

DCBL/PJ/MPPCB/F-V/2023-24

27.09.2024

To,  
The Regional Officer,  
Madhya Pradesh Pollution Control Board,  
Satna (M.P).

**Subject:** Submission of Environment Statement in Form-V for the year 2023-24 pertaining to Pagara- Jhiriya Limestone Mine bearing PCB ID- 139205 of M/s. Dalmia Cement (Bharat) Limited.

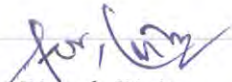
Dear Sir,

With reference to the subject above, we are herewith submitting the Environment Statement in Form-V for the year 2023-24 pertaining to Pagara- Jhiriya Limestone Mine (395.965 Ha) in Village – Pagara, Jhiriya Bajpaein, Jhiriya Kothar & Jhiriya Koparihan, Tehsil- Rampur Baghelan, District- Satna (M.P) of M/s. Dalmia Cement Bharat Limited.

We request you to kindly acknowledge the Receipt.

Thanking You,

Yours Faithfully,  
For M/s. Dalmia Cement Bharat Limited

  
Dinesh Dixit  
(HOD Mines)

Encl: a/a





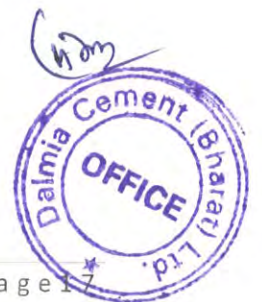
# ENVIRONMENTAL STATEMENT IN FORM-V

(Under Rule-14, Environmental protection Rules, 1986)

(FY 2023-2024)

Pagara-Jhiriya Limestone Mine, Satna

Dalmia Cement Bharat Limited



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## EXECUTIVE SUMMARY

The proposed Pagara-Jhiriya Limestone Mine (ML Area: 395.965 ha including mining area 185.57 ha, non-mining area 208.395 ha and 2 ha area for installation of Crusher) with total excavation of 2.41 Million TPA [Limestone: 1.5 MTPA, Soil: 0.56 MTPA and OB: 0.35 MTPA] with installation of crusher of 500 TPH Capacity near Villages: Pagara, Jhiriya Kothar, Jhiriya Bajpaien & Jhiriya Koparihan, Tehsil – Rampur Baghelan (Previously-Amarpatan), District – Satna, Madhya Pradesh.

The State Government of Madhya Pradesh has granted the mining lease vide order no. F-3- 8/2013/12-1, dated 20.03.2015 over 395.965 ha after curtailing prohibited area such as Nallah, Road, Public Utilities out of 735.296 ha PL area. ML was executed & registered on 27.07.2015 and on 06.11.2015 respectively. The ML has been granted in favour of DCBL for captive use for cement manufacturing.





## CHAPTER – I

### INTRODUCTION

#### 1.1 GENESIS:

The Gazette Notification vide G.S.R No. 329 (E) dated 13th March, 1992 and subsequently renamed to 'Environmental Statement' vide Ministry of Environment & Forests (MOEF), Govt. of India gazette notification No. G.S.R No. 386 (E) Dated 22 April 1993 reads as follows.

"Every person carrying on an industry, operation or process requiring consent under section 25 of the Water Act, 1974 or under section 21 of the Air Act, 1981 or both or authorisation under the Hazardous Waste Rules, 1989 issued under the Environmental Protection Act, 1986 shall submit an Environmental Audit Report for the year ending 31<sup>st</sup> March in Form V to the concerned State Pollution Control Board on or before the 30<sup>th</sup> day of September every year."

In compliance with the above, the work of Environmental Statement for Dalmia Cement is submitted to M. P. Pollution Control Board by GM (Environment), Dalmia Cement, Satna.

#### 1.2 MINE DESCRIPTION:

<b>Name of the Project</b>	Pagara-Jhiriya Limestone Mine					
<b>Location Village</b>	Pagara, Jhiriya Kothar, Jhiriya Bajpaien & Jhiriya Koparihan					
<b>Tehsil</b>	Rampur Baghelan (Previously Amarpatan)					
<b>District</b>	Satna (M.P.)					
<b>Lease Area</b>	395.965 ha (including mining area 185.57 ha, non-mining area 208.395 ha and area for installation of Crusher 2 ha)					
<b>Land Type</b>	<b>Village Name</b>	<b>Block</b>	<b>Non-Forest Land (in ha)</b>		<b>Forest Land (in ha)</b>	<b>Area (in ha)</b>
			<b>Private</b>	<b>Govt.</b>		
	<b>Pagara</b>	P-1	146.71	Nil	Nil	146.71
	<b>Jhiriya Kothar</b>	JK-1	30.366	Nil	Nil	30.366
		JK-2	95.011	3.724	Nil	98.735
	<b>Jhiriya Bajpainen</b>	JB-1	83.4	Nil	Nil	83.4
	<b>Jhiriya Koparihan</b>	JKO-1	36.594	0.16	Nil	36.754
<b>Total</b>		<b>392.081</b>	<b>3.884</b>	<b>Nil</b>	<b>395.965</b>	
<b>Latitude &amp; Longitude</b>	24°26'41.5" N to 24°28'18.3" N 81°09'42.6" E to 81°12'27.6" E					
<b>Topo sheet No.</b>	Core zone – G44V3 Buffer zone – G44V2, G44V3, G44V6 & G44V7					
<b>Elevation Range</b>	319-328m AMSL					



<b>Probable Mineral Reserve</b>	63.20 36.46 Million Tonnes
<b>Targeted Production</b>	Total Excavation: 2.41 Million TPA Limestone: 1.5 Million TPA 1,156,251 Soil: 0.56 Million TPA 0 OB: 0.35 Million TPA 1,750,000 m <sup>3</sup> (3,500,000) Crusher: 500 TPH Capacity 1,506,251

### 1.3 COMMUNICATION:

<b>Inter District Boundary</b>	Rewa District ~4.0 km in East direction
<b>Nearest Highway</b>	NH-30 (Earlier NH-7) (~ 2.0 km in NNW direction)
	NH-39 (Earlier NH-75) (~2.5 km in NNW direction)
<b>Nearest Railway Station</b>	Turki Railway Station (~9.0 km in NNW direction)
<b>Nearest Airport</b>	Prayagraj (Allahabad) 116.0 NNE
	Khajuraho Airport 121.0 NW

### 1.4 ENVIRONMENTAL SCENARIO:

The Environmental monitoring was carried out quarterly as per guideline of Ministry of Environment and Forests (MOEF) by on quarterly basis.

Accordingly, Ambient Air Quality and Noise levels is being monitored at four stations along with the Mine Discharge Water quality and Ground / Drinking Water quality. Ground water levels in designated dug wells is also monitored.

The Environmental monitoring result for four quarters is appended as Annexure- I & II. The environmental monitoring results for the year 2023-2024 as given below:

#### AMBIENT AIR QUALITY

- The PM10 concentration was found in the range of 63.3 to 80.9 µg/m<sup>3</sup>.
- The PM2.5 concentrations was found in the range of 31.4 to 47.6 µg/m<sup>3</sup>.
- The SO2 concentration was found in the range of 6.9 to 9.0 µg/m<sup>3</sup>.
- The NO2 concentration was in the range of 18.0 to 23.8 µg/m<sup>3</sup>.
- The O3 concentration was in the range of 17.1 to 23.4 µg/m<sup>3</sup>.
- The NH3 concentration was in the range of 15.2 to 17.9 µg/m<sup>3</sup>.

#### WATER QUALITY

The analysis result reveals that all the parameters are below permissible limits prescribed by Ministry of Environment & Forests (MOEF).

#### NOISE LEVEL



The noise level was found in the range of 47.5 to 55.8 dB(A) in Day time & 35.6 to 40.8 dB(A) at Night time. The noise level recorded is below permissible limit prescribed by Ministry of Environment and Forest (MoEF).

**SOIL QUALITY:**

The Soil analysis result reveals that all the parameters are below permissible limits prescribed by Ministry of Environment & Forests (MOEF).





**ENVIRONMENTAL STATEMENT**  
**FORM – V**

Environmental Statement for the period of FY 2023-2024

**PART – A**

**(I) NAME AND ADDRESS OF THE MINE**

<b>Name of the Project</b>	Pagara-Jhiriya Limestone Mine
<b>Location Village</b>	Pagara, Jhiriya Kothar, Jhiriya Bajpaien & Jhiriya Koparihan
<b>Tehsil &amp; Post</b>	Rampur Baghelan (Previously Amarpatan)
<b>District</b>	Satna (M.P.)

**(II) INDUSTRY CATEGORY**

Category "B"

**(III) PRODUCTION CAPACITY**

Total Excavation: 2.41 Million TPA  
Limestone: 1.5 Million TPA  
Soil: 0.56 Million TPA  
OB: 0.35 Million TPA  
Crusher: 500 TPH Capacity

**(IV) TOTAL PRODUCTION IN FY 2023-2024**

Limestone Production in FY 2023-2024 is **285Tons**.

**PART – B**

**WATER AND RAW MATERIAL CONSUMPTION**

**(I) WATER CONSUMPTION (Cu.m/day)**

--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

**(A) WATER CONSUMPTION PER UNIT OF PRODUCT**



--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

**(II) RAW MATERIAL CONSUMPTION:**

--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

**PART – C**

**POLLUTION GENERATED**

<b>Pollution</b>	<b>Quantity of pollution generated</b>	<b>Percentage variation from prescribed standards with reasons</b>
AMBIENT AIR	Analysis results are given in Annexure-I.	Ambient air quality result shows that the values of PM10, PM2.5, SO <sub>2</sub> , Nox, O <sub>3</sub> , NH <sub>3</sub> , As, C <sub>6</sub> H <sub>6</sub> , BaP, Ni & Pb are well within prescribed standards.
WATER	Water Analysis results are given in Annexure-II.	No effluent is discharged into in Land Surface water.
SOIL	Analysis results are given in Annexure-III	All Results are within prescribed Limit.

**PART – D**

**HAZARDOUS WASTE**

**(As specified under Hazardous waste management and handling Rules, 1989)**

--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

**PART – E**



## SOLID WASTE

--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

### PART – F

**PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF CONCENTRATION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTE AND INDICATE THE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTE.**

--- NIL ---

Mining operations are in the very Nascent stage. Mine development work is in progress. The production and dispatch of limestone from Mines is at a very meagre level as the construction of captive cement plant is delayed.

### PART – G

**IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON COST OF PRODUCTION.**

In order to carry out mining in an eco-friendly manner following pollution control measures have been implemented.

#### 1.0 AIR POLLUTION CONTROL MEASURES:

The following measures have been taken to control air pollution.

- (I) Water sprinkling is done on transportation road with the help of water tanker.
- (II) Regular sprinkling of water at transfer and loading points.

#### 2.0 WATER POLLUTION CONTROL MEASURES:

Presently no effluent is generated, in future if effluent water is generated, we will comply General Standard of MOEF for Class- A effluent.

#### 3.0 NOISE POLLUTION CONTROL MEASURES

- (I) Regular maintenance of machines and other equipment at workshop will be regularly followed.
- (II) Providing green belt around core activity area, along road side in colony and in other vacant space.

#### 4.0 LAND DEGRADATION CONTROL MEASURES





--- NIL ---

Mining operations are in the very Nascent stage and Land purchasing is in progress.

**PART – H**

**ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION.**

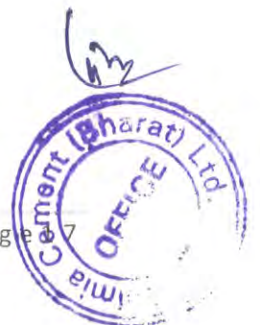
The following are the additional investment proposals for environmental protection:

- (I) The Environmental monitoring of the mine will be continued quarterly as per the guideline of Ministry of Environment and Forest (MoEF).
- (II) Necessary Consent for discharge will be taken from Competent Authority

**PART – I**

**ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENTAL PROTECTION AND ABATEMENT OF POLLUTION.**

The Environmental Monitoring is carried out quarterly for the mine as per the guideline of Ministry of Environment and Forest (MoEF) and based on the result there of, Dalmia Cement Bharat Limited takes necessary action if needed.



**ANNEXURE-I**  
**Ambient Air Quality Monitoring Results:**

Monitoring Station	Sampling Date	PM10 (µg/m <sup>3</sup> )	PM2.5 (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/M <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )
Mine Site (SAN 1)	08.05.2023 to 09.05.2023	68.4	34.9	19.6	7.4	BDL(<1.15)	18.5	16.7	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Chhoti Lalitpur (SAN 5)	08.05.2023 to 09.05.2023	77.3	40.2	20.1	6.9	BDL(<1.15)	17.1	17.6	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Mine Site (SAN 1)	05.09.2023 to 06.09.2023	67.8	32.3	22.5	6.9	BDL(<1.15)	17.4	15.2	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Pagra (SAN 2)	06.09.2023 to 07.09.2023	63.3	36.1	23.8	8.2	BDL(<1.15)	19.7	17.9	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Chhoti Lalitpur (SAN 5)	07.09.2023 to 08.09.2023	64.7	34.3	19.8	8.9	BDL(<1.15)	19.3	17.0	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Bela (SAN 6)	08.09.2023 to 09.09.2023	70.6	38.8	18.0	7.8	BDL(<1.15)	17.6	16.8	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Chhoti Lalitpur (SAN 5)	19.12.2023 to 20.12.2023	77.8	40.5	19.9	7.1	BDL(<1.15)	18.5	17.3	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Mine Site (SAN 1)	19.12.2023 to 20.12.2023	80.9	47.7	22.2	8.9	BDL(<1.15)	23.4	16.3	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Chhoti Lalitpur (SAN 5)	22.02.2024 to 23.02.2024	66.4	31.9	19.7	7.5	BDL(<1.15)	18.9	16.4	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)
Village Bela (SAN 6)	22.02.2024 to 23.02.2024	68.2	34.7	18.4	9.0	BDL(<1.15)	18.0	15.7	BDL (<1.0)	BDL (<1.0)	BDL (<0.05)	BDL (<1.0)	BDL (<0.05)

**Fugitive Emission Monitoring Results:**

Monitoring Station	Sampling Date	SPM (µg/m <sup>3</sup> )
Bela near highway Satna to Rewa Transportation point	12.05.2023	127.5
Village Bela Transportation point	13.05.2023	105.0
Bela near highway Satna to Rewa Transportation point	13.09.2023	129.6
Mine site (SAN-1)	14.09.2023	97.5
Village Bela Transportation point	15.12.2023	141.6
Bela near highway Satna to Rewa Transportation point	15.12.2023	121.9
Bela near highway Satna to Rewa Transportation point	17.02.2024	147.9
Mine site (SAN-1)	17.02.2024	89.2





## Work Place Monitoring Results:

Monitoring Station	Sampling Date	SPM ( $\mu\text{g}/\text{m}^3$ )	Silica ( $\mu\text{g}/\text{m}^3$ )	Crystalline Silica ( $\mu\text{g}/\text{m}^3$ )
Pagra East site working pit	07.09.2023	5.9	0.21	0.63
Pagra West site Working pit	07.09.2023	4.9	0.40	0.77
Pagra Mine Site Entry Point(loading Point)	08.09.2023	5.8	0.36	0.92
Pagra Mine Site Exit Point(loading Point)	08.09.2023	5.1	0.20	0.68
Bela near highway Satna to Rewa Transportation point	09.09.2023	4.3	0.29	0.76
Bela village Transportation Point	09.09.2023	6.9	0.35	1.28
Pagra working pit	19.12.2023	4.9	0.29	0.46
Pagra Mine Site (loading Point)	19.12.2023	8.2	0.57	0.93

## Ambient Noise Quality Monitoring Results:

Monitoring Station	Sampling Date	Lmin	Lmax	Leq Day	Leq Night	Ldn
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Mine Site (SAN 1)	08.05.2023 to 09.05.2023	28.9	52.7	48.6	37.6	42.9
Village Chhoti Lalitpur (SAN 5)	08.05.2023 to 09.05.2023	28.5	54.6	52.5	36.5	41.9
Mine Site (SAN 1)	05.09.2023 to 06.09.2023	29.3	62.3	50.3	38.8	44.1
Village Pagra (SAN 2)	06.09.2023 to 07.09.2023	29.2	66.1	54.3	37.5	42.9
Village Chhoti Lalitpur (SAN 5)	07.09.2023 to 08.09.2023	29.9	62.9	51.8	38.0	43.4
Village Bela (SAN 6)	08.09.2023 to 09.09.2023	26.1	60.5	47.5	36.7	42.0
Mine Site (SAN 1)	19.12.2023 to 20.12.2023	31.6	61.3	52.7	40.8	46.2
Village Chhoti Lalitpur (SAN 5)	19.12.2023 to 20.12.2023	32.2	65.4	55.8	40.4	45.8
Mine Site (SAN 1)	21.02.2024 to 22.02.2024	31.5	64.5	53.6	39.5	44.8
Village Pagra (SAN 2)	21.02.2024 to 22.02.2024	27.9	61.7	50.1	35.6	41
Village Chhoti Lalitpur (SAN 5)	22.02.2024 to 23.02.2024	31.5	60.2	51.9	40.0	45.4
Village Bela (SAN 6)	22.02.2024 to 23.02.2024	29.4	65.4	52.8	38.4	43.7

## Work Zone Noise Quality Monitoring Results:

Monitoring Station	Sampling Date	Unit	Lmin	Lmax
Pagra Working Pit	12.05.2023	dB(A)	30.4	64.2
Pagra mine site loading point	13.05.2023	dB(A)	33.9	69.7
Pagra Working Pit	05.09.2023	dB(A)	35.4	64.1
Bela Transportation point	06.09.2023	dB(A)	48.4	75.6
Pagra mine site loading point	07.09.2023	dB(A)	43.8	68.2
Pagra Working Pit	15.12.2023	dB(A)	32.9	69.6
Pagra mine site loading point	15.12.2023	dB(A)	32.3	66.1
Pagra Working Pit	17.02.2024	dB(A)	36.5	58
Bela Transportation point	17.02.2024	dB(A)	45.3	67.9
Pagra mine site loading point	17.02.2024	dB(A)	41.6	65.5



## ANNEXURE-II Water Quality Results:

Sampling Location		Village Pagra (SGWS2)			
Type of Water		Ground Water			
Sampling Date		09.05.2023	09.09.2023	19.12.2023	22.02.2024
Parameters	Unit	Results	Results	Results	Results
pH (at 25°C)	-	7.66	7.5	7.76	7.61
Electrical Conductivity	(µS/cm)	689	660	1094	688
Turbidity	NTU	<0.5	<0.5	<0.5	
Total Dissolved Solids	mg/l	400	420	640	380
Total solids	mg/l	420	440	660	400
Alkanity	mg/l	345	430	337.2	325
Total Hardness	mg/l	488	466	377.4	462
Ca Hardness	mg/l	243	226	174.6	232
Mg Hardness	mg/l	245	240	202.8	230
Ca	mg/l	97.2	90.4	69.8	92.8
Mg	mg/l	59.5	58.3	49.4	55.9
Chloride as Cl-	mg/l	24.0	26.0	81.5	20.0
Sulphate	mg/l	98.2	100	94.8	102.2
Nitrate	mg/l	17.2	22.2	18.4	26.8
Iron	mg/l	0.24	0.26	0.28	0.25
Fluoride	mg/l	0.5	0.6	0.8	0.7
COD	mg/l	<4.0	<4.0	<4.0	<4.0
BOD	mg/l	<2.0	<2.0	<2.0	<2.0
DO	mg/l	3.8	4.0	3.8	4.0
Oil & Grease	mg/l	<0.5	<0.5	<0.5	<0.5
Total Chromium	mg/l	<0.003	<0.003	<0.003	<0.003
Phosphate	mg/l	<5.0	<5.0	<5.0	<5.0
Zinc	mg/l	<5.0	<5.0	<5.0	<5.0
Coliform	MPN/100 ml	Absent	Absent	Absent	Absent



Sampling Location		Mine Site (SGWSI)			
Type of Water		Ground Water			
Sampling Date		09.05.2023	09.09.2023	19.12.2023	22.02.2024
Parameters	Unit	Results	Results	Results	Results
pH (at 25°C)	-	7.4	7.61	7.72	7.66
Electrical Conductivity	(µS/cm)	672	696	764	740
Turbidity	NTU	<0.5	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/l	380	400	440	440
Total solids	mg/l	400	420	460	460
Alkanity	mg/l	355	335	330	355
Total Hardness	mg/l	366	488	473.8	440
Ca Hardness	mg/l	183.6	244	216	222
Mg Hardness	mg/l	182.4	244	257.8	218
Ca	mg/l	73.4	97.6	86.4	88.8
Mg	mg/l	44.3	59.3	62.6	52.9
Chloride as Cl-	mg/l	20.0	22.0	48.4	26.0
Sulphate	mg/l	102.2	106	102.4	98.8
Nitrate	mg/l	16.6	20.6	21.6	18.6
Iron	mg/l	0.24	0.24	0.28	0.26
Fluoride	mg/l	0.6	0.6	0.8	0.6
COD	mg/l	<4.0	<4.0	<4.0	<4.0
BOD	mg/l	<2.0	<2.0	<2.0	<2.0
DO	mg/l	3.5	3.8	4.0	4.2
Oil & Grease	mg/l	<0.5	<0.5	<0.5	<0.5
Total Chromium	mg/l	<0.003	<0.003	<0.003	<0.003
Phosphate	mg/l	<5.0	<5.0	<5.0	<5.0
Zinc	mg/l	<5.0	<5.0	<5.0	<5.0
Coliform	MPN/100 ml	Absent	Absent	Absent	Absent





Sampling Location		Mine Pit			
Type of Water		Surface Water			
Sampling Date		09.05.2023	09.09.2023	19.12.2023	22.02.2024
Parameters	Unit	Results	Results	Results	Results
pH (at 25°C)	-	7.86	7.86	7.76	7.9
Electrical Conductivity	(µS/cm)	688	688	667	746
Turbidity	NTU	3.0	3.0	4.0	4.0
Total Dissolved Solids	mg/l	420	420	400	440
Total solids	mg/l	440	440	420	480
Alkanity	mg/l	255	255	245	235
Total Hardness	mg/l	340	340	292.5	300
Ca Hardness	mg/l	176.4	176.4	171	151.2
Mg Hardness	mg/l	163.9	163.9	121.5	148.8
Ca	mg/l	57.6	57.6	68.4	60.5
Mg	mg/l	41.5	41.5	29.5	34.4
Chloride as Cl-	mg/l	21.0	21.0	24.0	21.5
Sulphate	mg/l	80.8	80.8	76.4	82.2
Nitrate	mg/l	8.2	8.2	7.4	9.4
Iron	mg/l	0.06	0.06	0.08	0.08
Fluoride	mg/l	0.7	0.7	0.6	0.7
COD	mg/l	36	36	40	28
BOD	mg/l	9.7	9.7	10.9	7.3
DO	mg/l	7.2	7.2	7.3	7.0
Oil & Grease	mg/l	4.4	4.4	4.6	4.2
Total Chromium	mg/l	0.12	0.12	0.08	0.08
Phosphate	mg/l	5.6	5.6	5.4	5.8
Zinc	mg/l	<5.0	<5.0	<5.0	<5.0
Coliform	MPN/100 ml	1000	1000	960	960

### ANNEXURE-III Soil Quality Results:

Sampling Location		Mine Pit			
Sampling Date		09.05.2023	09.09.2023	19.12.2023	22.02.2024
Parameters	Unit	Results	Results	Results	Results
pH (at 25°C)	-	7.64	7.7	7.94	7.84
Electrical Conductivity	(mS/cm)	0.422	0.428	0.563	0.463
Organic Matter	%	1.224	1.136	1.486	1.239
Phosphorus	mg/Kg	17.1	17.9	17.33	18.65
Potassium	mg/Kg	8.4	8.1	8.4	8.9
Particle Distribution	mm	2.0	2.0	2.0	2.0
Water Holding Capacity	%	72.0	72.0	25.06	26.47
Free Ammonical Nitrogen	mg/Kg	25.2	25.2	28.8	25.8
Cu	mg/Kg	<0.1	<0.1	<0.1	<0.1
Pb	mg/Kg	<0.1	<0.1	<0.1	<0.1
Cd	mg/Kg	<0.05	<0.05	<0.05	<0.05







# ANNEXURE-V

## Location Map of Monitoring Stations

