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No. JSW/S/CO/25/428

Date: 19/09/2025

To,
The Member Secretary
State Pollution Control Board, Odisha,
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8,
Bhubaneswar- 751012

Sub: - Submission of Environment Statement (Form-V) for the year 2024-25 in compliance of EC& CTO Condition for Nuagaon Iron Ore Mine of M/s JSW Steel Ltd.

Ref: - 1. EC vide MOEF&CC file no. J-11015/1156/2007-IA. II(M), Dated. 05.08.2021.
2. Consent Order No 6932/IND-I-CON-2320 dated 31-03-2025.

Dear Sir,

With reference to aforesaid subject, please find enclosed herewith the Environment Statement (Form-V) for the year 2024-25 in compliance of EC & CTO Condition for **Nuagaon Iron Ore Mine** of M/s JSW Steel Ltd.

Seeking your co-operation as always.

Thanking you & with Regards

For M/s. JSW Steel Limited

Vijay Kumar
19/9/25
Authorized Signatory
(VIJAY KUMAR)

Encl: As

above Copy to-

1. The Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (Eastern Zone), A/3, Chandersekharpur, Bhubaneswar – 751023
2. The Regional Officer, Regional Office, State Pollution Control Board, Keonjhar, At – Baniapat, College Road, Keonjhar-758 001, Office of the State Pollution Control Board, Odisha



**JSW Steel Limited
Nuagaon Iron Ore Mine**



**ENVIRONMENTAL STATEMENT FOR
NUAGAON IRON ORE MINE
(FINANCIAL YEAR ENDING 31ST MARCH 2025)**

PREPARED & SUBMITTED BY

**Nuagaon Iron Ore Mine
Of M/s JSW Steel Ltd
Tehsil - Barbil, District – Keonjhar
Odisha**

Form V
(See Rule 14)

Environment Statement for the Financial Year ending the 31st March 2025

Part A

(i)	Name and address of the owner/occupier of the industry operation or process	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd in villages Nuagaon, Barapada, Gandhalpada, Guali, Katesahi, Parediposi, Kohla Rudukela, Panduliposhi and Topadihi villages under Barbil Tehsil of Keonjhar District, Odisha state
(ii)	Industry Category Primary: - (STC Code) Secondary: - (SIC Code)	Red Category SIC (Standard Industrial Classification)- Code-1000 Industry Type- Metal Mining
(iii)	Production capacity: Units	Operating Mine of 7.99 MTPA iron ore production
(iv)	Year of establishment	Mining operation commenced from the 01.07.2020
(v)	Date of the last Environment Statement Submitted	16 th September 2024

Part B

Water and Raw Material Consumption

(i)	Water consumption m ³ /d	
	Process (Spraying for Mine pit or Haul Road dust Suppression/ dry fog dust suppression/ wheel washing/ fixed and mobile sprinklers or any other) *	448 m ³ /day
	Cooling	Nil
	Domestic and Drinking purpose	150 m ³ /day

Note: *Spraying in mine pit or haul road dust suppression is not exactly a process driven parameter, which is linked with the extent of haul road in usage during mining operation. Maximum Rain water collected in the mine pits being reused for dust suppression purpose.

Name of Product	Process water consumption per unit of product output(cum/MT)	
	During the previous financial year	During the current financial year
	(1)	(2)
Iron Ore	0.0319	0.0314

Raw material consumption: - Not Applicable

Name of raw material	Name of products	Consumption of raw material per unit of output MT	
		During the previous financial year	During the current financial year
Not Applicable			

Polluting Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw material used.

PART-C

Pollution discharged to environment/ unit of output

(Parameter as specified in the consent issued)

Pollutants	Qty. of pollutants discharged (mass/day)	Concentrations of pollutants in discharged (mass/volume)	Percentage of variation from prescribed standard with reason
(a) Water	No effluent is generated as no industrial process is involved in the mining operation. However, the surface run-off from the mine complies with all prescribed limits. An ETP with an Oil & Grease Trap with complete recirculation system is in place. The surface run off water quality is enclosed as Annexure 1 .		
(b) Air	There are no point sources of emissions or process stacks releasing pollutants into the environment. Ambient air quality is monitored at four core zone and four buffer zone locations in accordance with NAAQS-2009, and the results remain well within the prescribed standards. The consolidated environmental monitoring data for FY 2024-25 is enclosed as Annexure-I .		

PART- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes / Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity (Ton/Annum)	
	During the previous financial year	During the current financial year
(a) From process (Used or spent Oil)	10.647	67.3
(b) From pollution control	NA	Nil

PART- E
Solid Wastes

	Total Quantity	
	During the previous financial year	During the current financial year
(a) From process	Over Burden (OB)- 433476 m ³	Over Burden (OB)- 307768 m ³
(b) From pollution control	Not Applicable	Not Applicable
(c) (1) Quantity recycled or re-utilized within the unit	Nil	Nil
(2) Sold	Nil	Nil
(3) Disposed	OB is disposed at ear marked area in of the mine as per Approved Mine Plan.	OB is disposed at ear marked area in of the mine as per Approved Mine Plan.

PART-F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

Solid Waste- Overburden of 307768 m³ generated during the reporting period. The OB/Waste being disposed of at the earmarked area as per approved Mine Plan.

Hazardous Waste-

Used Oil- A total of 67.3 T of hazardous waste was generated during the reporting period which was sold to an authorized dealer of Hazardous waste as per CPCB guidelines.

PART-G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Our aim is to preserve the long- term health of the natural environment affected by our mines operations. We set and achieve targets that promote efficient use of resources and include the reduction and prevention of pollution.

**Air Management-
Blasting Operation**

- Controlled Blasting is being/will be adopted and optimum use of explosive energy help in reducing the air pollution.
- Adequate booster/primer are being/will be used and proper stemming of the blast hole are being/will be done to reduce the production of noxious gases during blasting.
- The drilling, charging, stemming and blasting operations are being carried out under direct personal supervision of Manager/Asst. Manager. He maintains the records of blasting parameters for every blast.
- To control ground vibrations and arrest fly rocks, advanced initiation system is being used for blasting.
- Ground vibrations are also being monitored and the results are well within limits.

Excavation, Hauling and Crushing & Screening

- Dry fog system for crusher & screen plants are provided.
- Using sharp teeth for shovels and other soil excavation equipment, and their periodical replacements.
- Acoustic enclosures for operator cabin.
- Avoiding overloading of dumpers.
- Provision of dust filters / masks to workers working at highly dust prone and affected areas.
- Imparting sufficient training to operators on safety and Environmental parameters.

Transportation

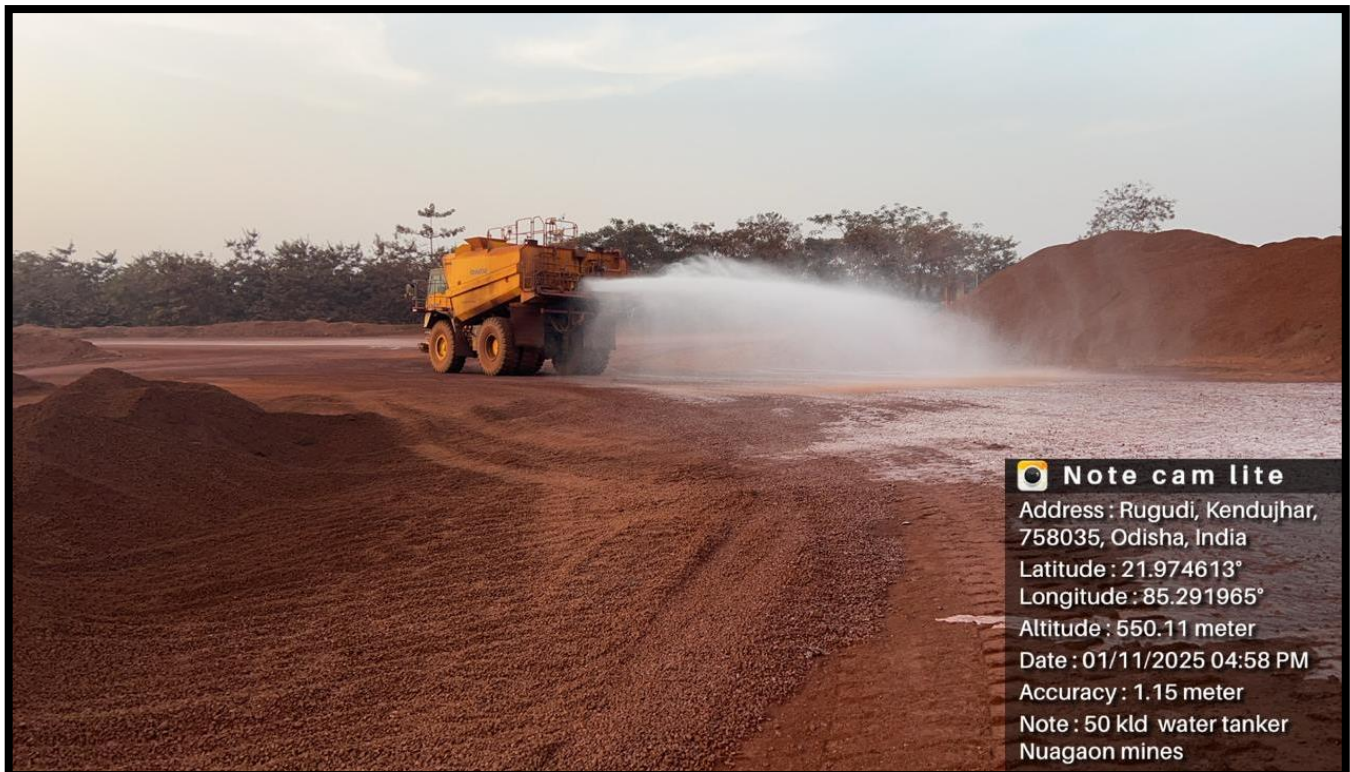
- Regular water sprinkling is being carried out by engaging mobile water tankers on the mine benches, mine haul, loading & unloading points and transfer points, mineral transportation roads for dust suppressions.
- Maintenance of haul road is carried out through grader, dozer on regular basis.
- Ensuring that all mineral trucks are covered by tarpaulin.
- Vehicular emissions controlled through regular and proper preventive maintenance schedules.
- It is ensured that there is no overloading of trucks by having Quick Dispatch system at the weigh bridge near the dispatch gate.
- Regular water sprinkling arrangements have been made on the transportation roads/public road through mobile water tankers.



Wet Drilling and Dust Extractor System in Drilling Operation



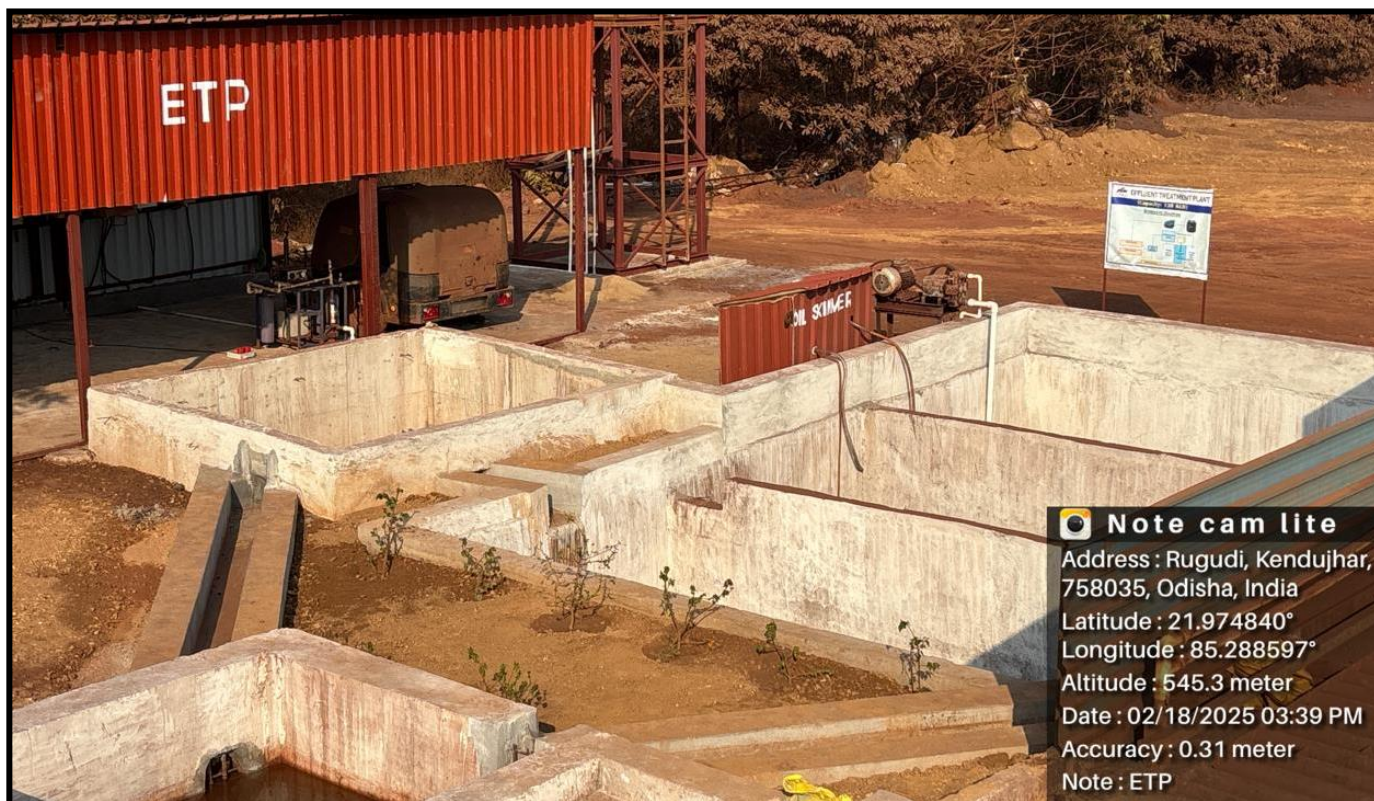
Quick Dispatch System



Water Tanker Arrangement for Haul Road Dust Suppression



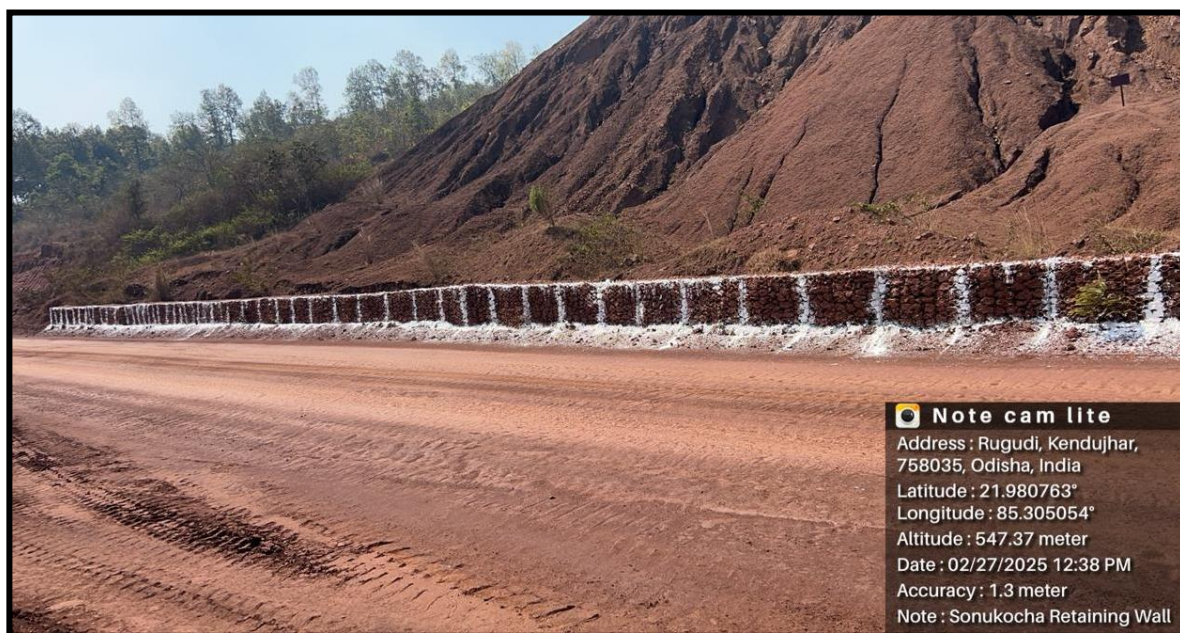
Fixed water sprinkling system at the haul roads



ETP with Oil & Grease Trap

Water & OB Management

- Garland drains of appropriate size around mine area and dump with proper gradients to prevent rain water descent into active mines area.
- Check dams, retaining walls and settling ponds maintained to prevent flow of fine particles from OB / Waste dumps.
- Usage of stored water in the settling ponds for watering of haul roads, vehicle washing and green belt development etc.
- De- silting of garland drains & settling ponds is being carried out at regular intervals.

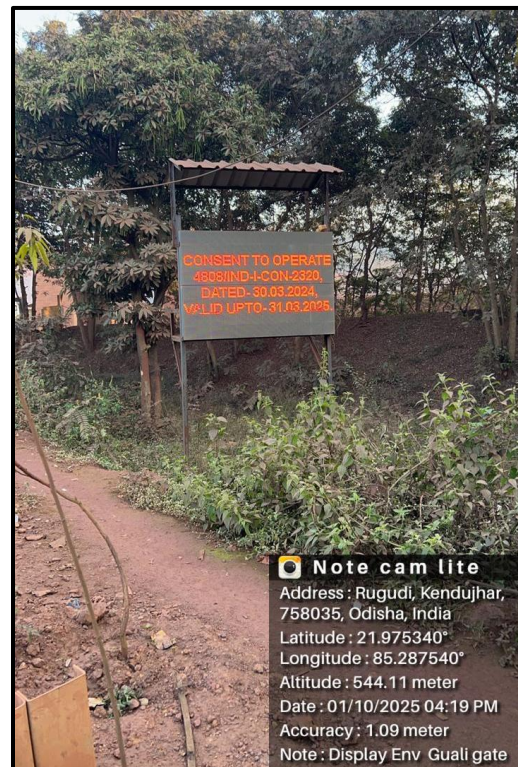
**Retaining Wall at Sonukocha area****Retaining Wall at MDH**



**Check Dam Provided at Topadihi Nalla
Nalla Side Plantation**



Bench Plantation



Display at Gate



Dump Plantation



Nursery



Coir matting at Katasahi dump

Noise Management

- Sound proof operator's cabin for equipment like dumpers, shovel, tippers etc.
- All HEMMs are monitored for any abnormal sound and rectified with due precaution by maintenance personnel.
- Providing workers with ear muffs & earplugs in the high noise level areas.
- Controlling the time of exposure of workers towards high noise areas.
- Online noise monitoring system has been installed inside the mine lease area to monitor the noise level during night hours.



Online noise monitoring system

PART-G**Additional measures/investment proposal for environment protection including abatement of pollution /prevention of pollution.**

Nuagaon Environmental Protection Measures Expenditure (head wise breakup) incurred from in FY 24-25 is given below-

S. No.	Expenditure head -Particulars	Cost incurred in INR
1	Construction of Retaining walls	9,45,000.00
2	Construction of Garland drains, desiltation of settling ponds	3,03,800.00
3	Geotextile works for dump stabilization	31,80,000.00
5	Greenbelt development- Pit digging, plantation and maintenance	26,92,720.00
6	Operation of Road sweeping machines	21,36,000.00
7	Operation of fixed sprinklers	50,000.00
8	Operation of mobile sprinklers	1,09,65,455.00
9	Use of chemical dust suppressants in sprinkling	9,44,000.00
10	Online air quality monitoring	6,57,434.64
11	Environment monitoring through NABL Accredited third party	11,88,460.00
12	Installation of Sewage treatment Plant	36,85,000.00
13	Study conducted on hydrogeology from CGWA Accredited Agency	4,10,000.00
14	Nursery Development	8,87,750.00
15	Landscape development	9,10,200.00
16	Environmental Awareness Programmes	5,00,000.00
17	Flowmeter calibration and stamping	1,47,000.00
18	Drip irrigation for plantation	43,800.00
Total		2,96,46,619.64

PART-H**Any other particular for improving the quality of the environment.**

- Company is committed for prevention/abatement of pollution and minimize adverse environmental impacts by ensuring continual improvement of environmental performance, and complying to the relevant environmental and other relevant regulation & other requirements.
- The mine has already been certified with ISO-14001 (Environment Management System), ISO-9001 (Quality Management System) and OHSAS-45001 (Occupational Health and Safety Assessment Series) and maintaining the systems satisfactorily.

Environmental Monitoring

Regular monitoring of important and crucial environmental parameters is of immense importance to assess the status of environment during mines operation. With the knowledge of baseline conditions, the monitoring program can serve as an indicator for any deterioration in environmental conditions due to operation and suitable preventive steps could be taken in time to safeguard the environment. Monitoring can define the efficiency of the control measures.

The environmental attributes being monitored are as given below:

- Air Pollution and Meteorological Aspects
- Surface and Ground Water Quality
- Noise Levels
- Soil Quality

Annexure 1

Consolidated Air Quality Monitoring Data of FY 2024-2025

CONSOLIDATED AIR QUALITY MONITORING DATA OF FY 2024-2025										
NUAGAON IRON ORE MINES										
AAQ DATA FOR THE PERIOD OF APRIL 2024 TO MARCH 2025										
	PM10($\mu\text{g}/\text{m}^3$)		PM2.5($\mu\text{g}/\text{m}^3$)		SO2($\mu\text{g}/\text{m}^3$)		NO2($\mu\text{g}/\text{m}^3$)		CO($\mu\text{g}/\text{m}^3$)	
	Maxim um	Minim um	Maxim um	Minim um	Maxim um	Minim um	Maxim um	Minim um	Maxim um	Minim um
CORE ZONE										
Near mines office	69.8	65.8	48.3	39.6	18.6	15.7	20.1	17.3	0.64	0.45
Near Dispensary	65.3	61.4	45.2	36.8	19.5	14.5	19.8	17.5	0.59	0.51
Near Katasahi Exit Gate	74.6	64.3	49.5	41.8	21.3	18.3	20.2	16.7	0.57	0.48
Near LP 99	75.3	65.1	48.6	45.2	20.4	16.3	18.5	15.6	0.58	0.55
BUFFER ZONE										
Barpada Village	59.3	50.2	38.6	30.1	18.4	14.2	15.1	12.3	0.45	0.38
Katesahi Village	60.2	55.3	40.3	29.6	17.8	12.3	18.5	17.2	0.51	0.35
Rengela beda Village	65.4	54.3	41.5	27.5	16.6	14.6	17.8	14.2	0.48	0.39
Pandoliposhi Village	56.3	49.7	42	30.1	17.2	14.8	15.1	14.3	0.55	0.35
NAAQ standard for Industrial, Residential, rural and other areas (24 hour)	100 ($\mu\text{g}/\text{m}^3$)		60 ($\mu\text{g}/\text{m}^3$)		80 ($\mu\text{g}/\text{m}^3$)		80 ($\mu\text{g}/\text{m}^3$)		2 (mg/m^3) hourly	



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/07

NAME & ADDRESS OF CUSTOMER:	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd.	ULR No.	TC127512400000417F
		Test Report No.	ECOLAB/SW/0090/0417/09/2024
		Issue Date of Test Report	30.09.2024
Type of Sample	Surface Water		
Sample Registration No.	0090	Name of Location	Mines Runoff time office Road
Sampling Method	As per Reference Method	Sample Collected By	EMPL Representative
Date of Sample Collection	20.09.2024	Time of Sample Collection	-
Date of Sample Received	20.09.2024	Time of Sample Received	05.10 PM
Start Date of Analysis	20.09.2024	End Date of Analysis	30.09.2024
Laboratory Environmental Condition	Temperature: 27 ± 2 °C	Sample Quantity	As Per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0417/09/2024

Sr. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as IS-2296(C)
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	10.0	300
2.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2-12	6.88	6.5-8.5
3.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	41.0	-
4.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5-5000	134.0	1500
5.	Biochemical Oxygen Demand as BOD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	2.9	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	16.0	-
7.	Oil & Grease as O&G	mg/l	APHA, 23rd Ed. : 2017, 5520 A+D	5-600	BDL	0.1
8.	Dissolved Oxygen as DO	mg/l	APHA, 23rd Ed. : 2017, 4500 A+C	1-15	6.1	4
9.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	26.0	600
10.	Sulphate as SO ₄	mg/l	APHA, 23rd Ed. : 2017, 4500-SO ₄ -E	1-250	23.2	400
11.	Nitrate Nitrogen as NO ₃	mg/l	APHA, 23rd Ed. : 2017, 4500-NO ₃ 2- E	5-100	BDL	50
12.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.21	1.5
13.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.12	50.0
14.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-2	BDL	0.2
15.	Hexavalent Chromium as Cr+6	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-20	BDL	0.05
16.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
17.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.04	15
18.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.05-10	BDL	0.005
19.	Anionic Detergent as MBAS	mg/l	APHA, 23rd Ed. : 2017, 5540 A+C	0.01-5	BDL	1.0
20.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-1	BDL	0.1
21.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.002-2	BDL	0.01
22.	Total coliform	MPN/100 ml	APHA, 23rd Ed. : 2017, 9221 A+B	1.8	70.0	5000

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters and the results are related to the sample tested.

Note: - BDL- Below Detection Limit

Verified By

Technical Manager

Authorized By

Quality Manager



TEST REPORT

FORMAT NO. ECO/OS/FORMAT/07

NAME & ADDRESS OF CUSTOMER:	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd.	ULR No.	TC127512400000418F
		Test Report No.	ECOLAB/SW/0090/0418/09/2024
		Issue Date of Test Report	30.09.2024
Type of Sample	Surface Water		
Sample Registration No.	0090	Name of Location	Mines Runoff Haulage Road
Sampling Method	As per Reference Method	Sample Collected By	EMPL Representative
Date of Sample Collection	20.09.2024	Time of Sample Collection	-
Date of Sample Received	20.09.2024	Time of Sample Received	05.10 PM
Start Date of Analysis	20.09.2024	End Date of Analysis	30.09.2024
Laboratory Environmental Condition	Temperature: 27 ± 2 °C	Sample Quantity	As Per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0418/09/2024

Sr. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as IS-2296(C)
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	25.0	300
2.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.9	6.5-8.5
3.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	43.0	-
4.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	187.0	1500
5.	Biochemical Oxygen Demand as BOD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	3.0	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	18.0	-
7.	Oil & Grease as O&G	mg/l	APHA, 23rd Ed. : 2017, 5520 A+D	5-600	BDL	0.1
8.	Dissolved Oxygen as DO	mg/l	APHA, 23rd Ed. : 2017, 4500 A+C	1-15	6.0	4
9.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	30.0	600
10.	Sulphate as SO ₄	mg/l	APHA, 23rd Ed. : 2017, 4500-SO ₄ -E	1 - 250	29.5	400
11.	Nitrate Nitrogen as NO ₃	mg/l	APHA, 23rd Ed. : 2017, 4500-NO ₃ 2- E	5 - 100	BDL	50
12.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.32	1.5
13.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.13	50.0
14.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-2	BDL	0.2
15.	Hexavalent Chromium as Cr+6	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-20	BDL	0.05
16.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
17.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.06	15
18.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.05 - 10	BDL	0.005
19.	Anionic Detergent as MBAS	mg/l	APHA, 23rd Ed. : 2017, 5540 A+C	0.01-5	BDL	1.0
20.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-1	BDL	0.1
21.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.002-2	BDL	0.01
22.	Total coliform	MPN/100 ml	APHA, 23rd Ed. : 2017, 9221 A+B	1.8	140	5000

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters and the results are related to the sample tested.

Note: - BDL- Below Detection Limit

Verified By

Technical Manager

Authorized By

Quality Manager



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/07

NAME & ADDRESS OF CUSTOMER:	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd.	ULR No.	TC127512400000419F
		Test Report No.	ECOLAB/SW/0090/0419/09/2024
		Issue Date of Test Report	30.09.2024
Type of Sample	Surface Water		
Sample Registration No.	0090	Name of Location	Mines Runoff Katesahi Waste Dump Road
Sampling Method	As per Reference Method	Sample Collected By	EMPL Representative
Date of Sample Collection	20.09.2024	Time of Sample Collection	-
Date of Sample Received	20.09.2024	Time of Sample Received	05.10 PM
Start Date of Analysis	20.09.2024	End Date of Analysis	30.09.2024
Laboratory Environmental Condition	Temperature: 27 ± 2 °C	Sample Quantity	As Per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0419/09/2024

Sr. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as IS-2296(C)
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5 -100	30.0	300
2.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	7.02	6.5-8.5
3.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	28.3	-
4.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	209.0	1500
5.	Biochemical Oxygen Demand as BOD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1 -1000	2.7	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1 -1000	22.0	-
7.	Oil & Grease as O&G	mg/l	APHA, 23rd Ed. : 2017,5520 A+D	5-600	BDL	0.1
8.	Dissolved Oxygen as DO	mg/l	APHA, 23rd Ed. : 2017, 4500 A+C	1 -15	5.7	4
9.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	24.0	600
10.	Sulphate as SO4	mg/l	APHA, 23rd Ed. : 2017, 4500-SO42- E	1 - 250	18.3	400
11.	Nitrate Nitrogen as NO3	mg/l	APHA, 23rd Ed. : 2017, 4500-NO3 2- E	5 - 100	BDL	50
12.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.34	1.5
13.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.15	50.0
14.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-2	BDL	0.2
15.	Hexavalent Chromium as Cr+6	mg/l	APHA, 23rd Ed. : 2017,3111 A+B	0.05-20	BDL	0.05
16.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
17.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.11	15
18.	Phenolic Compound as C6H5OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.05 - 10	BDL	0.005
19.	Anionic Detergent as MBAS	mg/l	APHA, 23rd Ed. : 2017,5540 A+C	0.01-5	BDL	1.0
20.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-1	BDL	0.1
21.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.002-2	BDL	0.01
22.	Total coliform	MPN/100 ml	APHA, 23rd Ed. : 2017, 9221 A+B	1.8	60	5000

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters and the results are related to the sample tested.

Note: - BDL- Below Detection Limit

Verified By

Technical Manager

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Quality Manager



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/07

NAME & ADDRESS OF CUSTOMER:	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd.	ULR No.	TC127512400000420F
		Test Report No.	ECOLAB/SW/0090/0420/09/2024
		Issue Date of Test Report	30.09.2024
Type of Sample	Surface Water		
Sample Registration No.	0090	Name of Location	Mines Runoff D-Top Area Road
Sampling Method	As per Reference Method	Sample Collected By	EMPL Representative
Date of Sample Collection	20.09.2024	Time of Sample Collection	-
Date of Sample Received	20.09.2024	Time of Sample Received	05.10 PM
Start Date of Analysis	20.09.2024	End Date of Analysis	30.09.2024
Laboratory Environmental Condition	Temperature: 27 ± 2 °C	Sample Quantity	As Per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0420/09/2024

Sr. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as IS-2296(C)
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5-100	20.0	300
2.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2-12	6.78	6.5-8.5
3.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	34.0	-
4.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5-5000	198.0	1500
5.	Biochemical Oxygen Demand as BOD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	3.0	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1-1000	26.0	-
7.	Oil & Grease as O&G	mg/l	APHA, 23rd Ed. : 2017, 5520 A+D	5-600	BDL	0.1
8.	Dissolved Oxygen as DO	mg/l	APHA, 23rd Ed. : 2017, 4500 A+C	1-15	5.8	4
9.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5-1000	22.0	600
10.	Sulphate as SO ₄	mg/l	APHA, 23rd Ed. : 2017, 4500-SO ₄ -E	1-250	16.5	400
11.	Nitrate Nitrogen as NO ₃	mg/l	APHA, 23rd Ed. : 2017, 4500-NO ₃ 2- E	5-100	BDL	50
12.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05-10	0.35	1.5
13.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.14	50.0
14.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-2	BDL	0.2
15.	Hexavalent Chromium as Cr+6	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-20	BDL	0.05
16.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
17.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.06	15
18.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.05-10	BDL	0.005
19.	Anionic Detergent as MBAS	mg/l	APHA, 23rd Ed. : 2017, 5540 A+C	0.01-5	BDL	1.0
20.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-1	BDL	0.1
21.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.002-2	BDL	0.01
22.	Total coliform	MPN/100 ml	APHA, 23rd Ed. : 2017, 9221 A+B	1.8	130.0	5000

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters and the results are related to the sample tested.

Note: - BDL- Below Detection Limit

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Quality Manager



TEST REPORT

FORMAT NO. ECO/QS/FORMAT/07

NAME & ADDRESS OF CUSTOMER:	Nuagaon Iron Ore Mines of M/s JSW Steel Ltd.	ULR No.	TC127512400000421F
		Test Report No.	ECOLAB/SW/0090/0421/09/2024
		Issue Date of Test Report	30.09.2024
Type of Sample	Surface Water		
Sample Registration No.	0090	Name of Location	Mines Runoff Kanhusahi Quarry Road
Sampling Method	As per Reference Method	Sample Collected By	EMPL Representative
Date of Sample Collection	20.09.2024	Time of Sample Collection	-
Date of Sample Received	20.09.2024	Time of Sample Received	05.10 PM
Start Date of Analysis	20.09.2024	End Date of Analysis	30.09.2024
Laboratory Environmental Condition	Temperature: 27 ± 2 °C	Sample Quantity	As Per Requirement
	Humidity: 51 %	Sample ID Code	ECO/LAB/0421/09/2024

Sl. No.	TESTS	Unit	PROTOCOL	DETECTION RANGE	RESULT	INDIAN STANDARDS as IS-2296(C)
1.	Colour	Hazen	APHA, 23rd Ed. : 2017, 2120 B	5 -100	35.0	300
2.	pH	-	APHA, 23rd Ed. : 2017, 4500H+A+B	2 - 12	6.84	6.5-8.5
3.	Total Suspended Solids as TSS	mg/l	APHA, 23rd Ed. : 2017, 2540-D	5-5000	29.4	-
4.	Total Dissolved Solids as TDS	mg/l	APHA, 23rd Ed. : 2017, 2540-C	5 - 5000	231.0	1500
5.	Biochemical Oxygen Demand as BOD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1 -1000	2.6	3.0
6.	Chemical Oxygen Demand as COD	mg/l	APHA, 23rd Ed. : 2017, 5210 A+B	1 -1000	14.0	-
7.	Oil & Grease as O&G	mg/l	APHA, 23rd Ed. : 2017,5520 A+D	5-600	BDL	0.1
8.	Dissolved Oxygen as DO	mg/l	APHA, 23rd Ed. : 2017, 4500 A+C	1 -15	6.3	4
9.	Chloride as Cl	mg/l	APHA, 23rd Ed. : 2017, 4500 Cl A+B	5 - 1000	32.0	600
10.	Sulphate as SO ₄	mg/l	APHA, 23rd Ed. : 2017, 4500-SO ₄ - E	1 - 250	19.3	400
11.	Nitrate Nitrogen as NO ₃	mg/l	APHA, 23rd Ed. : 2017, 4500-NO ₃ 2- E	5 - 100	BDL	50
12.	Fluoride as F	mg/l	APHA, 23rd Ed. : 2017, 4500-C	0.05 -10	0.35	1.5
13.	Iron as Fe	mg/l	APHA, 23rd Ed. : 2017, 3500 Fe B	0.02-50	0.11	50.0
14.	Arsenic as As	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-2	BDL	0.2
15.	Hexavalent Chromium as Cr+6	mg/l	APHA, 23rd Ed. : 2017,3111 A+B	0.05-20	BDL	0.05
16.	Copper as Cu	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.05-5	BDL	1.5
17.	Zinc as Zn	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.02-50	0.05	15
18.	Phenolic Compound as C ₆ H ₅ OH	mg/l	APHA, 23rd Ed. : 2017, 5530 A+C	0.05 - 10	BDL	0.005
19.	Anionic Detergent as MBAS	mg/l	APHA, 23rd Ed. : 2017,5540 A+C	0.01-5	BDL	1.0
20.	Lead as Pb	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.01-1	BDL	0.1
21.	Cadmium as Cd	mg/l	APHA, 23rd Ed. : 2017, 3111 A+B	0.002-2	BDL	0.01
22.	Total coliform	MPN/100 ml	APHA, 23rd Ed. : 2017, 9221 A+B	1.8	56.0	5000

Statement of Conformity: The above tested parameters confirm as per IS-2296 Class-C limits for above tested parameters and the results are related to the sample tested.

Note: - BDL- Below Detection Limit

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