the IDIO mining project.
- Adequate green belt will be developed and will be maintained around the mining site of IDIO.
- IDIO mining project will result in upliftment of socio economic condition of the study area. Approx. 125 nos. of local villagers will be employed in the IDIO mining project.
- CER activities proposed will improve the health infrastructure of the area and skill development of local youths.

