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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3226/5
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L3=48.974 Ha Site, Dist:- Balaghat (M.P)	Test Location	Near Chindi Tola Village
Dataghat (IVI.F)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

#### RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	11.0	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	15.2	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	58.7	≤ 100	IS 5182 (Part 23)
. 04	Particulate Matter PM2.5 micron	μg/M³	27.9	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.2	<sub>70</sub> ≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.314	≤ 2.0	IS 5182
80	Ammonia (NH₃)	μg/M³	3.4	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M <sup>3</sup>	BDL	≤ 5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

### **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Service

Coopermich Checked By

(Mrs.Kadambari Deshmukh)



Authorized Signatory Ďr. Sandeep Jadhav Senior vice president

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3226/6
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L3=48.974 Ha Site, Dist:-	Test Location	Near Haul Road
Balaghat (M.P)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

	Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp, ℃	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
***************************************	32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

#### RESULT

	The state of the second	A STATE OF THE STA	and the state of t	_ auliū	A WARRACTOR A CO	
Sr. No.	Description	Unit	Results	CPCB standard	Test Method	
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	12.7	≤80	IS 5182(Part 2)	
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	17.2	≤ 80	IS 5182(Part 6)	
03	Particulate Matter PM10 micron	μg/M³	65.0	≤ 100	IS 5182 (Part 23)	
04	Particulate Matter PM <sub>2,5 micron</sub>	μg/M³	34.5	≤ 60	USEPA 40 CFRCH	
05	Ozone (O₃)	μg/M³	5.0	ో∷≤ 100 -⊹్	IS 5182	
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS	
07	Carbon Monoxide (CO)	mg/M³	0.426	≤ 2.0	IS 5182	
08	Ammonia (NH₃)	μg/M³	5.2	≤400	APHA - 401	
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182	
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182	
11	Arsenic (As)	ng/M³	BDL	≤6	APHA - AAS	
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS	

#### **REMARKS/OBSERVATIONS:**

> All above results are within National Ambient Air Quality standards

BDL: - Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)

Authorized Signatory
Dr Sandeep Jadhav
Senior vice president

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3226/7
M/s MOIL LIMITED,  Ukwa Manganese Mines L3=48.974 Ha Site, Dist:- Balaghat (M.P)	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Air
	Test Location	Sand Bunker
	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	12.4	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO2)	μg/M³	16.8	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	61.3	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	30.1	≤ 60	USEPA 40 CFRCH
05	Ozone (O <sub>3</sub> )	μg/M³	4.2	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.320	≤ 2.0	IS 5182
08	Ammonia (NH <sub>3</sub> )	μg/M³	4.8	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤ 1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL.	≤ 20	APHA - AAS

# **REMARKS/OBSERVATIONS:**

> All above results are within National Ambient Air Quality standards.

➤ BDL: - Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



Authorized Signatory

Dr. Sandeep Jadhav

Senior vice president

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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3226/8
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
Ukwa Manganese Mines L3=48.974 Ha Site, Dist:-	Type of Monitoring	Ambient Air
	Test Location	Near Explosive Magzine
Balaghat (M.P)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

#### RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	11.5	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	17.0	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	58.9	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM <sub>2.5 micron</sub>	μg/M³	28.4	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.4	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.318	≤ 2.0	IS 5182
08	Ammonia (NH <sub>3</sub> )	μg/M³	3.6	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	<u>≤1</u>	IS 5182
11	Arsenic (As)	ng/M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

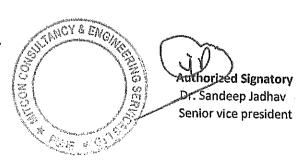
### **REMARKS/OBSERVATIONS:**

- All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3226/9
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Noise
Ukwa Manganese Mines L3=48.974 Ha Site, Dist:- Balaghat (M.P)	Monitoring Done By	MITCON

#### READINGS

Sr. No.	Test Location			Unit	Readings		
01	Near Chindh	i Tola Village		dB(A)	52.8		
02	Near Pit offic	ce II Vertical shaf	t	dB(A)	59.2		
03	Vertical Fan			dB(A)	68.2		
04	Haul Road	Friedly Fried Control		dB(A)	59.2		

### **REMARKS / OBSERVATIONS:**

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



Authorized Signatory
Dr. Sandeep Jadhav
(Senior Vice President)

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3226/1
•	Name of Sample	Ground Water
Ukwa Manganese Mines L3=48.974 Ha Site,	Sample Details	Chindhi Tola Village Open Dugwell
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	25/02/2023
·	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
	End Date of Analysis	06/03/2023

#### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.20	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	<5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	UTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	223.4	mg/l	≤500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	110.28	mg/l	≤200	APHA 2340 C ;2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	24.32	mg/i	<b>≤</b> 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	12.25	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	108.25	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	15.74	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	19.95	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	7.12	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

#### **REMARKS / OBSERVATIONS:**

The above water sample is complying with required limits as per IS 10500:2012.

Checked By

For MITCON Consultancy & Engineering Services Ltd.

(Mrs. Kadambari Deshmukh)

Authorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3226/2
·	Name of Sample	Ground Water
Ukwa Manganese Mines L3=48.974 Ha Site,	Sample Details	Dugwell Near Pit office
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
_	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part 1)
	Sample Collected On	25/02/2023
	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
	End Date of Analysis	06/03/2023

#### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.23		6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	₹5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	264.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	130.24	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	40.12	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	12.27	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	104.18	Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I		APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	25.69	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	18.70	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	. mg/l	≤0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	8.25	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



Authorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

### Test Report

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3226/3
	Name of Sample	Ground water
Ukwa Manganese Mines L3=48.974 Ha Site,	Sample Details	Dugwell Near Haul road II
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	25/02/2023
	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
	End Date of Analysis	06/03/2023

#### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.29	_	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	₹5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	302.1	mg/l	≤ 500	APHA 2540 C; 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	145.26	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	42.25	mg/I	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	12.24	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	· mg/i	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	134.68	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	16.52	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	10.97	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	5.75	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100m!	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤ 5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd

Checked By

(Mrs. Kadambari Deshmukh)



Arthorized Signatory (Dr. Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3226

Issue Date:06/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3226/4
	Name of Sample	Waste Water
Ukwa Manganese Mines L3=48,974 Ha Site,	Sample Details	Near Mine seepage II Vertical
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	25/02/2023
	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
	End Date of Analysis	06/03/2023

**ANALYSIS RESULTS** 

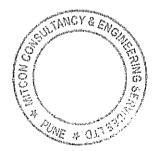
Sr. No.	Characteristic	Limit as pe Consent		Permissible Limit as per Consent Condition	Test Methods
01	pH at 25°C	7.19	* 10.720.00.000.000	5.5 to 9.0	APHA 4500 H+ A, 4-95, 23rd Ed. 2017
02	Dissolved Oxygen	3.2	mg/l	11 (270°)	IS: 3025 Part 38
03	Chemical Oxygen Demand	49.3	mg/l	250	APHA 5220 C,5-20 to 5-21 23rd Ed 2017
04	Biochemical Oxygen	17.1	mg/l	30	IS :3025 (Part 44)
05	Total suspended solids	22.3	mg/l	100	APHA 2540 D,2-70 to 2-71 23 <sup>rd</sup> Ed 2017
06	Oil and grease	< 5	mg/l	10	APHA 5520 B,5-42 to 5-43 23 <sup>rd</sup> Ed 2017
07	Manganese	0.30	mg/I	2	APHA 3111 B,3-18 to 3-21 23rd Ed 2017

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd.

Knochman Checked By

(Mrs. Kadambari Deshmukh)



งแม่ค่อย่อยชี Signatory (Ďr.Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3225/6	
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023	
	Type of Monitoring	Ambient Air	
Ukwa Manganese Mines L2=69.581 Ha Site, Dist:-	Test Location	Near Vertical Shaft II	
Balaghat (M.P)	Monitoring Done By	MITCON	
	Date of Analysis	27/02/2023	
	<b>.</b>	.1	

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	12.4	. ≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	15.9	<sup>1</sup> ≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	64.9	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM <sub>2.5 micron</sub>	μ <b>g/M</b> ³	29.3	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	4.4	≤ 100	IS 5182
06	Lead (Pb)	μg/M <sup>3</sup> ,	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.332	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	4.5	≤ 400	APHA - 401
09	Benzene (C6H6)	μg/M³	BDL	≲5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤ 6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

➤ All above results are within National Ambient Air Quality standards.
 ➤ BDL: - Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd

Cupaiwich Checked By

(Mrs.Kadambari Deshmukh)

Allthorizéd Signatory ਾ. Sandeep Jadhav Senior vice president

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# **Quarter January February March 2023**

## **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3225/7
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
,	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L2=69.581 Ha Site, Dist:-	Test Location	Near Substation
Balaghat (M.P)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

Sr. No.	Description	Unit	Results	CPCB Standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	11.4	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	14.7	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM <sub>10 micron</sub>	μg/M³	60.5	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM <sub>2.5 micron</sub>	μg/M³	27.2	≤60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	4.0	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.316	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	4.5	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

> All above results are within National Ambient Air Quality standards.

BDL: - Below Detection Limit.

For MITCON Consultancy & Engineering Services Light

RADOHMKY Checked By

(Mrs.Kadambari Deshmukh)

& PUNE "

Adthorized Signatory Dr. Sandeep Jadhav Senior vice president

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3225/8
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
,	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L2=69.581 Ha Site, Dist:- Balaghat (M.P)	Test Location	Near Admin Building
	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/	WNW
		standbon a	(California)	es e primario de la companya della companya della companya de la companya della c		hrs.(Avg)	CAST CONTRACTOR

9 : 0000 000000000000000000000000000000	A BOARDAR BORRES	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	90.8827	15100111111111111111111111111111111111	1850 9560 1850 1850 1850 1850 1850 1850 1850 185
Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	11.0	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	13.9	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM <sub>10 micron</sub>	hg/M³	59.3	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM <sub>2.5 micron</sub>	μg/M³	26.8	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.2	≤ 100	IS 5182
. 06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.320	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	3.4	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

> All above results are within National Ambient Air Quality standards

BDL: - Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Corpetulch Checked By

(Mrs.Kadambari Deshmukh)

**<u>Authorized Signatory</u>** Dr. Sandeep Jadhav Senior vice president

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3225/9	
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023	
•	Type of Monitoring	Ambient Air	
Ukwa Manganese Mines L2=69.581 Ha Site, Dist:-	Test Location	Near Weigh Bridge	
Balaghat (M.P)	Monitoring Done By	MITCON	
	Date of Analysis	27/02/2023	

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/	WNW
		with the later of the	·			hrs.(Avg)	wie .

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	13.7	<b>≤</b> 80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	µg/M³	17.8	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	62.9	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	32.6	≤ 60	USEPA 40 CFRCH
05	Ozone (O <sub>3</sub> )	μg/M³	4.6	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.340	≤ 2.0	IS 5182
- 08	Ammonia (NH3)	μg/M³	4.9	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤ 5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Etd.

A DEMIKY Checked By

(Mrs.Kadambari Deshmukh)

Suthorized Signatory Dr. Sandeep Jadhav Senior vice president

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### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3225/1		
•	Name of Sample	Waste Water (Mine Seepage water)		
Ukwa Manganese Mines L2=69.581 Ha Site,	Sample Details	Mine Seepage water		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	25/02/2023		
	Date of Sample Receipt	27/02/2023		
	Analysis Start Date	27/02/2023		
	End Date of Analysis	06/03/2023		

**ANALYSIS RESULTS** 

Sr. No.	Characteristic	Results	Unit	Permissible Limit as per	Test Methods
10 T	na je	Parks 4	in in Archard I. Jeuggardan da kanada	Consent Condition	ing the second of the second o
01	pH at 25°C	7.21		5.5 to 9.0	APHA 4500 H+ A, 4-95, 23rd Ed. 2017
02	Dissolved Oxygen	4.2	mg/l	**************************************	IS: 3025 Part 38
03	Chemical Oxygen Demand	44.3	mg/l	250	APHA 5220 C,5-20 to 5-21 23 <sup>rd</sup> Ed 2017
04	Biochemical Oxygen	17.3	mg/l	30	IS :3025 (Part 44)
05	Total suspended solids	25.3	mg/l	100	APHA 2540 D,2-70 to 2-71 23rd Ed 2017
06	Oil and grease	< 5	mg/l	10	APHA 5520 B,5-42 to 5-43 23 <sup>rd</sup> Ed 2017
07	Manganese	0.42	mg/l	2	APHA 3111 B,3-18 to 3-21 23'd Ed 2017

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

SE TANGEY & CA

Authorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3225/2
	Name of Sample	Waste Water
Ukwa Manganese Mines L2=69.581 Ha Site,	Sample Details	STP Outlet
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
•	Sample Collected On	25/02/2023
	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
	End Date of Analysis	06/03/2023

#### **ANALYSIS RESULTS**

Sr. No.	Characteristic	Results	Unit	Permissible Limit as per	Test Methods
100.				Consent Condition	
01	pH at 25℃	7.20	-	5.5 to 9.0	APHA 4500 H+ A, 4-95, 23rd Ed. 2017
02	Dissolved Oxygen	3.9	mg/l	1800, 1900 190 200	IS: 3025 Part 38
03	Chemical Oxygen Demand	62.4	mg/l	250	APHA 5220 C,5-20 to 5-21 23rd Ed 2017
04	Biochemical Oxygen	19.2	mg/l	30	IS :3025 (Part 44)
05	Total suspended solids	18.0	mg/l	100	APHA 2540 D,2-70 to 2-71 23rd Ed 2017
06	Oil and grease	< 5	mg/l	10	APHA 5520 B,5-42 to 5-43 23rd Ed 2017
07	Manganese	0.21	mg/l	2	APHA 3111 B,3-18 to 3-21 23rd Ed 2017

### **REMARKS / OBSERVATIONS:**

For MITCON Consultancy & Engineering Services Ltd. SULTANO

Checked By

(Mrs. Kadambari Deshmukh)



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#### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3225/3		
	Name of Sample	Waste Water		
Ukwa Manganese Mines L2=69.581 Ha Site,	Sample Details	ETP Outlet		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	25/02/2023		
	Date of Sample Receipt	27/02/2023		
	Analysis Start Date	27/02/2023		
	End Date of Analysis	06/03/2023		

ANALYSIS RESULTS

Sr. No.	Ćl	iaracteristic		Results	Unit	Permissible Limit as per Consent Condition	Test Methods
01	pH at 25°C	e Kalenda		7.32	-	5.5 to 9.0	APHA 4500 H+ A, 4-95, 23rd Ed. 2017
02	Dissolved C	xygen		2.8	mg/I	3	' IS: 3025 Part 38
03	Chemical O	xygen Deman	d	81.7	mg/l	250	APHA 5220 C,5-20 to 5-21 23rd Ed 2017
04	Biochemica	l Oxygen	•	21.9	mg/l	30	IS :3025 (Part 44)
05	Total suspe	nded solids		23.8	mg/l	100	APHA 2540 D,2-70 to 2-71 23rd Ed 2017
06	Oil and grea	ise		< 5	mg/l	10	APHA 5520 B,5-42 to 5-43 23rd Ed 2017
07	Manganese			0.44	mg/l	2	APHA 3111 B,3-18 to 3-21 23rd Ed 2017

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd.

**Chockmicy** Checked By

(Mrs. Kadambari Deshmukh)



Alithorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3225/4
	Name of Sample	Ground Water
Ukwa Manganese Mines L2=69.581 Ha Site,	Sample Details	Lugma Village open Dugwell No. I
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	25/02/2023
	Date of Sample Receipt	27/02/2023
	Analysis Start Date	27/02/2023
·	End Date of Analysis	06/03/2023

### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per I5 10500:2012	Test Methods
01	pH at 250C	7.28		6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
.03	Turbidity	< 1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	267.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	128.25	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	34.25	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	16.25	mg/l	≤ 30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	104.08	Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	25.12	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	18.33	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	2.32	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
1.5	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5 ·	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

Authorized Signatory (Dr.Sandeep Jadhav)

Senior Vice President

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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address		Sample Details				
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3225/5				
,.	Name of Sample	Drinking water				
Ukwa Manganese Mines L2=69.581 Ha Site,	Sample Details	2nd Vertical shop open dugwell				
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can				
-	Sample Collected By	MITCON				
	Method of sampling	IS 3025(Part I)				
	Sample Collected On	25/02/2023				
	Date of Sample Receipt	27/02/2023				
	Analysis Start Date	27/02/2023				
,	End Date of Analysis	06/03/2023				

### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 250C	7.27		6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1,	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	231.2	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	115.28	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	28,13	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	12.45	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	104.12	Mg/l	≮200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	52.12	mg/l	≤ 250	APHA 4500 CI, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	12.24	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	4.27	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeabl e	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd

Checked By

(Mrs. Kadambari Deshmukh)

athorized Signatory (Dr. Sandeep Jadhav)

Senior Vice President

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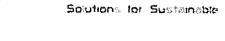
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# Quarter January- February- March 2023

### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3915/5
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L1=199.067 Ha Site, Dist:- Balaghat (M.P)	Test Location	Near Nagra Plant
Daidgitat (IVI.1)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

	- Principality of the Control of the	41 / NAME OF A STATE	That 11 (1947)	The state of the s	e. I s North Miller A
Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	11.5	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO2)	μg/M³	16.2	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	64.9	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	29.3	≤ 60	USEPA 40 CFRCH
05	Ozone (O <sub>3</sub> )	μg/M³	4.4	₂ ≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.332	≤ 2.0	IS 5182
. 80	Ammonia (NH <sub>3</sub> )	μg/M³	4,5	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤ 1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤ 6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Kirperwell Checked By

(Mrs.Kadambari Deshmukh)



Authorized Signatory Dr. Sandeep Jadhav Senior vice president

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### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3915/6
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L1=199.067 Ha Site, Dist:-	Test Location	Near Ukwa Village
Balaghat (M.P)	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

Sr. No.	Description	Ünit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	11.0	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	15.8	≤ 80	IS 5182(Part 6)
.03	Particulate Matter PM <sub>10 micron</sub>	μg/M³	57.9	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM <sub>2.5 micron</sub>	μg/M³	28.0	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.7	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M <sup>3</sup>	0.240	≤ 2.0	IS 5182
08	Ammonia (NH <sub>3</sub> )	μg/M³	4.0	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd. RUSSHINCY

Checked By

(Mrs.Kadambari Deshmukh)



grized Signatory Dr. Sandeep Jadhay Senior vice president

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Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

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Client's Name & Address	Reference No.	MITCON/2022-23/March/3915/7
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
·	Type of Monitoring	Ambient Air
Ukwa Manganese Mines L1=199.067 Ha Site, Dist:-Balaghat (M.P)	Test Location	Near Vertical
	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	12.4	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	μg/M³	17.0	≤80	IS 5182(Part 6)
03	Particulate Matter PM <sub>10 micron</sub>	μg/M³	68.4	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	µg/M³	32.6	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	4.5	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.376	≤ 2,0	IS 5182
- 08	Ammonia (NH <sub>3</sub> )	μg/M³	4.7	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

# **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



Kuthorized Signatory Dr. Sandeep Jadhav Senior vice president

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#### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3915/8
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
Ukwa Manganese Mines L1=199.067 Ha Site, Dist:- Balaghat (M.P)	Type of Monitoring	Ambient Air
	Test Location	Near Work Shop
	Monitoring Done By	MITCON
	Date of Analysis	27/02/2023

#### **OBSERVATION**

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	17	10	1440	0.0	5.63 km/ hrs.(Avg)	WNW

#### RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO <sub>2</sub> )	μg/M³	13.6	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO <sub>2</sub> )	µg/M³	18.4	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	69.6	≤100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	36.8	≤ 60	USEPA 40 CFRCH
05	Ozone (O3)	μg/M³	4.9	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.394	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	5.3	≤ 400	APHA - 401
09	Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

#### **REMARKS/OBSERVATIONS:**

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Moshiner Checked By

(Mrs.Kadambari Deshmukh)



With prized Signatory ව්r. Sandeep Jadhav Senior vice president

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# Quarter January- February- March 2023

### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3915/9
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Noise
Ukwa Manganese Mines L1=199,067 Ha Site, Dist:- Balaghat (M.P)	Monitoring Done By	MITCON

#### **READINGS**

Sr. No.	Test Location	Unit	Readings
01	Jack Hammer Drill	dB(A)	71.2
02	Dumper Loaded	dB(A)	69.9
03	Ventilation Fan	dB(A)	68.3
04	Compressor House 1	dB(A)	68.2

#### **REMARKS / OBSERVATIONS:**

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

Kuremich Checked By

(Mrs. Kadambari Deshmukh)

thor/zed Signatory **Of.** Sandeep Jadhay (Senior Vice President)

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# Quarter January- February- March 2023

#### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Sample Details		
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3915/1	
	Name of Sample	Ground Water	
Ukwa Manganese Mines L1=199.067 Ha Site,	Sample Details	Mine office drinking water	
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can	
	Sample Collected By	MITCON	
	Method of sampling	IS 3025(Part I)	
	Sample Collected On	25/02/2023	
	Date of Sample Receipt	27/02/2023	
	Analysis Start Date	27/02/2023	
	End Date of Analysis	06/03/2023	

### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.23	_	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended sollds	<5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	240.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	115.40	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	45.2	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	23.1	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed, 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	98.5	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	23.10	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	10.25	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	2.73	mg/i	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	' MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

#### **REMARKS / OBSERVATIONS:**

The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd.

CUDGHUKL SCHECKED BY

(Mrs. Kadambari Deshmukh)

Authorized Signatory (Dr.Sapdeep Jadhav) Senior Vice President

MITCON)

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## **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3915/2		
	Name of Sample	Ground Water		
Ukwa Manganese Mines L1=199.067 Ha Site,	Sample Details	Ukwa Village Open Dug well		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
•	Sample Collected On	25/02/2023		
	Date of Sample Receipt	27/02/2023		
	Analysis Start Date	27/02/2023		
	End Date of Analysis	06/03/2023		

### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.21	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	₹5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	245.2	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	122.21	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	32.02	mg/l	≤ <b>75</b>	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	10.36	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	. mg/l	<0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	102.32	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	45.23	mg/L	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	18.20	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0,3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	5.25	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Collform	Absent	MPN/100ml	Absent	IS: 1622 (R,A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

Kuremuch Checked By

(Mrs. Kadambari Deshmukh)

Authorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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### **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3915/3		
	Name of Sample	Ground water		
Ukwa Manganese Mines L1=199.067 Ha Site,	Sample Details	Gudma Camp Open Dug well		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	25/02/2023		
	Date of Sample Receipt	27/02/2023		
	Analysis Start Date	27/02/2023		
	End Date of Analysis	06/03/2023		

## **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.21	_	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	<5	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	224.0	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	109.25	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	35.14	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	27.12	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	95.28	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	23.12	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	10.25	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	10.21	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeabl e	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



Authorized Signatory (Dr. Sandeep Jadhav) Senior Vice President

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Customer complaint register is available in the laboratory.

**Environment Management and Engineering Division** (Environmental Laboratory)

Agriculture College Campus, Next to DIC office, Shivaji Nagar, Pune. 411 005, Ph. No. 66289405/400, email: emelab@mitconindia.com

ISO 45001:2018 (OHSAS) Certified Laboratory.

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Quarter January- February- March 2023

# **Test Report**

Report Number: MITCON/2022-23/ March/3915

Issue Date: 06/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3915/4		
***	Name of Sample	Ground Water		
Ukwa Manganese Mines L1=199.067 Ha Site,	Sample Details	New Mine colony Hand pump  1 lit plastic can		
Dist:- Balaghat (M.P)	Container Details			
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	25/02/2023		
	Date of Sample Receipt	27/02/2023		
	Analysis Start Date	27/02/2023		
	End Date of Analysis	06/03/2023		

#### **ANALYSIS RESULTS**

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.29	relia. Princip. Of	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	<5	mg/l	N.S.	APHA 2540 D,2-70 to 2-71 23rd ed 2017
⊹03 🦠	Turbidity	< 1 (4 ) jen	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	230.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	112,23	mg/l	≤200	APHA 2340 C,2-48 to 2-50,23rd Ed 2017
06	Galcium as Ca	35.25	mg/I	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed, 2017
07	Magnesium as Mg	13.26	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	85.21	Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1 <1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	19.25	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	13.67	mg/l	≤200	APHA 4500 –SO4 - E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0,3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	4.20	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

**REMARKS / OBSERVATIONS:** 

For MITCON Consultancy & Engineering Services Ltd. Knochmen

Checked By

(Mrs. Kadambari Deshmukh)



Authorized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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# **Quarter January February March 2023**

#### **Test Report**

Report Number: MITCON/2022-23/March/3225

Issue Date:06/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3225/10
M/s MOIL LIMITED,	Date of Monitoring	25/02/2023
	Type of Monitoring	Ambient Noise
Ukwa Manganese Mines L2=69.581 Ha Site, Dist:- Balaghat (M.P)	Monitoring Done By	MITCON

#### **READINGS**

Sr. No.	Test Location	Unit	Readings
01	Jack Hammer Drill (1650 level)	dB(A)	71.3
02	Dumper Loaded at workshop	dB(A)	67.5
03	Near Vertical shaft	dB(A)	695
04	Compressor House II	dB(A)	69.3

### **REMARKS / OBSERVATIONS:**

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



Authorized Signatory
Dr. Sandeep Jadhav
(Senior Vice President)

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