Steel Limited

Regd. Office: JSW CentreBandra
Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925Phone :
+91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

No. JSW/S/CO/2025/235

Date: 27/05/2025

To,
Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change, Regional Office (Eastern Zone),
A/3, Chandersekharpur, Bhubaneswar – 751023

Sub: - Submission of Six-monthly EC compliance report in respect of **Jajang Iron Ore Mine of M/s JSW Steel Ltd for the period October 2024 to March 2025**.

Ref: -1. Environment Clearance Letter dated No. J-11015/96/2012-IA.II(M) 13.03.2015 and amendment dated 09.11.2015 issued by MOEF&CC, GOI.

Dear Sir,

We are submitting herewith six-monthly EC compliance report of Jajang Iron Ore Mine, M/s JSW Steel Ltd. for the period October 2024 to March 2025 as per EIA notification 2006. The same is also attached in Soft copy to your good office on e-mail to roez.bsr- mef@nic.in; for your ready reference.

We trust that the measures taken towards environmental safeguards comply with the stipulated conditions. We look forward to your guidance which shall certainly help us in our endeavor for improving upon our environmental management practices.

Seeking your co-operation as always.

Thanking you, Yours

Faithfully
For JSW Steel Ltd

Vijay Kumar 27/5/25

Vijay Kumar
(Authorized Signatory)

Encl: As above

ENVIRONMENT CLEARANCE COMPLIANCE STATUS - JAJANG MINE

Six Monthly Compliance report of Environmental Clearance for Jajang Iron Ore Mine of JSW Steel Ltd. for the period from- Oct 2024 to March 2025.

Reference letter from MoEF&CC, New Delhi- J-11015/96/2012-IA. II(M), Dt. 13.03.2015 and 09.11.2015.

Capacity- 16.5 MTPA of iron ore (12.8 MTPA ROM by fresh excavation + 3.7 MTPA by collection from old dumps/ mineral stacks).

S. No.	EC Conditions	Self - Declaration	Compliance Remarks
A.	**Specific Conditions**		
1	The dump height should be maintained up to 60 meter and overall slope of the dump shall be up to 30°.	Being complied	The active dump height is around 26 meter and well within the limit and as per approved modified mine plan, ultimate angle of repose of 28° will be maintained once the dump stabilized.
2	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.	Being Complied	CTE and CTO have been vested to JSW Steel Ltd for 2 years. New CTE vide letter no 5113/IND-II-CTE-6463 dated 26.03.2021 and CTO vide letter no 6972/IND-I-CON-247 dated 31.03.2025 have been obtained from OSPCB. CTE & CTO has been attached as **ANNEXURE I.**
3	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.	Complied.	No Wild Life Sanctuary/Tiger Reserve/National Park/ Elephant corridor within the core as well as within the buffer zone of the project.
4	The project proponent shall obtain prior approval of the competent authorities for drawl of requisite quantity of surface water and ground water for the project before commencing the mining activity.	Complied	There is no drawdown of surface water. NOC from CGWA for 1000 m3/day is obtained vide NOC number CGWA/NOC/MIN/REN/3/2025/11092 dated 10/03/2025. The copy of the same has been attached as **Annexure II**.

5	No mining activities are allowed in forest area for which the FC is not available.	Being Complied	The present mining operation is restricted within FC Transfer area over 447.811 ha (Including 44.70ha forest land already diverted). Vide letter No. FE-DIV-FLD-0007- 2022- 5306/FE&CC, dated 14.03.2022. FC Transfer letter is attached as **ANNNEXURE III**. Forest clearance applied over 46.757 Ha Forest land to the forest department with vide letter no. JSW/S/CO/2023/773 dated 28.11.2023.
6	The condition 3(iii)b of the guidelines issued by the Forest Conservation Division in this Ministry vide F. No. 1 1-362/2012- FC dated 1st February, 2013 is not being prescribed in view of Hon'ble Supreme Court order dated 27.01.2014 and the EC is subject to the final order of the Supreme Court in the matter.	Being Complied	Same as S. No. 5.
7	Traffic density on the route of mineral transportation shall be regularly monitored and report shall be submitted along with compliance report.	Complied	Iron ore lumps and iron ore fines extracted from the mine is being transported through railway/road/port to JSW & other Steel Plants. There are two nos of railway siding namely RMJC-JSW Railway Siding and part of BIL Siding existing within the ML area. Traffic density study has been regularly carried out and the report has been submitted in NEERI Compliance. NEERI Compliance report has been attached as **ANNEXURE IV.**
8	As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analyzed for their mineralogical composition and records maintained.	Complied	Regular monitoring of ambient air quality parameters along with mineralogical composition being carried out and Monitoring Reports are attached as **ANNEXURE V**. Vendor is a recognized NABET, MoEF & CC accredited laboratory.
9	Mineral handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Complied	Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher & screening plant) and other areas. Same are being properly maintained and operated for proper dust control. The photos for the same has been attached as **ANNEXURE VI**.

10	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.	Complied	Regular water sprinkling through mobile water sprinkler tankers being carried out on haul roads and nearby mineral dispatch roads to avoid generation of dust during movement of vehicles. Fixed auto sprinklers arrangement has been made on both sides of major haul road. Regular maintenance of Haul roads is being carried out to avoid generation of dust during movement of vehicles. **ANNEXURE VII**. Regular monitoring of ambient air quality parameters being carried out through and data is well within the limit prescribed. AAQ Monitoring reports are attached as **ANNEXURE V.**
11	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Complied	Maximum rain water has already been channelized to Mine Pits and same is being utilized in dust suppression and other mining activities. Existing Retention wall, Garland drains, Check Dams and setting pits are being maintained. Detailed hydrology report has been prepared, recommendations of the study and consultation with CGWA, Additional rainwater harvesting measures/structures will be implemented for rainwater harvesting.
12	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezo meters during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall	Complied	Regular monitoring of ground water level and quality being carried out and Monitoring reports of post-monsoon (November 24) and winter (January 25) are attached as **ANNEXURE V**. Vendor is a recognized NABET, MOEF&CC accredited laboratory. Vendor is a recognized NABET, MoEF & CC accredited laboratory.

	be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.		
13	The project proponent shall regularly monitor the flow rate of the natural water streams Jalpa, Kakrapani Nallah and Baitarni river and the Suna nadi flowing adjacent to the mine lease and maintain the records.	Complied	Regular monitor of the flow rate of the natural water streams of Jalpa, Kakrapani Nallah, Baitarani River and Sunanadi has been carried out. Reports for the same attached as **ANNEXURE V.**
14	The reclaimed and rehabilitated area shall be afforested. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	Being Complied	Around 44.62 ha of land has been backfilled by ex-lessee (M/s Rungta Pvt Ltd). As per approved modified mine plan during the plan period an area of 22.56 Ha will be backfilled. Thus, the total backfilling area at the end of plan period will be 67.18 ha. It has been planned to reclaim the mined-out area by Back-filling and plantation/re- grassing in the conceptual period and compliance status of the same will be submitted to RO, MOEF&CC on six monthly basis.

15	Dimension of the retaining wall at the toe of temporary over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.	Being Complied	Existing Retention wall being maintained to prevent any direct flow of runoff to nearby water bodies as per requirement. So far, the retaining wall upto a length of 3323 m around the dump, backfilling area etc has been constructed by by erstwhile lessee (M/s Rungta Pvt Ltd) and necessary repair of retaining wall is being undertaken on regular basis. As per approved modified mine plan, back filling site and OB dump area are proposed to be surrounded by retaining wall (1.0m Height) and garland drains (1.0m depth) to prevent any direct flow of runoff to nearby water bodies. Retaining wall photos has been attached as **ANNEXURE VIII.**
16	Plantation shall be raised in a specified area including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around the higher benches of excavated void to be converted in to water body, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per Ha.	Complied	In FY 2022-23 a total of 14100 saplings were planted, in FY 2023-24 10000 saplings have been planted and in 2024-25 9000 saplings have been planted. Approximately 3.74 ha of plantation have been established within safety zones. Photos for the same attached as **ANNEXURE IX.**
17	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Complied	Drills equipped with dust extractors/ equipped with water injection system being operated in mine. Controlled blasting is in place. Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher & screening. plant) and other areas. Same are being maintained for proper dust control. Regular water sprinkling through mobile water sprinkler tankers being carried out on haul roads and nearby mineral dispatch roads (express highway) to avoid generation of dust during movement of vehicles. Dust suppressant chemicals are being used to control the dust emission on the haul roads, which also reduces the water consumption.

			Regular maintenance of Haul roads is being carried out to avoid generation of dust during movement of vehicles. Regular monitoring of ambient air quality parameters being carried out and data is well within the limit prescribed. AAQ Monitoring reports are attached as **ANNEXURE V**.
18	Process water discharge and/or any waste water shall be properly treated to meet the prescribed standards before reuse/discharge. The runoff from temporary OB dumps and other surface run off shall be analyzed for iron and in case its concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.	Being Complied	No process water being discharged from the mine. Regular Monitoring of water quality parameters being carried out. Monitoring reports are attached as **ANNEXURE V**.
19	The decanted water from the beneficiation plant and slime/tailing pond shall be re- circulated within the mine and there shall be zero discharge from the mine	Not applicable	There is no beneficiation plant present in the mine.
20	Regular monitoring of the flow rate of the springs and perennial nallahs shall be carried out and records maintained.	Being Complied	Regular Monitoring of the flow rate of the springs and perennial nallahs carried out. Monitoring reports are attached as **ANNEXURE V.**
21	Regular monitoring of water quality, upstream and downstream of river shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	Being Complied	Regular monitoring of water quality of upstream and downstream being carried out. Vendor is recognized NABET, MOEF&CC accredited laboratory. Monitoring reports are attached as **ANNEXURE V**.

22	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.	Complied	Maximum rain water has already been channelized to Mine Pits and same is being utilized in dust suppression and other mining activities. Existing Retention wall, Garland drains, Check Dams and setting pits are being maintained. Detailed hydrology report has been prepared, recommendations of the study and consultation with CGWA, additional rainwater harvesting measures/ structures will be implemented for rainwater harvesting. The photos for the same has been attached as **ANNEXURE X.**
23	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	Being Complied	Mineral carrying trucks are not allowed to go out of the lease area without tarpaulin cover and is being monitored by security personnel at the exit gate. Vehicular emissions being regularly monitored. Also, Security personnel are also do not allow the vehicles to enter into the mines without having valid PUC.
24	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and wastewater generated during mining operation.	Complied	Workshop along with ETP/Oil & Grease trap system being provided within lease area. STP of Capacity 30KLD has been installed. Meanwhile the Soak Pits are being used. The monitoring report for the same has been attached as **ANNEXURE V.**
25	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	Complied	DGPS Surveyed Mining lease boundary superimposed on High Resolution Satellite image of Jajang Iron Ore Mine duly vetted by M/s ORSAC has been attached as **ANNEXURE XI.**
26	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Complied	Initial medical examination & Periodical medical examination of the workers engaged in the the project is being varied periodically and records are maintained. A medical dispensary with full time Doctor has been appointed at mine area for the health check-up of the employees and also the locals.

27	The project proponent shall undertake all the commitments made during the public hearing and effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project, while implementing the project.	Complied	Jajang Mining operation was started from 1 st July 2020 and various community development initiatives are under implementation for community upliftment. Need based assessment survey has been completed and action plan is under implementation for the compliance.
28	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Pan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	Complied	No wild life sanctuary/Tiger reserve/National Park/ Elephant corridor within the core as well as within the buffer zone of the project. The Site-Specific Wild Life Conservation plan has been approved by PCCF vide letter number 1842/CWLW-FDWC-FD-0116-2021, Bhubaneshwar, dated 25/02/2022.
29	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Being Complied	Final Mine Closure plan was approved by erstwhile lessee. After the expiry of the lease on31.03.2020, the lease was put for auction. After getting the lease through auction, mining plan along with progressive mine closure plan has been approved by IBM. As per Approved Modified Mining Plan, iron ore has not been exhausted within the mining lease area.

General Conditions

Sl. No.	E C Conditions	Self - Declaration	Compliance Remarks
1	No change in Iron Ore Processing/Beneficiation technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Not Applicable.	No change in Iron Ore Processing technology. There is no beneficiation plant present at the site.
2	No change in the calendar plan including Processing/Beneficiation of mineral iron ore and waste should be made	Being Complied	Calendar plan is as per approved mine plan. There is no beneficiation plant present at the site.
3	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 microns i.e., PM10) and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	Complied	Regular Ambient air quality monitoring being carried out at four AAQ monitoring stations in core zone and four stations in buffer zone. AAQ monitoring reports are attached as **ANNEXURE V**.
4	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	Being Complied	Noise producing equipment's are covered as far as practicable. Workers engaged in Operations are provided with ear plugs / muffs. Besides this, acoustic enclosures are provided for all machines operating within the mines. Controlled blasting is in place. Regular Noise Monitoring being carried out and Monitoring reports are attached as **ANNEXURE V**.
5	There will be zero waste water discharge from the plant.	Not Applicable	No beneficiation plant present at the site.

6	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Being complied	Personnel working in dusty areas are provided with nose mask, safety glass and earplug with proper safety training. Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher & screening plant) and other areas. Same are being maintained for proper dust control. Preplacement medical examination on and periodical examination on of the workers engaged are being conducted & record maintained.
7	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Complied	Initial Medical Examination & Periodical Medical Examination of the workers engaged in the project are being carried periodically and records are maintained. A medical dispensary with full time doctor has been appointed at mine area for the health check-up of employees and also the locals.
8	A separate environmental management cell with suitable qualified personnel should be set- up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Complied	A dedicated Environment Management Cell under the leadership of AVP Environment. The report for the same has been attached as **ANNEXURE XII.**
9	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	Being Complied	We are in process for implementation of various measures undertaken for environment management plan since the operation started in July 2020. Details of environmental management measures expenditure (head wise breakup) as **ANNEXURE IV.**
10	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Noted	Will be complied

11	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hardcopies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	Being Complied	Last six-monthly compliance report along with monitoring data vide letter no JSW/S/CO/2024/669 dated 15/11/2024 was submitted to Regional Office, MOEF&CC, Bhubaneswar, Zonal Office, CPCB, Kolkata, MS and RO Offices, Odisha. EC Compliance report along with monitoring data being uploaded in company website.
12	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Noted	Noted
13	The State Pollution Control Board should display a copy of the clearance letter at the regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	Noted	State Pollution Control Board/ Committee has displayed EC letter at its regional office, District Industry Centre and the Collector's office/ Tehsildar's Office.
14	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office	Noted	Will be complied within timeline.

	of the Ministry of Environment and Forests, Bhubaneswar by e-mail.		
15	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Complied	It has been published in two local newspapers of the district.

Annexure-4

Annexure-I a

BY REGD POST

OFFICE OF THE
STATE POLLUTION CONTROL BOARD, ODISHA
[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII
Bhubaneswar – 751 012, INDIA

No. 5070 / Ind-II-NOC-5838 Date 21.03.15 /

OFFICE MEMORANDUM

In consideration of the application for obtaining Consent to Establish for **Jajang Iron & Manganese Mine of M/s. Rungta Mines Ltd.,** the State Pollution Control Board has been pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for increase in production of Iron ore from 5.5 MTPA to 16.5 MTPA (12.8 MTPA ROM by fresh excavation + 3.7 MTPA by collection from old dumps / mineral stacks including dry processing) and installation of wet beneficiation plant of capacity 6.0 MTPA (throughput) with the following proposed crushing, screening and beneficiation plants in addition to existing crushing and screening plant :

Sl No.	Name of the Plants	Nos. & Capacity
1.	Fixed Crushing Plants	1x600 TPH, 1x150 TPH
2.	Fixed Screening Plants	1x250 TPH
3.	Mobil Crushing Plants	13x(100-150 TPH)
4.	Mobile Screening Plants	5x300 TPH & 10x150 TPH
5.	Wet Beneficiation Plant	2000 TPH (4x500 TPH)

over a lease hold area of 666.150 ha., at village-Jajang, Bandhuabeda, Palsa (Ka) & Jaribahal in the district of Keonjhar, Odisha with the following conditions.

GENERAL CONDITIONS:

1. This Consent to establish is valid for the product, method of mining and capacity mentioned in the application form. This order is valid for five years, which means the proponent shall commence mining activities for the proposal within a period of five years from the date of issue of this consent to establish order. If the proponent fails to commence mining activities for the proposal within five years then a renewal of this consent to establish shall be sought by the proponent.
2. The mine shall apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of Pollution)Act, 1981 at least 3 (three) months before the commencement of production and obtain Consent to Operate from this Board.
3. No change in mining technology and scope of working shall be made without prior approval of the Board.
4. This consent to establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.

SPECIAL CONDITIONS:

1. **The proponent shall inform the MoEF&CC, Govt. of India for change of capacity of mobile crushing plants as same is not part of the original proposal, for which environmental clearance has been issued by MoEF&CC, Govt. of India vide letter no. J-11015/96/2012-IA.II (M), dated 13.03.2015.**
2. **The proponent however shall limit the capacity of its mobile crusher and mobile screening plant as approved in environmental clearance or IBM approved mining plan whichever is less.**
3. **The mine lease is adjacent to river Baitarani therefore the proponent should go for filter press instead of a tailing pond. However, the tailing ponds shall be used for emergency situation. The proponent shall take adequate measures to protect the river Baitarani.**
4. Both dust suppression (dry fog) and extraction (bag filter) system shall be provided at all dust generating source such as crushing, screening & material transfer points etc. such that, particulate matter concentration in ambient air shall not be more than 1200 $\mu g/m^3$ at a distance of 25.0 ± 2.0 m from the source of fugitive emission in the predominant down wind direction as per MoEF, Govt. of India notification No. G.S.R. 809(E), dated 4.10.2010 (copy enclosed as **Annexure – I**).
5. The suction points of dust extraction system shall be provided at primary crusher discharge chute, screen, all transfer points, secondary crusher discharge chutes and any other dust generating sources. This system shall be connected to bag filters so that particulate matter emission from the stack shall not exceed 100 mg/Nm^3 as per MoEF, Govt. of India Notification no-GSR.-809(E) dated 4th October 2010 (copy enclosed as **Annexure-I**). Stack height for de-dusting unit shall be calculated as per above notification of MoEF, Govt. of India i.e. $H = 74 Q^{0.27}$ where H and Q are stack height in meter and particulate matter (PM) emission in ton/hr respectively.
6. Top soil should be stacked separately with proper slope at earmarked site (s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas.
7. Drill should be wet operated or with dust extractors and controlled blasting should be practices. Pre-wetting of blasting site shall be practiced.
8. The primary crusher, screen and secondary crusher and the conveyor shall be placed under cover.
9. All the product conveyor of the crushers shall discharge the product into a hopper and chute arrangement fitted with dust extraction and bag filter system. Chute shall be maximum 3 meter height from the ground level. Fixed auto sprinklers shall be provided in the stock yard of product.
10. The mine shall make provision to collect the fine products in hopper instead of heaping by free falling to avoid the dust nuisance. The ore fines shall be stacked properly and systematically with retaining wall at the toe to avoid washings during rain. Ore fine transportation shall be done in covered truck.
11. At stockpile and loading plant area, a network of drains shall be constructed at a depth of 1.5 meter below the lowest level on the sites parallel to the stockpile area with interconnected box culverts. The sloping of surface shall be given inward to the stockpiles so that surface water will only infiltrate in to the drain.

12. Dust suppression on mine haul roads, active OB dumps and mine working benches shall be done by spraying water through water sprinklers along with chemical binders/wetting agents at frequent interval in order to reduce water consumption and to improve retention and re-absorption capacity of water. Water sprinklers of fixed type shall also be provided at the mine HEMM maintenance shop, other service centers and approach roads from mines to raw material handling & product handling area to prevent the generation of dust to be air borne.

13. The OB/waste dumps shall be properly dressed benched stopped at low angle (30^0) with terracing and bamboo barricades in the slopes making retaining walls stone barriers at the toe of the dumps gully plugging etc. to prevent the solid erosion during monsoon, besides establishing vegetation on dump top as well as its slope surface. In difficult cases, hydro-seedling technique or use of geo-tiles mat embedded with seeds shall be adopted.

14. Maximum recovery of iron ore fines/micro fines need to be encouraged by adoption of hydro-cyclones, slow speed classifiers In the wet beneficiation circuit in order to increase the life of tailing dam.

15. Tailing pond shall be located on impervious areas with deep water table. The ground under lying the dam must be structurally sound and able to bear the weight of impoundment.

16. The tailing pond shall be covered through vegetation once the life of pond is over.

17. The unit shall make effort to use the tailings generated from wet beneficiation plant as raw materials for value added products like ceramic floor tiles, wall tiles and bricks.

18. At the wet beneficiation plant, process waste water is to be recycled from thickener overflow to the maximum possible extent in order to reduce surface water pollution due to less discharge to the surrounding environment and less process water requirement.

19. Provision of a well-designed tailings dam with reclamation of clarified water and control of seepage water shall be provided by constructing seepage water collection ditch at the downstream side along with the recirculation facilities. Desilting of tailings shall be carried out periodically before onset of monsoon.

20. Garland drains along with settling pit shall be provided around the iron ore fines stock yard to control washout of fines from the stockyard along with surface runoff.

21. Surface run-off from OB dump area, mineral stock yard, top soil storage area and rain water to be pumped from quarry shall be routed through adequate settling pond (designed maximum hourly rain fall basis) to meet prescribed standard of **SS-100 mg/l and Oil & Grease-10 mg/l** before discharge into natural stream/water courses during monsoon.

22. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), Monsoon (August), Post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.

23. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.

24. Oil and grease trap should be installed before discharge of effluent from workshop. Wastewater from the mine pit, check dams or any other discharge leaving lease boundary of the mine should be properly collected, treated so as to conform the following standard i.e. **pH = 5.5 – 9.0, SS = 50 mg/l (during non-rainy day) & 100 mg/l (during rainy day) & Oil & Grease =** 10 mg/l.

25. **Four ambient air quality monitoring stations** for 24 hours operation should be established in the core zone as well as in the buffer zone for PM_{10}, $PM_{2.5}$, SPM, SO_2, NOx and CO monitoring. Location of the stations should be decided in consultation with the State Pollution Control Board. Data on ambient air quality (PM_{10}, $PM_{2.5}$, SPM, SO_2, NOx and CO) should be submitted to the State Pollution Control Board once in six months.

26. Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of M.L. area shall not exceed 75 dB (A) during day time (6.00 AM to 10.00 PM) and 70 dB(A) during night time (10.00 PM to 6.00 AM).

27. **A green belt of adequate width and density preferably with local species along the periphery of the mine, inactive dumps, backfilled area, vacant area, colony and any other vacant area shall be raised so as to provide protection against particulates and noise to ameliorate the environment. A detailed plantation programme in this regard shall be prepared and submitted at the time of making application for consent to operate for assessment.**

28. A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the organization.

29. The Board may impose further conditions or modify the conditions stipulated in this order during installation and/or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented.

30. The above conditions will be enforced, inter-allia, under the provisions of the water (Prevention & Control of pollution) Act, 1974 and Air (Prevention & Control of Prevention) Act, 1981 and Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rule.

Encl: As above

MEMBER SECRETARY

To,

The Director,
Jajang Iron & Manganese Mine of
M/s. Rungta Mines Ltd.,
At- Rungta Office, Main Road,
Barbil, Dist- Keonjhar,
Odisha - 758035.

Memo No._____/Dt._____/

Copy forwarded to:

1. The Secretary, MoEF&CC, Govt. of India, New Delhi.
2. The Secretary Steels & Mines, Govt. of Odisha, Bhubaneswar
3. The Director, Directorate of Mines, Govt. of Odisha, Bhubaneswar
4. The District Magistrate & Collector, Keonjhar.
5. The Deputy Director of Mines, Rourkela.
6. The DFO, Keonjhar.
7. The Regional Officer, SPC Board, Keonjhar.
8. Consent to Operate Section, SPC Board, BBSR
9. Hazardous Waste Management Cell, SPC Board, BBSR
10. Copy to Guard file

SR.ENV. ENGINEER (N)

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcboard.org, Website: www.ospcboard.org

CONSENT ORDER

No. 6972 / IND-I-CON-247 Dt. 31.03.2025 /

CONSENT ORDER NO. 2942

Sub: Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.

Ref: Your online application No.5230256, Dated 14-12-2023 and No.6185160, Dated 19-02-2025.

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: **JAJANG IRON & MANGANESE MINES OF M/S. JSW STEEL LTD.**

Name of the Applicant & Designation: **SHRI SURESH KUMAR MOHAPATRA, AVP**

Address: **AT: JAJANG, PO: JURUDI, DIST: KEONJHAR, PIN-758052, ODISHA**

This consent order is valid for the period from **01.04.2025 to 31.03.2026.**

Details of Products Manufactured

Sl. No	Product	Quantity
01.	Iron Ore (ROM)	12.8 MTPA

Details of Mineral Handing Plants /Units

01.	*Railway siding of handling capacity 7.2 MTPA of sized iron ore & Iron ore fines*
02	*Stationary Crushing Plant of capacity 1x600 TPH & 1x150 TPH.*
03.	*Mobile Crushing Plant of capacity 15x100 TPH*
04.	*Stationary Screening Plant of capacity 1x250 TPH*
05.	*Mobile Screening Plant of capacity 12x300 TPH &7x150 TPH*

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge	Prescribed Standard				
				pH	TSS (mg/l)	BOD (mg/l)	Fecal Coliform (MPN/ 100ml)	Oil & Grease (mg/l)
01	Septic tank (Domestic effluent)	Soak pit	--	5.5-9.0	200	100	--	--
02	Mine drainage water/ surface runoff/other wastewater	On land / inland surface water body	--	5.5-9.0	100 (Rainy day) 50 (Non-Rainy day)	--	--	10

B. Fugitive Emission Standards

Particulate Matter	1200 µg/m^3
Note : Fugitive emission shall be monitored in the predominant downwind direction at a distance 25.0 ± 2.0 metres from the source of fugitive emission as per following :	
Area	**Monitoring Location**
Mine face / Benches	Drilling, excavation and loading applicable for operating benches above water table
Haul Roads/ Service Roads	Haul roads to ore processing plant, waste dumps and loading areas and service road.
Crushing plant	Run-off mine unloading at hopper, crushing areas, screens and transfer points.
Screening plant	Screens, conveying and transportation of ore discharge points.
Ore storage and loading	Intermediate stock bin / pile areas, ore stock bin / pile areas, wagon / truck loading areas.
Waste dump	Active waste / reject dumps

C. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site(TPD)	Quantity to be reused off site(TPD)	Quantity disposed off (TPD)	Description of disposal site.
01	Top soil/ over burden	As per approved mining plan	--	--	--	As per approved mining plan

D. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground for liable to review/variation/revocation of the consent order under section 27 of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The occupier would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order without any negligence on his/her part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
12. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
13. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
15. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed impervious.
16. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
17. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
18. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the occupier must adopt alternate satisfactory treatment and disposal measures.
19. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
20. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
21. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Acts or Rules made therein.

22. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
23. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
24. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
25. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner so as to meet the standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
26. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
27. There shall not be any fugitive or episodal discharge from the premises.
28. In case of such episodal discharge/emissions the occupier shall take immediate action to bring down the emission within the limits prescribed by the Board and stop the operation of the plant if required. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
29. The applicant shall keep the premises and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
30. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air poilutants and / or result in violation of the standards mentioned shall be reported to the Headquarters and Regional Office of the Board by E-mail within 2 hours of its occurrence.
31. The occupier has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
32. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the shall be disposed off scientifically to the satisfaction of the Board.
33. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
    i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
    ii) Controlled incineration, wherever possible in case of combustible organic material.
    iii) Composting, in case of bio-degradable material.
34. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
35. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
36. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
37. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
38. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
39. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
40. The occupier shall comply to the conditions stipulated in CTE order issued by Odisha State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF&CC, Govt. of India.
41. The occupier shall abide by E(P) Act, 1986 and Rules framed there-under.
42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs.50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the emissions every month for the parameters indicated in Table. B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.

2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.

4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
   a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
   b. Progress on planting of trees quarterly.

5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.

   a. Performance / progress of the treatment plant.
   b. Monthly statement of daily discharge of domestic and/or trade effluent.

7. Non-compliance with effluent limitations

   a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.

      i) Causes of non-compliance

      ii) A description of the non-compliance discharge including its impact on the receiving waters.

      iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.

      iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and

      v) Steps to be taken by the applicant too prevent the condition of non-compliance.

   b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

   c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.

9. The addition of various treatment chemicals should be done only with mechanical dozers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.

10 In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;

   a) Rotation of crops

   b) Change of point of application of effluent on land

   c) A portion of land kept fallow.

11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.

12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.

13. Proper housekeeping shall be maintained by a dedicated team.

14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned: Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately

E. (1) SPECIAL CONDITIONS:(for the mine and railway siding):

1. This consent order is subject to compliance of orders of the Hon'ble Supreme Court of India in the matter of W. P. (Civil) 114/2014.
2. This consent order is subject to permission from Steel and Mines Department, Government of Odisha for continuing of mining operation.
3. Mining operation is subject to availability of all other statutory clearances.
4. The mine shall confine its activity within the previous lease area of 666.15 ha as EC & CTE are not yet obtained for the new lease deed executed over increased area of 669.078 ha. A declaration to this effect shall be submitted to the Board within 07 days.
5. Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
6. Controlled blasting shall be practiced to minimize generation of dust and fly rocks.
7. Regular water sprinkling shall be carried out in critical areas prone to air pollution such as around crushing and screening plant. Water sprinkling shall also be carried out on haul roads at frequent interval so that it should always remain in wet condition. Haulage roads shall be devoid of ruts and potholes and shall be maintained properly to avoid generation of dust during movement of vehicles.
8. Dust suppression measures preferably dry fog system shall be provided at all appropriate places of mineral handling plants (crusher & screening plant). Loading and unloading areas including all the transfer points shall also have efficient dust suppression arrangements (dry fog system). These shall be properly maintained and operated.
9. Fixed auto sprinklers shall be provided on both sides of major haul road and approach road of the mine and inside railway siding. Frequency of water sprinkling through mobile water tankers shall be increased till installation of fixed sprinklers.
10. Wheel washing facility for the ore transport vehicles shall be provided at the exit point of the mine. The wheel washing facility shall be integrated with complete recirculation system.
11. The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (both bottom & top).
12. Fog cannon of at least 40 m throw shall be deployed at fine ore stock piles and loading areas in the mine.
13. A truck parking plaza shall be developed with its runoff management facilities.
14. Regular water sprinkling on mineral transportation roads passing through the habitation area as well as other strategic point on the National Highway shall be done jointly by the mining lessees in consultation with the Regional Officer.

15. Regular water sprinkling shall be done on approach roads, stockpiles, railway siding area and transportation road (Banspani to Bamebari) to suppress fugitive dust during plying of vehicles.
16. Four Ambient Air Quality Monitoring Stations shall be established in core zone and buffer zone for monitoring of ambient air quality and location of the stations shall be decided in consultation with the Regional Officer, State Pollution Control Board based on the metrological data, topographical features and environmentally and ecologically sensitive targets.
17. The monitoring of ambient air quality shall be carried out twice in a week (24 hourly) at a particular site and the consolidated data shall be submitted to the State Pollution Control Board, once in a year.
18. The ambient air quality shall remain within prescribed national ambient air quality standards.
19. Four Continuous Ambient Air Quality Monitoring Stations (CAAQMS), with data transfer facility to SPCB server shall be established in core and buffer zone. The locations of these stations shall be decided in consultation with the Regional Officer, State Pollution Control Board, based on metrological data, topographical features and environmentally and ecologically sensitive targets.
20. The CAAQMS shall be properly maintained and calibrated from time to time to ensure that spurious data are not transmitted to the SPCB server.
21. Fugitive Dust Emission Monitoring shall be carried out at the places as stated in Part-B of this order. The monitoring of fugitive dust shall be carried out twice in a week (24 hourly) at a particular site and consolidated data shall be submitted to the State Pollution Control Board, once in a year.
22. The topsoil generated shall be stored at earmarked site (s) only and stabilized with plantation or shall be used for land reclamation and plantation.
23. The over burden generated during the course of mining shall be stacked at earmarked dump site (s) and stabilized with plantation or used for reclamation of excavated land followed by plantation.
24. The project proponent shall ensure that no natural watercourse and / or water resources are obstructed due to any mining operations.
25. Check dams and check weirs shall be constructed at appropriate places of the mine lease area to prevent direct flow of runoff to nearby water bodies. The surface run off water from the existing runoff management system shall meet the prescribed standards as stated in Sl. 2 of Part-A of this order.
26. Retention wall shall be constructed at the toe of topsoil dump and OB dump. Garland drain shall be constructed around topsoil dumps, over burden dumps, mineral stack yards and railway siding area terminating at settling pit to prevent direct disposal of runoff to nearby water bodies.

27. Garland drain and sedimentation pit shall be de-silted after monsoon or as and when required. The runoff discharge quality from runoff management system shall meet the standards prescribed as stated in Sl. 2 of Part-A of this order.
28. Domestic effluents shall be treated in a sewage treatment plant (STP) and or shall be discharged to soak pit via septic tank constructed as BIS specification. The treated wastewater quality of STP shall remain within the following standards and shall be used for plantation:

pH	-	6.5 -9.0
TSS	-	<100 mg/l
BOD	-	30 mg/l
Fecal Coliform	-	<1000 MPN/100 ml.

29. ETP comprising of oil and grease trap with sedimentation pit shall be provided for treatment of workshop effluent and treated effluent shall remain within the following prescribed standards and shall be re-used for washing of vehicles:

pH	-	6.5 -8.5
TSS	-	50 mg/l
Oil & Grease	-	10 mg/l
COD	-	150 mg/l

30. Regular monitoring of water quality of upstream and downstream of surface water bodies existed if any within 5 Km shall be carried out once in every month and record shall be maintained and submitted to the State Pollution Control Board once in every year. Monitoring shall be carried out through MoEF & CC accredited laboratory.
31. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.
32. The mine shall take necessary action for compliance with the air and water quality standards as stipulated in Part-A and Part-B of this order.
33. Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of mining lease area shall not exceed 75 dB(A) during day time (6.00 AM to 9.00 PM) and 70 dB(A) during night time (9.00 PM to 6 AM).
34. Adequate noise barriers shall be provided surrounding the crushing and screening plants to control noise pollution and avoid impact on wildlife due to operation of crushing and screening plants during night hours.
35. Online noise monitoring system shall be installed to monitor noise level during night hours.
36. Protective barriers shall be provided for the lights to prevent illumination towards the forest area during night hours.

37. Ambient air quality monitoring data, noise monitoring data and water / wastewater quality monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.
38. The height of the stack connected to DG sets of capacity more than 800 KW (1000 KVA) shall conform to the following:
    i) $14Q^{0.3}$, Q = Total SO_2 emission from the plant in kg/hr.
    ii) Minimum 6m. above the building where generator set is installed.
    iii) 30 m.
39. The height of the stack connected to DG set of capacity less than and upto 800 KW (1000 KVA) shall conform to the following:
    i) $H = h+0.2\sqrt{KVA}$
    ii) h= Height of the building where it is installed in meter
    iii) KVA = Capacity of DG set
    iv) H = Height of the stack in meter above ground level.
40. All DG sets installed before 1.7.2004 shall be scrapped. DG sets complying with either State-I or Stage-II emission norms shall reduce Particulate Matter Emission by 70% by installing RECD without affecting any other emission parameters as per the CPCB guidelines and Board's letter vide No.17927, dated 14.11.2023 and letter No.7146, dated 10.05.2024, in this regard.
41. Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The plantation details shall be submitted to the Board before end of April every year.
42. A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted to this Board every year.
43. The environmental statement report shall be submitted to the Board in prescribed format every year.

E. (2) <u>SPECIAL CONDITIONS: (for railway siding)</u>

1. All entry points, internal roads and loading/unloading areas must be adequately compacted for movement of heavy vehicles by using low permeability material and be cleaned regularly to minimize potential of dust generation and off-site impact.
2. A boundary wall of at least 3 meter height shall be constructed along the periphery of the railway siding to prevent the dust particles from being air borne and/or getting carried away with surface runoff to nearby water bodies.
3. The height of material stack within storage areas must be kept below the height of the boundary wall at all times to prevent the material from being air borne.
4. All mineral storage areas containing fines or dusty materials must be either;
    (a) Covered with tarpaulins when not in use or
    (b) Fitted with Water Sprinkling/Dry fog systems.

5. Green belt of adequate width (at least one row of trees) shall be developed along the boundary of railway siding.
6. At the material storage areas, atomized stationery mist spray of water or conditioning of material with water shall be practiced to prevent dust getting air borne during loading/unloading.
7. Appropriate transfer chutes shall be provided at material discharge points at material storage areas, loading points etc. to minimize the discharge height and spread of air borne dust.
8. Garland drain shall be provided along the boundary wall at the appropriate places depending upon the slope of the area, inside the railway siding. Provision shall be made for collection of wash water from the garland drain and the water, so collected shall be treated in a sedimentation tank for further use inside the premises for green belt or water sprinkling etc.
9. After operation of railway siding, the mine shall submit an annual return to concerned Regional Office in the prescribed format as per Annexure-I by 31st May every year incorporating the quantities and types of materials handled during the preceding financial year (i.e.1st April to 31st March).

31/3/2025

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

TO,

SHRI SURESH KUMAR MOHAPATRA, AVP,
JAJANG IRON & MANGANESE MINES OF M/S. JSW STEEL LTD.,
AT/PO: JAJANG, PS: BAMEBARI
DIST- KEONJHAR, PIN-758052

Memo No._____/Dt._____/

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, **Keonjhar.**
ii) District Collector, **Keonjhar**
iii) Director of Mines, Govt. of Odisha, Bhubaneswar
iv) Director, Environment-cum-Special Secretary, F, E & CC Dept., Govt. of Odisha, Bhubaneswar.
v) D.F.O., **Keonjhar**
vi) Deputy Director of Mines, **Joda**
vii) Chief Env. Scientist, Central Lab. SPCB, Bhubaneswar
viii) Addl. Chief Env. Engineer, (Hazardous Waste Management Cell)
ix) Guard File

CHIEF ENV. ENGINEER (M)
STATE POLLUTION CONTROL BOARD, ODISHA

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART – A : EFFLUENTS

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/ Odourless as far as practible	--	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	a. For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	--	--	--
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5^0C above the receiving water temperature	--	--	Shall not exceed 5^0C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	--	--	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	--	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/1 max.	100	--	--	100
11.	Free ammonia (as NH_3) mg/1 max.	5.0	--	--	5.0
12.	Biochemical Oxygen Demand (5 days at (20^0C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	--	--	250
14.	Arsenic (as As) mg/1 max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/1 max.	0.01	0.01	--	0.001
16.	Lead (as pb) mg/1 max.	01.	1.0	--	2.0

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	--	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	--	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	--	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	--	0.05
23.	Nickel (as Nil) mg/l max.	3.0	3.0	--	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	--	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	--	--	--
27.	Sulphide (as S) mg/l max.	2.0	--	--	5.0
28.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	--	5.0
29.	Radioactive materials a. Alpha emitter micro curle/ml. b. Beta emitter micro curle/ml.	 10^7 10^6	 10^7 10^6	 10^8 10^7	 10^7 10^6
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31	Manganese (as Mn)	2 mg/l	2 mg/l	--	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	--	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	--	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	--	--	20 mg/l

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual *	50	20	-Improved west and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual *	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10µm) or $PM_{10}\mu g/m^3$	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or $PM_{2.5}\mu g/m^3$	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O_3) $\mu g/m^3$	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	- Chemical Method
6.	Lead (Pb) $\mu g/m^3$	Annual *	0.50	0.50	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
		24 Hours **	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m^3	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR) Spectroscopy
		1 Hours **	04	04	
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 Hours**	400	400	- Indophenol Blue Method
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m^3	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m^3	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Annexure- II

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	M/s Rungta Mines Limited		
Project Address:	M/s Rungta Mines Limited, Jajang Iron And Manganese Mine		
Village:	Palasa(kha)	Block:	Joda
District:	Kendujhar	State:	Odisha
Pin Code:			
Communication Address:	M/s Rungta Mines Limited, Rungta Office Main Road, Barbil, , Kendujhar, Odisha - 758035		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 751030		

1.	**NOC No.:**	CGWA/NOC/MIN/REN/3/2025/11092	2.	**Date of Issuence**	10/03/2025
3.	Application No.:	21-4/203/OR/MIN/2009	4.	Category: (GWRE 2024)	Safe
5.	Project Status:	Existing With Additional Ground Water Requirment	6.	NOC Type:	Renewal
7.	**Valid from:**	09/12/2023	8.	**Valid up to:**	08/12/2025

9. Ground Water Abstraction Permitted:

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
1000.00	365000.00			764.00	278860.00	1764.00	643860.00

10. Details of ground water abstraction /Dewatering structures

	Total Existing No						Total Proposed No					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	7	0	0	0	0	0	0	0	0	0
Dewatering Structure*	0	0	0	0	0	0	0	0	0	0	2	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

11.	Ground Water Abstraction/Restoration Charges paid (Rs.):	6146800.00
12.	Environment Compensation (if applicable) paid (Rs.):	0.00

13.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
			Manual	DWLR**	DWLR With Telemetry
	**DWLR - Digital Water Level Recorder	2	0	1	1

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any. The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

CENTRAL GROUND WATER AUTHORITY

Department of Water Resources, River Development and Ganga Rejuvenation
Ministry of Jal Shakti, Govt. of India

Receipt

(As per the guideline Gazette Notification S.O. 3281(E) regarding the New Guidelines dated 24.09.2020 of CGWA, MoJS, Govt. of India)
https://cgwa-noc.gov.in

Application No,:	21-4/203/OR/MIN/2009	Date of Issuence:10/03/2025
Name of Firm:	M/S RUNGTA MINES LIMITED	
AppType Category:	*Manganese ore*	
Application Type:	*Mining*	
PAN/GSTIN No. of Firm/Individual:	/	

SN	Description	Amount (Rs.)
1.	Application Processing Fee	5000.00
2.	Ground Water Abstraction charges	6146800.00
3.	Ground Water Restoration charges	0
4.	Environmental Compensation Charges (ECRGW) *(Date From to) Days-*	
5.	Penalty for non-Compliance of NOC conditions *Condition to be mentioned*	50000.00
6.	Adjustment Charges	
7.	Rebate	
8.	Charges for correction/modification in the existing issued No Objection Certificate	

S.No.	Description	Rate
(i)	Change in User ID	Rs. 1000
(ii)	Change in firm Name	Rs. 5000
(iii)	Extension of No Objection Certificate	Rs. 5000
(iv)	Issuance of duplicate No Objection Certificate	Rs. 5000
(v)	Issuance of corrigendum to No Objection Certificate	Rs. 5000
(vi)	Any other items/correction etc.	Rs. 500

Rs. Rupees Sixty Two Lakh One Thousand Eight Hundred Only	**6201800.00**

This is an system generated invoice, hence, does not require ink signed.

Term and conditions:

i. All disputes are subject to Delhi Jurisdiction.
ii. Any complaint in regard to the rates will not be entertained.

Member-Secretary
CGWA, New Delhi

Annexure-III

By Post/ e-mail

GOVERNMENT OF ODISHA

FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT

*****

No.FE-DIV-FLD-0007-2022-5306/FE&CC, Date 14.03.22

10F (Cons) 106/2013

From

Sri Lingaraj Otta

OSD-cum-Special Secretary to Government

To

The Principal Chief Conservator of Forests & HoFF, Odisha,

Bhubaneswar.

Sub: Transfer of FC approval granted under the Forest (Conservation) Act, 1980 for mining lease from Old lessee M/s Rungta Mines Ltd to new Lessee M/s JSW Steel Ltd as per the provision of the Mines and Minerals (Development and Regulation) Amendment Act, 2021 in respect of Jajang Iron Ore Block under Keonjhar Forest Division, Barbil Tahasil, Dist-Keonjhar for diversion of 447.811 ha of forest land (including 44.70 ha Revenue forest land already diverted)-Compliance of Final approval Order regarding.

Sir,

I am directed to invite a reference to your letter No.1751/9F(MG)-75/2021 dtd.31.01.2022 seeking transfer of FC approval granted under the Forest (Conservation) Act, 1980 for mining lease from Old lessee M/s Rungta Mines Ltd to New lessee M/s JSW Steel Ltd as per the provision of the Mines and Minerals (Development and Regulation) Amendment Act, 2021 in respect of Jajang Iron Ore Block under Keonjhar Forest Division, Barbil Tahasil, Dist-Keonjhar for diversion of 447.811 ha of forest land (including 44.70 ha Revenue forest land already diverted) and with reference to letter File No.FC-11/112/2020-FC (Pt) dtd.07.07.2021 of Govt. of India, MoEF&CC, FC Division, New Delhi.

After careful consideration of the proposal of PCCF & HoFF, Odisha and in pursuance of the guidelines issued by Govt. of India, MoEF &CC vide File No. FC-11/112/2020-FC (Pt) Dated 7th July, 2021, the transfer of approval granted by Govt. of India, MoEF&CC under Section 2 of the Forest (Conservation) Act,

1980 vide F. No.8-88/98-FC (Vol) dtd.28.08.2014 from the erstwhile User Agency M/s Rungta Mines Ltd to M/s JSW Steel Ltd is hereby accorded by the State Govt. for non-forestry use of 447.811 ha of forest land for mining in Jajang Iron Ore Block under Keonjhar Forest Division, Barbil Tahasil, Dist-Keonjhar, Odisha subject to fulfilment of the following conditions.

i. DGPS Survey of 447.811 ha of diverted forest area is to be ensured by DFO, Keonjhar Forest Division in field before handing over the area.
ii. The DFO, Keonjhar Forest Division shall upload the KML files of the area under diversion and the accepted non-forest land for raising Compensatory Afforestation in the e-green watch portal of FSI before handing over forest land to the new lessee.
iii. Erstwhile lessee has deposited the NPV over 543.528 ha forest land which includes the diverted forest area of 447.811 ha. The amount deposited by the new lessee @ Rs.7.50 Lakh per ha is the lumpsum amount realized by State Government on issue of LoI (for the total forest area within the mining lease), which may be adjusted towards balance NPV and any compensatory levies payable in future.
iv. The new lessee shall furnish an undertaking to pay the additional NPV, if so determine, as per the decision of the Hon'ble Supreme Court of India.
v. The new lessee shall also comply the non-complied conditions and if any pointed out by the Govt. of India, MoEF &CC, IRO, Bhubaneswar after conducting the inspection of the area for the appraisal of compliance of approval granted under Forest (Conservation) Act, 1980.
vi. The new lessee, after ceasing mining operation, shall undertake re-grassing the mining area and any other areas which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
vii. Forest Clearance over 102.938 ha forest land will be transferred to the new lessee after issue of FC transfer order and forest clearance over 344.873 ha will be transferred to the new lessee after acceptance of the CA land by the DFO, Keonjhar Forest Division as per the extant procedure for acceptance of CA land.
viii. The new lessee shall have to submit the fresh diversion proposal for the balance forest area of 96.105 ha (99.052 ha as per DGPS) for seeking approval under Section 2 (ii) of FC Act, 1980.
ix. Execution of project activities by the new lessee will be subject to availability of all other statutory clearances required under relevant Acts/Rules for this mining project and compliance of Court's order, if any.

Yours faithfully

14/12/2022

OSD-cum-Special Secretary to Government

FE-DIV-FLD-0007-2022/1/2022

Memo No. 5307 /FE&CC, Date 14-03-22

Copy forwarded to the Assistant Inspector General of Forests (FC), Government of India, Ministry of Environment, Forests & Climate Change (F.C. Division), Indira Paryavaran Bhawan, Alinganj, Jor Bagh Road, New Delhi-110003 for information and necessary action.

dt 14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5308 /FE&CC, Date 14-03-22

Copy forwarded to the Deputy Director General of Forests (Central), Govt. of India, MoEF&CC, IRO, A/3, Chandrasekharpur, Bhubaneswar for information and necessary action.

dt 14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5309 /FE&CC, Date 14-03-22

Copy forwarded to the Principal Chief Conservator of Forests (Wildlife), Chief Wildlife Warden, Odisha / Principal Chief Conservator of Forests (FD&NO), FC Act, O/o PCCF & HoFF, Odisha for information and necessary action.

dt 14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5310 /FE&CC, Date 14-03-22

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle / Divisional Forest Officer, Keonjhar Forest Division for information and necessary action.

dt 14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5311 /FE&CC, Date 14-03-22

Copy forwarded to Steel & Mines Department / R&DM Department/ Director Environment-cum-Special Secretary to Government, FE&CC Department / Director of Mines, Odisha / Member Secretary, SPCB, Odisha/ Collector, Keonjhar for information and necessary action.

dt 14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5312 /FE&CC, Date 14-03-22

Copy forwarded to the Authorized Signatory, M/s JSW Steel Ltd, Plot No.3, Forest Park, Sishu Bhawan Square, Bhubaneswar-751009 for information and

necessary action.

14/3/2022

OSD-cum-Special Secretary to Government

Memo No. 5313 /FE&CC, Date 14-03-22

Copy forwarded to M/s Rungta Mines Ltd, Chaibasa, Dist-West Singhbhum, Jharkhand-833201 / M/s Rungta Mines Ltd, Main Road, Barbil, Dist-Keonjhar, Pin-758035, Odisha for information and necessary action.

14/3/2022

OSD-cum-Special Secretary to Government

Annexure- IV

Steel Limited
Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN:L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax: +91 22 4286 3000
Website : www.jsw.in

No. JSW/S/CO/25/229 Date: 22/05/2025

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

Sub: - Submission of report for the recommendations of carrying capacity study made by CSIR-NEERI, for environmentally sustainable iron and manganese ore mining activity for **Jajang Iron Ore Mine** of **M/s JSW Steel Ltd.**

Ref: - Consent Order No 2942 vide letter no 6972/IND-I-CON-247 dated 31.03.2025.

Dear Sir,

With reference to aforesaid subject, please find enclosed herewith the 9 Points NEERI Compliance Status Report and carrying capacity study made by CSIR-NEERI, for environmentally sustainable iron and manganese ore mining activity of FY 2024-25 for **Jajang Iron Ore Mine of M/s JSW Steel Ltd**.

Seeking your co-operation as always.

Thanking you,

Yours Faithfully
For JSW Steel Ltd

Vijay 22/5/25

Authorized Signatory

Encl: As above

Copy to- 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

NEERI RECOMMENDATIONS COMPLIANCE STATUS - JAJANG MINE

Sl. No.	Recommendation by CSIR-NEERI	Action Taken
1	The individual lease holders shall make assessment and quantification of emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) for the period starting from 1st April to 31stMarch and submit report by June of every year. Efforts should be made to further eliminate/ minimize generation of air pollution/ dust, noise, waste water, solid waste generation in successive years through use of better technology. Necessary guidance many be sought from Regional Officer, SPCB on load calculation.	The project has already been practicing different environmental safeguard measures for prevention of the air pollution. The measures are- 1. Mobile water sprinkling arrangement has been provided for the haul roads, processing area and loading / unloading points to minimize dispersion of air borne dust particles. 2. Fixed water sprinkling of 3.7 km is being maintained and operated. 3. Wet drilling arrangement with acoustic enclosure is in practice to control dust right at the source. 4. Dust Suppression System (Dry fog system) being provided at all appropriate places of mineral handling plants (crusher& screening plant) and other areas. Same are being maintained for proper dust control. Regular Monitoring of ambient air quality parameters being carried out through M/s Ecomen Mining Pvt. Ltd. Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025. 5. No process water being discharged from the mine. Regular Monitoring of water quality parameters being carried out and Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025. 6. Noise producing equipment's are covered as far as practicable. Workers engaged in Operations are provided with ear plugs / muffs. Besides this, acoustic enclosures are provided for all machines operating within the mines. Regular Noise Monitoring being carried out and Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025. 7. The overburden generated as solid waste is stacked at the earmarked areas and are covered by Coir matting. Additional coir-matting of 5678 sq.m is being done. 8. The vehicles carrying the loaded materials are being covered with tarpaulin.

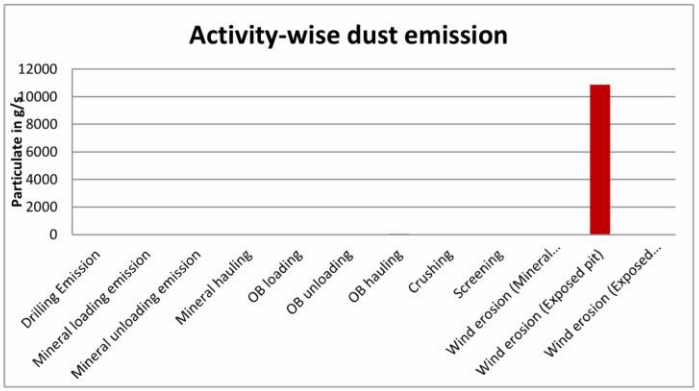
		8. Annual Assessment and quantification of emission load generation (in terms of air pollution, noise, waste water and solid waste) as per prescribed standards is enclosed as **Annexure I.**
2	Monitoring of ambient air and fugitive emission in core zone shall be carried out on daily basis. Minimum four ambient air quality monitoring stations shall be installed in the core zone. Out of four, at least one on-line monitoring station shall be installed in case of mines having EC capacity of 3 MTPA of more. Moreover, one station should be located near the ore carrying truck entry and exit gate of mine. A letter in this regard has already been communicated to individual leaseholder of capacity 3 MTPA and above vide Board's Letter no-7807, dt. 30.06.2018.	Regular monitoring of ambient air and fugitive emission is being carried out through M/s. Ecomen Mining Private Ltd. Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025. We have installed Four Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and Digital Display Board in consultation with Regional Officer, Keonjhar. All 4 CAAQMS are equipped with data transfer facility to SPCB and we have authorized Phoenix Robotix Pvt. Ltd. (Datoms) for transmitting data to OSPCB and already completed the necessary setup for data transfer from all 4 locations to OSPCB Server.
3	Monitoring in buffer zone shall be carried out by through NABET accredited agency preferably, at locations of nearest human habitation including schools and other public amenities located nearest to source of dust generation as applicable. The monitoring station shall be installed in core and buffer zone in consultation with Regional Officer, SPCB.	Regular Monitoring in buffer zone is being carried out at locations of nearest human habitation (residential area) engaging an NABET Accredited laboratory (Ecomen Mining Private Ltd). Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025.
4	Monitoring stations shall be facilated for measurement of CO as an additional parameter to the other parameters SPM, PM10, PM2.5, SO2 and NO2. The monitoring result shall be compiled and submitted to Board on annual basis.	Regular Monitoring of CO as an additional parameter being carried out along with other AAQ data. Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025.
5	All the vehicles engaged in mining and transporting activity in the mine shall have Pollution under Control (PUC) certificate. A record of the same shall be maintained for verification of inspecting agency.	Mineral carrying trucks are not allowed to go out of the lease area without tarpaulin cover and is being monitored by security personnel at the exit gate. Similarly, the transportation vehicles are not allowed to enter the mines without having valid PUC by the security personnel.

6	Noise level should be monitored near the major sources of noise generation within the core zone once in week and submit the report annually. Further, date, time and distance of measurement shall also be indicated with the noise levels in the report. The data shall be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB. The monitoring schedule shall be informed to Regional Officer, SPCB in order to ensure his presence 25% of the monitoring programme.	Weekly Noise monitoring is being carried out through M/s Ecomen Mining Private Ltd. (Accredited Laboratory). Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025.
7	Measurement of flow rate of the springs and perennial nallah passing through the mining lease area shall be done on monthly basis. Identification of the perennial streams to be brought under the monitoring programme and the location the flow measurement shall be determined in consultation with Regional Officer, SPCB. The consolidates report shall be submitted to Board on annual basis.	No natural water course and water resources are obstructed due to mining operations & the same will be taken care of Monitoring of flow rate measurement of the different water bodies is being carried out through M/s Ecomen Mining Private Ltd. Monitoring reports of FY 2024-25 were submitted to your good office dated 22.05.2025.
8	Effort shall be made to recycle or reuse the treated wastewater from ETP of work shop and STP of residential colony instead of discharging to outside.	Workshop along with Oil & Grease trap system being provided in the mine area. STP of capacity 30 KLD has been installed. Meanwhile the soak pits are being used.
9	Annual environmental sustainability report (ESR) shall be made highlighting the efforts made towards environmental protection with respect to different environmental components vis-à-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The report shall be submitted to SPCB and RO, MoEFCC by June of every year.	Annual environmental sustainability report (ESR) in enclosed as Annexure II.

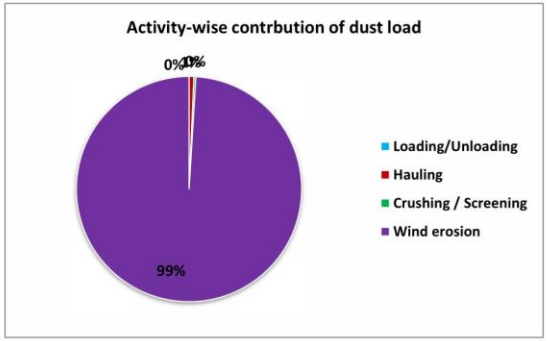
ANNEXURE I

RESULTS OF DUST LOAD CALCULATIONS

	Particulate matter in (g/s)	Particulate matter in (kg/d)	Particulate matter (kg per ton of ore)
Drilling Emission	0.04466251	3.858841145	0.000202873
Mineral loading emission	0.05533552	4.780988904	0.000251353
Mineral unloading emission	0.39455782	34.08979535	0.001792219
Mineral hauling	31.9215104	2758.0185	0.144998607
OB loading	0.67698288	58.49132107	0.003075092
OB unloading	0.4331766	37.42645784	0.001967639
OB hauling	43.4792902	3756.610671	0.197498064
Crushing	4.62962963	400	0.021029389
Screening	27.7777778	2400	0.126176331
Wind erosion (Mineral stack)	1.32571472	114.5417521	0.006021858
Wind erosion (Exposed pit)	10854.5476	937832.9156	49.30513199
Wind erosion (Exposed OB dump)	16.9579436	1465.166328	0.07702888
Total	**10982.24**	**948865.9**	**49.885174**



Major Activity	Dust load (kg/day)
Loading/Unloading	134.788563
Hauling	6514.62917
Crushing / Screening	2800
Wind erosion	939412.624



ANNEXURE-II

Annual Environmental Sustainability Report (ESR) for Jajang Iron Ore Mine of M/s JSW Steel Ltd.

Introduction-

The Jajang iron ore mine (erstwhile lessee M/s Rungta Mines Limited) was one of the mines whose lease expired on 31.03.2020. The lease area is located in villages Jajang, Jaribahal, Palsa (Ka), Bandhuabeda, Tehsil Barbil, District Keonjhar, Odisha state.

Government of Odisha vide letter No. 3007/S&M/Bhubaneshwar/IV(Misc)SM-66/2016 dated 18th March 2020 issued the notice for grant of Mining Lease (ML) for Jajang Iron Ore Block over an area of 666.15 ha as per ROR (669.078 ha as per DGPS computation) in villages Jajang, Jaribahal, Palsa (Ka), Bandhuabeda under Barbil tehsil of Keonjhar district, Odisha for a mineable reserve size of about 34.87 Million tonnes (Mt).

In pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015, Govt. of Odisha issued the notice inviting tender dated 6th December, 2019 for commencement of the auction process to grant the mining lease in respect of Jajang Iron Ore Block located in villages Jajang, Joribahal, Palsa (Ka), Bandhuabeda under Barbil tehsil of Keonjhar district, Odisha. The e-auction process was conducted in accordance with the tender document and the mineral auction rule, 2015 for the said mineral block and M/s JSW Steel Limited was declared as the Preferred Bidder under Rule 9(9) (iii) of Mineral (Auction) Rules, 2015.

Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee are vested in favor of M/s JSW Steel Ltd by the Govt. of Odisha for a period of 2 years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier vide order No-4190/SM, dated 29.05.2020. M/s JSW Steel Limited being successful bidder upon execution of mining lease deed, the Successful Bidder shall immediately, but not later than one hundred twenty days from the date of execution of mining lease, apply afresh for all necessary rights, approvals, clearances, licenses and the like under the applicable statutes, rules or regulations, as the case may be, for obtaining the necessary clearances to enable further continuance of the mining operations beyond two years and vesting order shall be valid for a period of two years from the date of execution of new lease deed or till the date of getting all fresh approvals, clearances, licenses, permits, and the like, whichever is earlier."

Subsequent to signing of the **MDPA, M/s JSW Steel Limited** has made payment of the third instalment being the eighty percent of the upfront value and executed and registered the mining lease with the Government of Odisha on 27.06.2020 and the mining lease was granted in favor of M/s JSW Steel Limited for a period of 50 years w.e.f 27.06.2020.

Indicative Coordinates Range of the Jajang Iron Ore Mine

Pillar No.	Latitude	Longitude
1	21°54'44.23926" N	85°26'14.55590" E
23	21°56'33.49374" N	85°25'45.85255" E

31	21°55'52.37093" N	85°24'49.65672" E
12	21°56'08.11524" N	85°26'50.70226" E

Fully mechanized open cast method of mining by drilling and blasting and by deploying HEMM equipment's like hydraulic drills and excavators, wheel loaders, dumpers, will be undertaken. The height and width of the benches for iron ore will be kept at 9 m and 15 m respectively. The working of benches will be commenced from top and extended to bottom benches. The excavated ROM ore is proposed to be processed in the crushing and screening plants to obtain the lump and fine ore as product mix. The iron ore lumps and iron ore fines extracted from the mine will be transported through railway/port/road to JSW Steel Plants. There are two nos of railway siding namely, RMJC-JSW Railway Siding and part of BIL Siding existing within the ML area. These sidings are being used for transportation of ore of Jajang block.

Production in FY 2024-25

From April 2024 to March 2025, Jajang Mine has produced 8.081 MT Iron Ore (ROM) and dispatched to Steel Plants.

Environment Management in Jajang Mine Air Management- Blasting Operation

- Controlled blasting method is in practice by restriction of explosive charge in the holes.
- Well-designed blast by effective stemming and use of mili second delay detonators, Proper blasting designing to see that the optimum breakage occurs.
- 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.
- Proper maintenance of HEMM
- 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 and unloading points and transfer points for dust suppressions.
- Maintenance of haul road by regular grading is carried out through grader, dozer.
- 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.
- Tarpaulin Covering in Railway Wagons.
- It is ensured that there is no overloading of trucks by having Quick Dispatch system at the weigh bridge near the dispatch gate.
- PUC check is done for the random vehicles.
- Road sweeping Machines are being used at the transportation road outside the lease area.
- All the dispatch trucks are being sent through sensor-based wheel washing system which has recirculation system.
- Dust suppressant chemicals are being used to control the dust emission on the haul roads, which also reduces the water consumption.

MAINTAINING IDEAL HAUL ROAD WIDTH AND BERM HEIGHT

DOZER AND GRADER AT WORK MAINTAINING HAUL ROAD CONDITION

50 KL WATER TANKER

16 KL WATER TANKER

TARPAULIN COVER ON RAILWAY SIDINGS

ROAD SWEEPING MACHINE

WHEEL WASHING SYSTEM

DUST SUPPRESSANT CHEMICAL

Storage of Minerals

- Stack is being prepared and occasional water sprinkling is done to avoid the dust formation. Along with this garland drains are being constructed and fog canons are being used to avoid the fugitive dust emission.
- Regular Fugitive monitoring is done on loading and unloading areas.

DUST CONTROL MINERALS STACKING AREA

- Total 08 Ambient monitoring stations, 04 in core zone and 04 in buffer zone has been established along with 06 fugitive dust emission stations. The values are being analyzed by NABL Accredited
- Laboratory and are well within the limit. Total 4 continuous ambient air quality monitoring stations has been established which are directly connected with SPCB Server.

CAAQMS at Guest House Area Jajang

Electronic Digital Display Board near Jajang Mine Gate No 2

Consolidated Air Quality Monitoring Data of FY 2024-25

JAJANG IRON ORE MINES										
AAQ DATA FOR THE PERIOD APRIL 2024 TO MARCH 2025										
	PM10 [µg/m3]		**PM2.5 [µg/m3]**		**SO2 [µg/m3]**		**NO2 [µg/m3]**		**CO [mg/m3]**	
	Maximm	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Minimum**
CORE ZONE										
Mines Office	76.9	61	24.9	18.2	18.9	16.2	18.8	15.0	0.64	0.55
Entry& Exit Gate No.-06	74.8	65.3	23.4	18.6	22.7	16.2	19	15.5	0.55	0.52
Residential Colony	74.2	64.1	24.9	18.7	18.9	16.2	18.4	15.1	0.61	0.39
Work Shop Area	72.4	51.3	24.5	18	18.9	15.1	18.9	11.3	0.54	0.40
BUFFER ZONE										
Jajang Village	53.5	39.5	14.92	16.4	13.8	18.7	14.5	13.1	0.41	0.35
Jaribahal Village	47.6	40.2	20.2	14.3	15.1	12.2	16.5	13.5	0.39	0.28
Bandhuabeda Village	45.5	42.1	19.6	13.2	15.9	13.5	16	11.1	0.47	0.42
Kamalpur Village	55.7	41.2	18.2	13.6	13.1	11.2	14.6	11.2	0.44	0.39
NAAQ (24hr standard)	**100 [µg/m3]**		**60 [µg/m3]**		**80 [µg/m3]**		**80 [µg/m3]**		**2 [mg/m3] (8 hourly)**	

Water & OB Management

- Garland drains maintained of suitable size around mine area and dump with proper gradients to prevent rain water descent into active mine area.
- Settling ponds maintained to prevent flow of fine particles from OB / Waste dumps, check dams, parapet / retaining walls & garland drains.
- 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.
- Maintenance of all the runoff management structures.

Retaining Wall, Geo Coir Matting & Plantation on Backfilled Area 2

Check Dam near railway siding

Plantation on OB Dump no 2

Safety Zone Plantation

Aftercare of saplings (Planted in Waste Dump - 2 & 4)

Avenue Plantation

In-house Nursery

Orchard in Jajang Mine

View Point

Fruit Bearing & Flowering Plants in Orchard

Hazardous Waste Storage Area in Jajang Mine Workshop

Consolidated Ground Water Quality Monitoring Data of FY 2024-2025

JAJANG IRON ORE MINES						
Kamalpur Village (Borewell)						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	7.4	6.5	6.9	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	215	156	185.5	**500**	**2000**
Total Hardness as CaCO3	mg/l	78.04	42.6	60.32	**200**	**600**
Chloride as Cl	mg/l	19	8.5	13.75	**250**	**1000**
Fluorides as F	mg/l	0.32	0.21	0.26	**1**	**1.5**
Iron as Fe	mg/l	0.35	0.10	0.22	**1**	**No Relaxation**
Sulphates	mg/l	12.5	8.2	10.35	**200**	**400**
Jajang Village (Borewell)						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	7.23	6.52	6.87	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	155	112	133.5	**500**	**2000**
Total Hardness as CaCO3	mg/l	75	51	63	**200**	**600**
Chloride as Cl	mg/l	18	12	15	**250**	**1000**
Fluorides as F	mg/l	0.21	0.18	0.195	**1**	**1.5**
Iron as Fe	mg/l	0.13	0.11	0.12	**1**	**No Relaxation**
Sulphates	mg/l	14.3	12.2	13.25	**200**	**400**

Jurudi Village (Dug well)						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	7.25	6.61	6.93	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	185	142	163.50	**500**	**2000**
Total Hardness as CaCO3	mg/l	62	55	58.5	**200**	**600**
Chloride as Cl	mg/l	21	17	19	**250**	**1000**
Fluorides as F	mg/l	0.31	0.22	0.26	**1**	**1.5**
Iron as Fe	mg/l	0.25	0.11	0.18	**1**	**No Relaxation**
Sulphates	mg/l	14.2	11.9	13.05	**200**	**400**
Jalahari Village (Bore well)						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	6.92	6.76	6.84	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	165	116	140.5	**500**	**2000**
Total Hardness as CaCO3	mg/l	65	47	56	**200**	**600**
Chloride as Cl	mg/l	18.21	12.31	15.26	**250**	**1000**
Fluorides as F	mg/l	0.28	.25	0.2	**1**	**1.5**
Iron as Fe	mg/l	0.31	0.13	0.22	**1**	**No Relaxation**
Sulphates	mg/l	16.5	12.2	14.35	**200**	**400**
Tap water near Jajang village						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	7.15	6.73	6.94	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	142	122	132	**500**	**2000**

Total Hardness as CaCO3	mg/l	57	45	51	**200**	**600**

Chloride as Cl	mg/l	25	13	24	**250**	**1000**
Fluorides as F	mg/l	0.27	0.16	0.21	**1**	**1.5**
Iron as Fe	mg/l	0.32	0.28	0.30	**1**	**No Relaxation**
Sulphates	mg/l	15.6	8.87	14.62	**200**	**400**
Dugwell Near BIL Siding						
Parameter	**Units**	**Max.**	**Min**	**Avg.**	**Acceptable Limits**	**Permissible Limits**
pH	-	7.53	6.58	7.05	**6.5-8.5**	**No Relaxation**
Total Dissolved Solids as TDS	mg/l	148	89	118.5	**500**	**2000**
Total Hardness as CaCO3	mg/l	75	60	67.5	**200**	**600**
Chloride as Cl	mg/l	21	13	17.00	**250**	**1000**
Fluorides as F	mg/l	0.22	0.19	0.205	**1**	**1.5**
Iron as Fe	mg/l	0.32	0.21	0.265	**1**	**No Relaxation**
Sulphates	mg/l	22.6	19.2	20.9	200	**400**

Consolidated Surface Water Quality Monitoring Data of FY 2024-2025

JAJANG IRON ORE MINES				
Baitarini River Up Stream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.32	6.72	**6.5-8.5**
Total Dissolved Solids	mg/l	245	125	**1500**
BOD	mg/l	7	3.5	**3**
DO	mg/l	7.3	3.6	**4**
Chlorides	mg/l	32.3	16	**600**
Fluorides	mg/l	0.35	0.12	**1.5**
Iron	mg/l	0.41	0.13	**50**

Baitarani River Downstream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.41	6.61	**6.5-8.5**
Total Dissolved Solids	mg/l	276	141	**1500**
BOD	mg/l	12	5.6	**3**
DO	mg/l	7	4.8	**4**
Chlorides	mg/l	44	21	**600**
Fluorides	mg/l	7.22	0.38	**1.5**
Iron	mg/l	0.32	0.1	**50**

Suna River Upstream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.54	6.17	**6.5-8.5**
Total Dissolved Solids	mg/l	227	139	**1500**
BOD	mg/l	5.2	1.11	**3**
DO	mg/l	7.5	4.3	**4**
Chlorides	mg/l	34	14	**600**
Fluorides	mg/l	0.41	0.24	**1.5**
Iron	mg/l	0.21	0.19	**50**
Suna River Downstream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.54	6.7	**6.5-8.5**
Total Dissolved Solids	mg/l	281	184	**1500**
BOD	mg/l	10	2.9	**3**
DO	mg/l	6.9	3.2	**4**
Chlorides	mg/l	48	18	**600**
Fluorides	mg/l	0.48	0.16	**1.5**
Iron	mg/l	0.25	0.19	**50**

Jalpa Nala Upstream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	6.97	6.71	**6.5-8.5**
Total Dissolved Solids	mg/l	255	120	**1500**
BOD	mg/l	4.5	1.7	**3**
DO	mg/l	6.2	2.7	**4**
Chlorides	mg/l	26	11	**600**
Fluorides	mg/l	0.37	0.24	**1.5**
Iron	mg/l	0.22	0.11	**50**
Jalpa Nala Downstream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.46	6.98	**6.5-8.5**
Total Dissolved Solids	mg/l	267	113	**1500**
BOD	mg/l	9.3	2.3	**3**
DO	mg/l	6	3.2	**4**
Chlorides	mg/l	42	18	**600**
Fluorides	mg/l	0.39	0.23	**1.5**
Iron	mg/l	0.26	0.14	**50**
Kakarpani River Up Stream				
Parameter	**Units**	**Maximum**	**Minimum**	**Limits for Stream Water Standards**
PH	-	6.95	6.43	**6.5-8.5**

Total Dissolved Solids	mg/l	250	18	**1500**
BOD	mg/l	5.1	3.1	**3**
DO	mg/l	6.1	1.6	**4**
Chlorides	mg/l	32	16	**600**
Fluorides	mg/l	0.31	0.18	**1.5**
Iron	mg/l	0.24	0.12	**50**
Kakarpani River Up Stream				
Parameter	**Units**	**Maxim um**	**Minimum**	**Limits for Stream Water Standards**
PH	-	7.21	6.17	**6.5-8.5**
Total Dissolved Solids	mg/l	350	154	**1500**
BOD	mg/l	6.4	3.1	**3**
DO	mg/l	6.1	3.5	**4**
Chlorides	mg/l	33	15	**600**
Fluorides	mg/l	0.47	0.28	**1.5**
Iron	mg/l	0.37	0.20	**50**

Noise Management

- Providing sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc.
- Planting trees at various places within the lease area to act as acoustic barriers.
- Proper and regular maintenance of vehicles, machinery and other equipment. All HEMMs are monitored for any abnormal sound and rectified with due precaution by maintenance personnel.
- Providing workers with ear muffs & earplugs against high noise levels.
- Conducting regular health check-ups of workers including Audiometry test Controlling the time of exposure of workers towards high noise areas

Jajang Iron Ore Mines			
CORE ZONE	**max**	**min**	**Standards**
DUMPER OPERATOR CABIN	76.1	63.1	**75 dB(A)**
LOADER OPERATOR CABIN	75.2	61.2	
CRUSHER PLANT AREA	74.5	59.4	
SCREEN PLANT AREA	75.9	63.7	
MINES OFFICE AREA	74.7	65.4	
EXCAVOTAR OPERATOR CABIN	76.6	60.8	
DOZER OPERATOR CABIN	71.2	57.8	

BUFFER ZONE					**STANDARDS**	
	Leq Day		Leq Night		**Day Equivalent**	**Night Equivalent**
	MAX	**MIN**	**MAX**	**MIN**		
GUEST HOUSE AREA	53.3	47.2	45.8	38.5	55 dB(A)	45 dB(A)
EAST BOUNDARY	70.3	55.4	69.9	41.6	75 dB(A)	70 dB(A)
WEST BOUNDARY	73.4	58.7	70	48.4		
NORTH BOUNDARY	71.5	56.4	67	55.3		
SOUTH BOUNDARY	71.6	58.3	68.8	54.3		
SOUTH BOUNDARY	70.7	60.6	60.2	56.1		

Environmental Protection Measures Expenditure (head wise breakup) incurred from in FY 2024-25

Expenditure Incurred for 2024-25

Expenditure Incurred on Environmental Protection Measures for the Financial Year 2024-25		
S. No.	**Expenditure head -Particulars**	**Cost incurred in INR**
1	Construction of Retaining walls	810000
2	Construction of Garland drains, desiltation of settling ponds	525000
3	Geotextile works for dump stabilization	1113000
5	Greenbelt development- Pit digging, plantation and maintenance	2068080
6	Operation of Road sweeping machines	3720000
7	Operation of fixed sprinklers	50000
8	Operation of mobile sprinklers	7260576
9	Use of chemical dust suppresants in sprinkling	472000
10	Online air quality monitoring	657434.64
11	Environment monitoring through NABL Accredited third party	1066931
12	Installation of Sewage treatment Plant	-
13	Study conducted on hydrogeology from CGWA Accredited Agency	410000
14	Nursery Development	1813000
15	Landscape development	-
16	Environmental Awareness Programmes	250000
17	Flowmeter calibration and stamping	63000
18	Drip irrigation for plantation	-
Total		**20279021.64**

SUMMARY

OF

ENVIRONMENTAL MONITORING REPORT

(OCTOBER 2024 TO MARCH 2025)

FOR

JAJANG IRON ORE MINE

DISTRICT—KEONJHAR, ODISHA

OF

M/S JSW STEEL LIMITED, ODISHA

ENV MONITORING CARRIED OUT

BY

ECOMEN MINING PVT.LTD

Ecomen Mining Pvt. Ltd.
(An approved Laboratory from MoEF & CC & NABL)
B-1/8, Sector-H, Aliganj, Lucknow 226 024 (U.P.)
Phone No.: (91-522) 2746282; Fax No.: (91-522) 2745726
E-mail: contactus@ecomen.in

Environmental Monitoring Report- Jajang Iron Ore Mines of M/s JSW Steel Limited, Odisha during the period (OCTOBER 2024 to MARCH 2025)

1. Ambient Air Quality Lease Area

Si. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
1.	Near Mines Office	OCT'24	Maximum	72.9	24.6	18.9	18.9	0.64
			Minimum	65.2	18	16.1	15.1	0.55
			Average	68.3	21.3	17.3	16.9	0.6
		NOV'24	Maximum	76.8	26.8	20.6	18.9	0.64
			Minimum	71	20.1	16.1	15.1	0.55
			Average	73.6	23.4	18.3	16.9	0.6
		DEC'24	Maximum	75.8	26.9	18.9	18.9	0.63
			Minimum	68.7	18.5	16.1	15	0.56
			Average	71.6	22.8	17.3	16.7	0.6
		JAN'25	Maximum	77.8	26.9	21	18.8	0.64
			Minimum	70	20.3	16.1	15	0.55
			Average	73.7	23.8	18.0	16.9	0.6
		FEB'25	Maximum	78.2	26.9	20.6	18.9	0.63
			Minimum	70.5	20.1	16.2	15.1	0.55
			Average	74.3	23.6	18.1	17.0	0.6
		MARCH'25	Maximum	71.4	24.6	14.8	28.5	1
			Minimum	52.3	16.2	10.3	21.3	0.64
			Average	60.3	21.6	13.0	24.9	0.8
		OCT'24	Maximum	72.3	24.9	18.9	18.9	0.6
			Minimum	65.1	18.3	16.1	15	0.55
			Average	67.5	21.3	17.4	17.0	0.6

Si. No.	Location	Month	Concentration	PIlio µg/m³	PM2.5 µg/m³	SO2 µg/m³	NO2 µg/m³	CO mg/m³
2.	Entry And Exit Gate	NOV'24	Maximum	77.0	26.8	20.9	19.8	0.6
			Minimum	70.3	20	16.2	15.1	0.55
			Average	73.7	23.5	17.8	16.9	0.6
		DEC'24	Maximum	75.9	26.8	20.4	18.9	0.6
			Minimum	68.1	18.9	16.1	15	0.55
			Average	71.5	22.4	17.6	17.0	0.6
		JAN'25	Maximum	77.4	26.3	20.8	18.2	0.6
			Minimum	70.8	20	16.1	15.1	0.55
			Average	73.9	23.3	18.3	16.6	0.6
		FEB'25	Maximum	78.9	26.9	20.7	18.5	0.6
			Minimum	70	20.1	16	15.1	0.55
			Average	74.5	23.4	18.0	16.7	0.6
		MARCH'25	Maximum	68.6	28.5	18.6	28.2	0.9
			Minimum	54.7	18.5	10.3	21.3	0.58
			Average	61.8	22.5	14.1	24.4	0.8
3.	Guest House	Oct'24	Maximum	72.4	24.9	18.9	19.0	0.6
			Minimum	65	18.2	16.1	15.7	0.55
			Average	67.7	21.2	17.7	17.3	0.6
		Nov'24	Maximum	76.8	26.8	20.8	18.8	0.6
			Minimum	70	20.1	16	15.1	0.55
			Average	73.9	23.2	18.0	17.1	0.6
		Dec'24	Maximum	75.7	26.8	18.8	18.9	0.6
			Minimum	68.2	18.9	16	15.1	0.55
			Average	72.2	22.2	17.6	17.3	0.6
		Jan'25	Maximum	77.6	25.8	20.5	18.9	0.6
			Minimum	68.2	18.9	16.1	15.1	0.55
			Average	73.5	22.1	17.9	17.4	0.6

Sl. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
		Feb'25	Maximum	78.9	26.1	21.0	18.7	0.6
			Minimum	70	20.2	16	15.2	0.55
			Average	74.7	23.3	18.3	17.0	0.6
		March'25	Maximum	70.6	24.6	18.6	26.5	0.9
			Minimum	54.7	18.5	10.3	21.3	0.58
			Average	61.5	21.2	14.4	23.4	0.8
4.	Near Work Shop	Oct'24	Maximum	72.7	24.8	18.8	18.7	0.6
			Minimum	65.8	18.2	16.1	15.1	0.55
			Average	68.1	21.9	17.7	16.8	0.6
		Nov'24	Maximum	76.8	26.9	20.5	18.8	0.6
			Minimum	70.4	20.1	16.1	15.1	0.55
			Average	74.0	23.7	18.1	17.1	0.6
		Dec'24	Maximum	76.0	26.9	19.5	19.0	0.6
			Minimum	68.4	18.8	16.5	15	0.56
			Average	71.7	22.8	17.7	17.0	0.6
		Jan'25	Maximum	77.7	26.4	19.5	18.9	0.6
			Minimum	68.4	18.8	16	15.2	0.56
			Average	72.3	22.7	17.7	17.2	0.6
		Feb'25	Maximum	78.9	26.8	20.5	18.9	0.6
			Minimum	70.3	20.1	16.3	15.6	0.55
			Average	74.6	23.1	18.2	17.4	0.6
		March'25	Maximum	84.0	41.1	19.0	39.0	0.9
			Minimum	61.2	24.6	13.77	28.65	0.66
			Average	73.9	33.7	15.9	34.3	0.8
CPCB Standard			**24 Hrly**	**100**	**60**	**80**	**80**	**4 (1Hrly)**
			Annual Average	**60**	**40**	**40**	**50**	**--**

2. Ambient Air Quality Buffer Area

Si. No.	Location	Month	Concentration	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³
1.	Jajang Village	Oct'24	Maximum	43.2	16.6	12.9	12.9	0.41
			Minimum	34.5	11	10.7	10.1	0.31
			Average	38.8	13.5	11.7	11.5	0.35
		Nov'24	Maximum	44.7	20.8	12.8	12.9	0.43
			Minimum	40	14.3	9.3	10.2	0.3
			Average	42.2	17.2	10.8	11.9	0.35
		Dec'24	Maximum	41.6	12.3	12.2	13	0.4
			Minimum	36.5	10.4	9	10	0.31
			Average	37.9	11.5	11.0	11.4	0.35
		Jan'25	Maximum	41.5	21.4	11.7	12.8	0.42
			Minimum	38.6	14.7	9.5	10.1	0.32
			Average	40.0	17.3	10.8	12.0	0.35
		Feb'25	Maximum	41.7	20.6	12.7	12.9	0.41
			Minimum	39.3	14.7	10.1	10.4	0.32
			Average	40.2	16.8	11.3	12.0	0.38
		March'25	Maximum	76.3	34.5	19.4	36.4	0.61
			Minimum	59.8	22	13.2	26.2	0.43
			Average	67.3	27.9	16.2	30.2	0.53
		Oct'24	Maximum	40.7	13.8	12.5	13	0.43
			Minimum	34.4	11.1	9.4	10.1	0.33
			Average	36.6	12.2	11.5	10.8	0.37

Si. No.	Location	Month	Concentration	PIlio µg/m³	PM2.5 µg/m³	SO2 µg/m³	NO2 µg/m³	CO mg/m³
2.	Jaribahal Village	Nov'24	Maximum	44.3	18.9	12.5	12.2	0.41
			Minimum	40.2	14.4	9.5	10.1	0.32
			Average	42.0	16.8	11.4	11.0	0.37
		Dec'24	Maximum	41	14.7	12.6	13	0.41
			Minimum	34.2	11	9.5	10.9	0.31
			Average	37.0	12.9	10.8	11.9	0.34
		Jan'25	Maximum	40.5	21.3	12.5	12.4	0.42
			Minimum	38.1	15.4	9.5	10.1	0.31
			Average	39.2	17.2	11.3	11.3	0.38
		Feb'25	Maximum	41.8	21.9	12.1	12.7	0.42
			Minimum	38.5	14.3	9.2	10.2	0.3
			Average	40.4	18.2	10.3	11.1	0.35
		March'25	Maximum	70.3	31.5	20.2	34.4	0.63
			Minimum	62.4	18.1	15.2	26.5	0.46
			Average	66.2	23.0	17.9	30.1	0.55
3.	Bandhabeda Village	Oct'24	Maximum	43.9	14.4	12.7	12.5	0.41
			Minimum	35.4	10.5	9.3	10.3	0.3
			Average	38.5	12.2	10.9	11.6	0.36
		Nov'24	Maximum	44.8	20.4	13	12.7	0.4
			Minimum	40.5	14.8	9.3	10.1	0.3
			Average	42.4	17.1	10.8	11.4	0.34
		Dec'24	Maximum	39.8	13.9	11.6	12.9	0.4
			Minimum	34.9	12	9.5	11	0.33
			Average	38.1	12.9	10.6	11.8	0.37
		Jan'25	Maximum	41.4	21.7	12.3	12.9	0.41
			Minimum	38.6	15.5	9.1	10	0.31
			Average	40.1	18.7	10.7	11.7	0.35

Sl. No.	Location	Month	Concentration	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m^3
		Feb'25	Maximum	40.1	19.9	11.2	12.5	0.43
			Minimum	38.4	15	9	10.1	0.31
			Average	39.3	17.5	10.1	11.2	0.36
		March'25	Maximum	79.3	28.6	21.4	34	0.64
			Minimum	60.5	21.1	12.5	24.2	0.57
			Average	69.7	25.6	17.8	28.1	0.61
4.	Kamalpur Village	Oct'24	Maximum	43.9	19.6	12.8	13.2	0.42
			Minimum	37.1	10.2	9.4	10.1	0.3
			Average	41.7	13.1	11.0	11.7	0.36
		Nov'24	Maximum	44.7	21.3	12.6	12.6	0.42
			Minimum	40.7	14.2	9.5	10.7	0.32
			Average	43.3	18.3	10.9	11.5	0.36
		Dec'24	Maximum	40.6	14.7	12.4	12.8	0.38
			Minimum	34.1	10.3	9.1	10.1	0.31
			Average	36.8	11.9	10.9	11.6	0.35
		Jan'25	Maximum	41.3	21.7	13	12.9	0.42
			Minimum	38.2	16.3	9.2	10.1	0.33
			Average	39.6	18.7	10.8	11.4	0.38
		Feb'25	Maximum	41.7	21.8	12	12.9	0.4
			Minimum	38.2	14.2	9.4	11.2	0.31
			Average	40.3	18.4	10.7	12.1	0.35
		March'25	Maximum	76.3	34.5	19.2	36.4	0.61
			Minimum	62.5	22.6	13.2	26.2	0.43
			Average	69.4	28.1	16.2	30.2	0.50

3. Fugitive Emission Monitoring (µg/m³)

Sl. No.	Month	Screen Plant/Smita Plant		Waste Dump/Hatipit area		Mines Face Bench	
		Max	Min	Max	Min	Max	Min
1.	Oct'24	717.8	653.3	717.2	658.3	706.5	665
2.	Nov'24	735.3	656.1	724.2	655.8	733	652.7
3.	Dec'24	710.4	644.5	718.5	667.2	717.8	641
4.	Jan'25	698.1	653.2	713.8	672.3	736.3	662.6
5.	Feb'25	724	652.5	730.8	663.3	732.6	652.5
6.	March'25	776.8	729.5	794.7	757.2	801	728
Six Month Average		**727.1**	**664.9**	**733.2**	**679.0**	**737.9**	**667.0**

Sl. No.	Month	Crusher Plant		Ore storage & Loading Point		Mines Haulage Road/Road no-2	
		Max	Min	Max	Min	Max	Min
1.	Oct'24	721.8	647.4	716.2	646	692.9	641.8
2.	Nov'24	727.1	668.8	727.5	656	731.5	651.2

3.	Dec'24	723.7	656.5	707.9	642.6	724.9	682.3
4.	Jan'25	733.1	660.7	735.9	659.3	731	682.1
5.	Feb'25	737.2	652.2	734.2	658.3	712.8	664.1
6.	March'25	793	752.2	791.6	710.7	775.2	703.5
Six Month Average		**739.3**	**673.0**	**735.6**	**662.2**	**728.1**	**670.8**

4. ILLUMINATION MONITORING (Lux)

	Oct 24		Nov 24		Dec 24	
LOCATION	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
Workshop Area	135.0	124.0	124.0	112.0	118.0	101.0
Screen Plant	112.3	104.8	142.1	121.8	97.3	80.8
Haul Road	78.3	68.9	81.3	68.9	78.3	68.9
Loading Point	88.5	83.9	78.5	45.9	85.5	67.9
Crusher Plant	119.3	95.4	129.3	115.4	110.3	94.4
Parking Yard	89.7	96.4	83.0	97.0	89.7	92.4
Permanent Path	58.6	84.0	48.6	85..0	68.6	84.0
Electric Substation	102.5	123.7	142.5	153.0	92.5	83.7
Rest Shelter	45.0	44.0	85.0	48.0	47.0	54.0
Mines Bench Foot Path	35.4	55.8	54.4	42.8	94.4	88.8
	Jan 25		**Feb 25**		**March 25**	
LOCATION	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
Workshop Area	102.0	85.0	102.0	65.0	180.0	90.0
Screen Plant	77.3	82.8	75.3	81.8	142.0	115.0
Haul Road	74.3	68.4	72.3	65.4	75.0	50.0
Loading Point	80.5	64.9	80.5	64.9	125.0	65.0
Crusher Plant	100.3	84.4	98.3	84.4	153.0	130.0
Parking Yard	89.7	92.4	86.7	72.4	112.0	75.0
Permanent Path	67.6	74.0	67.6	74.0	50.0	30.0
Electric Substation	90.5	68.7	90.5	68.7	140.0	90.0
Rest Shelter	40.0	34.0	45.0	44.0	75.0	40.0
Mines Bench Foot Path	94.7	78.8	94.7	75.8	48.0	35.0

5. Noise Level {dB(A)}

A. Ambient Noise Monitoring

Location	Oct 24		Nov 24		Dec 24		Standards	
	Leq Day	Leq Night	Leq Day	Leq Night	Leq Day	Leq Night	Leq Day	Leq Night
GUEST HOUSE AREA	52.5	40.4	52.5	42.4	58.3	43.0	55 dB(A)	45 dB(A)
EAST BOUNDARY	63.7	52.6	65.5	61.6	59.3	40.8	75 dB(A)	70 dB(A)
WEST BOUNDARY	64.6	54.4	67.7	61.1	55.0	41.4	75 dB(A)	70 dB(A)
NORTH BOUNDARY	62.2	52.6	69.5	62.7	57.6	43.7	75 dB(A)	70 dB(A)
SOUTH BOUNDARY	59.2	52.4	68.8	61.5	52.5	40.3	75 dB(A)	70 dB(A)
Location	**Jan 25**		**Feb 25**		**March 25**		**Standards**	
	Leq Day	**Leq Night**	**Leq Day**	**Leq Night**	**Leq Day**	**Leq Night**	**Leq Day**	**Leq Night**
GUEST HOUSE AREA	54.3	42.7	52.3	41.5	46.4	36.1	55 dB(A)	45 dB(A)
EAST BOUNDARY	69.3	52.8	69.3	60.1	66.4	50.8	75 dB(A)	70 dB(A)
WEST BOUNDARY	65.0	51.4	66.7	60.8	54.8	40.3	75 dB(A)	70 dB(A)
NORTH BOUNDARY	67.6	53.7	66.9	61.5	67.5	62.5	75 dB(A)	70 dB(A)
SOUTH BOUNDARY	62.5	50.3	66.8	61.4	57.1	40.0	75 dB(A)	70 dB(A)

B. Source Noise Monitoring

CORE ZONE	Oct 24				Nov 24			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leq				Leq			
DUMPER	71.5	71.3	73.1	70.8	70.3	69.6	67.9	68.8
LOADER	67.3	67.2	71.5	67.6	72.5	71.6	70.9	67.2
CRUSHER PLANT	72.7	73.6	72.3	70.5	68.2	67.7	71.7	73.7
SCREEN PLANT	71.1	71.1	69.2	70.3	73.3	69.4	70.6	71.1
MINES OFFICE	67.7	69.7	67.7	72.6	69.8	72.2	73.0	67.3
EXCAVOTAR	73.5	68.9	67.7	73.2	67.0	68.2	71.9	72.8
DOZER	73.5	70.3	72.8	68.1	70.6	70.3	72.4	67.0

CORE ZONE	Dec 24				Jan 25			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leg				Leg			
DUMPER	67.7	72.8	67.3	70.7	72.5	70.9	68.1	68.5
LOADER	68.6	67.6	71.2	69.1	73.0	69.2	67.2	72.6
CRUSHER PLANT	70.9	69.7	73.9	70.1	70.7	74.0	68.0	68.8
SCREEN PLANT	73.2	71.4	71.3	73.6	69.3	70.3	70.2	73.0
MINES OFFICE	70.9	67.4	69.7	67.6	67.6	73.6	69.8	67.7
EXCAVOTAR	72.7	68.4	71.1	70.6	71.4	70.7	68.0	67.4
DOZER	68.9	69.5	67.8	72.3	70.9	67.9	69.5	68.1
CORE ZONE	**Feb 25**				**March 25**			
	Week-1	Week-2	Week-3	Week-4	Week-1	Week-2	Week-3	Week-4
	Leg				Leg			
DUMPER	71.2	71.0	73.5	71.5	71.85	63.12	-	-
LOADER	70.3	72.5	69.5	71.8	69.23	66.95	-	-
CRUSHER PLANT	73.1	69.2	71.3	68.0	72.55	64.33	-	-
SCREEN PLANT	71.7	68.8	68.8	71.1	69.03	68.11	-	-
MINES OFFICE	67.2	73.7	70.9	73.6	68.23	58.6	-	-
EXCAVOTAR	69.8	71.1	72.4	72.9	66.68	68.5	-	-
DOZER	68.8	70.6	71.9	70.0	67.08	67.8	-	-

6. Surface Water Quality

JAJANG IRON ORE MINE								
Baitarini River UpStream								
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Limits for Stream Water Standards**
PH	**-**	6.92	6.80	6.75	6.85	6.89	6.93	**6.5-8.5**
Total Dissolved Solids	**mg/l**	276.0	284.0	280.0	294.0	297.0	245.0	**1500**
BOD	**mg/l**	10.5	11.50	10.0	12.0	16.0	2.4	**3**
DO	**mg/l**	6.2	6.5	6.4	6.6	6.7	5.7	**4**
Chlorides	**mg/l**	28.0	30.0	24.0	28.0	27.0	20.0	**600**
Fluorides	**mg/l**	0.44	0.41	0.46	0.46	0.47	0.42	**1.5**
Iron	**mg/l**	0.21	0.24	0.23	0.19	0.20	0.20	**50**
Baitarini River DownStream								
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Limits for Stream Water Standards**

PH	**-**	7.10	7.27	7.25	7.42	7.46	6.98	**6.5-8.5**
Total Dissolved Solids	**mg/l**	296.0	316.0	288.0	296.0	298.0	269.0	**1500**
BOD	**mg/l**	13.0	80.0	12.5	13.45	13.47	2.6	**3**
DO	**mg/l**	5.9	6.3	6.2	6.5	6.6	5.3	**4**
Chlorides	**mg/l**	24.0	28.0	28.0	32.0	35.0	24.0	**600**
Fluorides	**mg/l**	0.42	0.40	0.46	0.48	0.49	0.43	**1.5**
Iron	**mg/l**	0.24	0.26	0.22	0.25	0.26	0.22	**50**
Suna River Upstream								
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Limits for Stream Water Standards**
PH	**-**	6.64	6.50	6.75	6.85	6.87	6.57	**6.5-8.5**
Total Dissolved Solids	**mg/l**	198.0	208.0	188.0	196.0	197.0	190.0	**1500**
BOD	**mg/l**	5.6	5.8	5.8	6.20	6.25	4.2	**3**
DO	**mg/l**	5.4	5.6	5.6	5.8	5.7	5.6	**4**
Chlorides	**mg/l**	22.0	24.0	26.0	30.0	32.0	18.0	**600**
Fluorides	**mg/l**	0.32	0.35	0.35	0.38	0.39	0.35	**1.5**
Iron	**mg/l**	0.17	0.14	0.22	0.26	0.27	0.15	**50**
Suna River Downstream								
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Limits for Stream Water Standards**
PH	**-**	6.94	6.88	6.84	6.95	6.97	6.88	**6.5-8.5**
Total Dissolved Solids	**mg/l**	272.0	284.0	280.0	290.0	297.0	258.0	**1500**
BOD	**mg/l**	9.5	10.5	10.5	11.5	11.6	5.0	**3**
DO	**mg/l**	4.8	4.9	5.1	5.4	5.6	5.6	**4**
Chlorides	**mg/l**	28.0	30.0	30.0	34.0	35.0	20.0	**600**
Fluorides	**mg/l**	0.35	0.38	0.37	0.39	0.37	0.38	**1.5**
Iron	**mg/l**	0.21	0.24	0.20	0.23	0.22	0.23	**50**
Kakarpani River UpStream								
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Limits for Stream Water Standards**
PH	**-**	6.64	6.56	6.76	6.88	6.86	6.49	**6.5-8.5**
Total Dissolved Solids	**mg/l**	178.0	188.0	185.0	190.0	192.0	166.0	**1500**
BOD	**mg/l**	6.1	5.8	6.3	6.6	6.3	2.8	**3**
DO	**mg/l**	5.5	5.3	5.7	5.9	5.5	5.5	**4**
Chlorides	**mg/l**	24.0	26.0	22.0	28.0	28.0	20.0	**600**
Fluorides	**mg/l**	0.27	0.24	0.29	0.32	0.34	0.24	**1.5**
Iron	**mg/l**	0.16	0.18	0.18	0.20	0.21	0.14	**50**
Kakarpani River DownStream								

JAJANG IRON ORE MINE

Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Limits for Stream Water Standards
PH	-	7.09	7.18	7.21	7.37	7.34	7.08	6.5-8.5
Total Dissolved Solids	mg/l	280.0	296.0	295.0	284.0	286.0	177.0	1500
BOD	mg/l	6.4	6.6	6.6	6.8	6.7	6.0	3
DO	mg/l	6.4	6.7	6.6	6.8	6.9	6.1	4
Chlorides	mg/l	29.0	32.0	27.0	24.0	26.0	26.0	600
Fluorides	mg/l	0.41	0.46	0.44	0.47	0.48	0.35	1.5
Iron	mg/l	0.35	0.33	0.33	0.35	0.36	0.16	50
Jalpa River Upstream								
Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Limits for Stream Water Standards
PH	-	6.85	6.90	6.95	6.87	6.86	6.74	6.5-8.5
Total Dissolved Solids	mg/l	210.0	226.0	225.0	240.0	245.0	194.0	1500
BOD	mg/l	8.5	8.0	9.0	9.50	9.52	2.6	3
DO	mg/l	5.5	5.7	5.7	5.9	5.10	5.2	4
Chlorides	mg/l	24.0	20.0	26.0	28.0	27.0	28.0	600
Fluorides	mg/l	0.36	0.34	0.32	0.36	0.38	0.34	1.5
Iron	mg/l	0.18	0.16	0.19	0.20	0.23	0.15	50
Jalpa River Downstream								
Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Limits for Stream Water Standards
PH	-	6.97	6.90	6.92	6.98	6.96	6.83	6.5-8.5
Total Dissolved Solids	mg/l	228.0	234.0	240.0	248.0	258.0	206.0	1500
BOD	mg/l	13.0	12.0	14.0	16.0	15.0	2.8	3
DO	mg/l	4.7	4.9	4.9	5.10	5.11	5.3	4
Chlorides	mg/l	38.0	40.0	34.0	36.0	37.0	36.0	600
Fluorides	mg/l	0.35	0.32	0.37	0.34	0.37	0.37	1.5
Iron	mg/l	0.24	0.26	0.29	0.26	0.29	0.27	50

7. Surface Water Flow Rate

LOCATION NAME	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24
Baitarani River	0.61	0.78	0.67	0.67	0.68	0.50
Kakarpani River	0.65	0.71	0.75	0.78	0.77	0.61
Sona River	0.74	0.74	0.68	0.69	0.69	0.64
Jalpa River	0.82	0.82	0.75	0.74	0.75	0.72

8. ETP

Parameter	Units	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	March-25	Detection Range
ETP Inlet								
pH	-	6.95	6.70	6.84	6.96	6.87	6.90	2.0 -12
Total Suspended Solid as TSS	mg/l	132.0	144.0	138.0	144.0	145.0	86.6	5 - 5000
Total Dissolved Solids as TDS	mg/l	640.0	672.0	675.0	688.0	679.0	1001.0	10-10000
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	40.0	38.0	44.0	48.0	48.0	26.0	5-10000
Chemical Oxygen Demand as COD	mg/l	340.0	356.0	356.0	364.0	367.0	206.0	5-50000
Oil & Grease as O & G	mg/l	6.90	7.15	6.70	7.10	7.12	7.2	5-600
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Acceptable Limits**
ETP Outlet								
pH	-	7.45	7.32	7.26	7.35	7.37	7.32	6.5-9.0
Total Suspended Solid as TSS	mg/l	26.0	32.0	28.0	32.0	36.0	27.6	100.0
Total Dissolved Solids as TDS	mg/l	756.0	768.0	740.0	756.0	764.0	978.0	-
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	19.5	21.0	20.5	22.0	24.0	10.0	30.0
Chemical Oxygen Demand as COD	mg/l	132.0	140.0	138.0	144.0	136.0	72.0	250.0
Oil & Grease as O & G	mg/l	BDL	BDL	BDL	BDL	BDL	5.3	10.0

9. Ground Water Quality

Sl. No.	TESTS	Units	Nov- 2024					
			Dugwell Near Bil Siding	Kamalpur Village	Jajang Village	Jurudi Village	Jalahari Village	Tap Water Near Jajang Mine
1.	pH	-	6.82	7.15	6.98	6.88	6..75	7.15
2.	Total Dissolved Solids as TDS	mg/l	272.0	260.0	260.0	248.0	264.0	288.0
3.	Total Hardness as CaCO3	mg/l	108.0	112.0	80.0	96.0	98.0	120.0
4.	Chloride as Cl	mg/l	24.0	26.0	24.0	22.0	16.0	28.0
5.	Fluorides as F	mg/l	0.18	0.19	0.21	0.14	0.12	0.19
6.	Iron as Fe	mg/l	0.08	0.08	0.09	0.09	0.07	0.09
Sl. No.	TESTS	Units	Jan-2025					
			Dugwell Near Bil Siding	Kamalpur Village	Jajang Village	Jurudi Village	Jalahari Village	Tap Water Near Jajang Mine
1.	pH	-	6.86	7.08	7.02	6.96	6.88	7.08
2.	Total Dissolved Solids as TDS	mg/l	242.0	210.0	224.0	218.0	234.0	228.0
3.	Total Hardness as CaCO3	mg/l	89.0	92.0	82.0	94.0	94.0	115.0
4.	Chloride as Cl	mg/l	9.12	7.12	7.60	7.56	7.30	7.32
5.	Fluorides as F	mg/l	22.0	24.0	26.0	24.0	17.4	26.0
6.	Iron as Fe	mg/l	0.16	0.12	0.24	0.13	0.14	0.18

JAJANG IRON ORE MINE

10. Drinking Water Quality

Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Acceptable Limits	Permissible Limits
pH	-	6.85	6.92	6.94	6.98	6.97	6.87	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	268.0	278.0	280.0	292.0	293.0	237.0	500	2000
Total Hardness as CaCO3	mg/l	80.0	92.0	84.0	88.0	89.0	72.0	200	600
Sulfate as SO4	mg/l	9.50	8.56	10.65	9.45	9.65	9.8	200	400
Chloride as Cl	mg/l	24.0	20.0	27.0	24.0	24.0	18.0	250	1000
Fluorides as F	mg/l	0.14	0.16	0.16	0.14	0.16	0.19	1	1.5
Iron as Fe	mg/l	0.09	0.07	0.10	0.09	0.10	0.09	0.3	No Relax
Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Acceptable Limits	Permissible Limits
pH	-	7.26	7.22	7.49	7.35	7.25	7.03	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	226.0	184.6	248.0	256.0	257.0	194.0	500	2000
Total Hardness as CaCO3	mg/l	64.0	64.0	72.0	80.0	81.0	52.0	200	600
Sulfate as SO4	mg/l	8.70	16.4	10.75	11.60	11.63	8.66	200	400
Chloride as Cl	mg/l	18.0	22.0	26.0	24.0	24.7	12.0	250	1000
Fluorides as F	mg/l	0.19	0.22	0.25	0.27	0.28	0.14	1	1.5
Iron as Fe	mg/l	0.17	0.20	0.21	0.23	0.24	0.10	0.3	No Relax
Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Acceptable Limits	Permissible Limits
pH	-	7.38	7.30	7.35	7.10	7.14	7.12	6.5-8.5	No Relaxation
Total Dissolved Solids as TDS	mg/l	256.0	264.0	260.0	272.0	273.0	219.0	500	2000
Total Hardness as CaCO3	mg/l	76.0	80.0	76.0	84.0	85.0	68.0	200	600
Sulfate as SO4	mg/l	8.50	9.56	11.50	10.50	10.52	10.6	200	400
Chloride as Cl	mg/l	28.0	32.0	28.75	18.0	18.4	18.0	250	1000
Fluorides as F	mg/l	0.15	0.18	0.19	0.15	0.13	0.16	1	1.5
Iron as Fe	mg/l	0.07	0.09	0.10	0.08	0.09	0.09	0.3	No Relax

11. STP

Parameter	Units	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	March-24	Detection Range
STP Inlet								
pH	-	8.25	8.39	8.16	8.25	8.35	6.70	2.0 -12
Total Suspended Solid as TSS	mg/l	132.0	138.0	140.0	148.0	147.0	119.0	5 - 5000
Total Dissolved Solids as TDS	mg/l	790.0	784.0	780.0	796.0	786.0	623.0	10-10000
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	48.0	44.0	44.5	46.0	47.0	35.0	5-10000
Chemical Oxygen Demand as COD	mg/l	652.0	648.0	664.0	652.0	657.0	277.0	5-50000
Oil & Grease as O & G	mg/l	8.95	8.72	8.15	8.45	8.48	8.13	5-600
Parameter	**Units**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**March-24**	**Acceptable Limits**
STP Outlet								
pH	-	7.56	7.40	7.40	7.56	7.66	7.09	6.5-9.0
Total Suspended Solid as TSS	mg/l	37.5	36.0	34.0	38.0	39.0	34.0	100.0
Total Dissolved Solids as TDS	mg/l	578.0	588.0	564.0	572.0	582.0	563.0	-
Biochemical Oxygen Demand as BOD 3days at 27^0C	mg/l	18.0	17.0	16.0	18.5	18.7	18.0	30.0
Chemical Oxygen Demand as COD	mg/l	136.0	128.0	128.0	136.0	138.0	76.0	250.0
Oil & Grease as O & G	mg/l	BDL	BDL	BDL	BDL	BDL	5.13	10.0

12. Vibration Monitoring

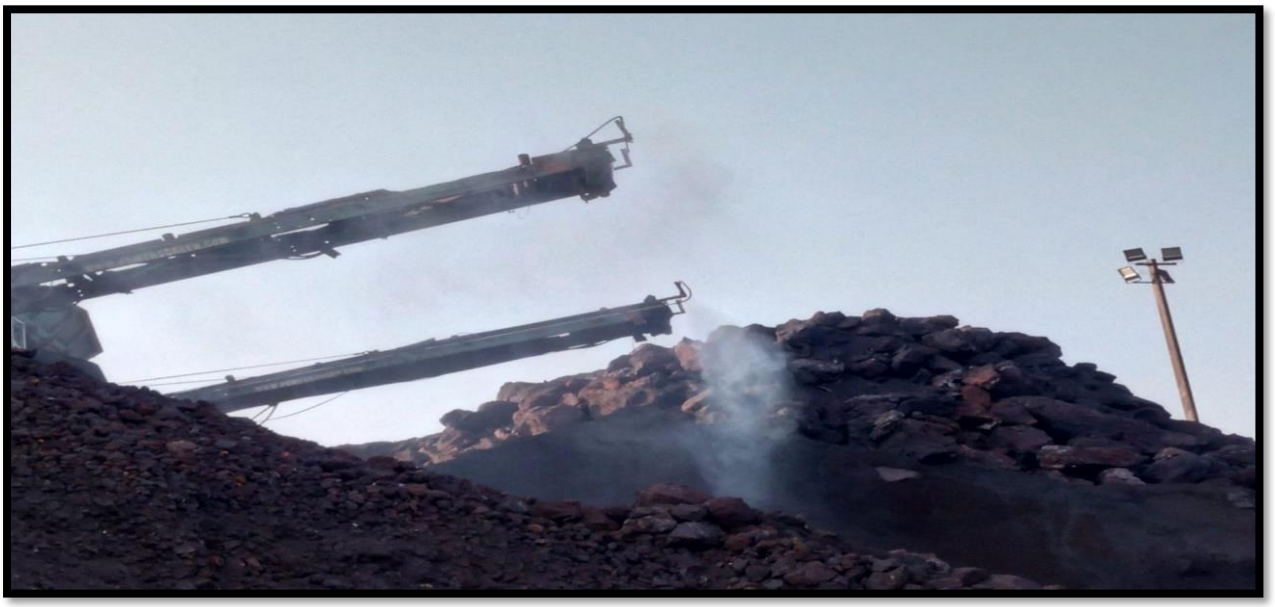
Station no.	Station Name	Instrument location	Season (Summer/Winter/Monsoon/ post monsoon	Peak particle velocity	Air Over pressure	Frequency	Remark
1	Zone-1	Old Mines office(300 m away from the blasting area)	post monsoon	1.05 mm/s	115.6 dBL @ 5.5Hz / .012kPa	2.7 Hz	Within permissible Limit

Verified By

Technical Manager

Authorized By

Quality Manager



50 KL Water Tanker

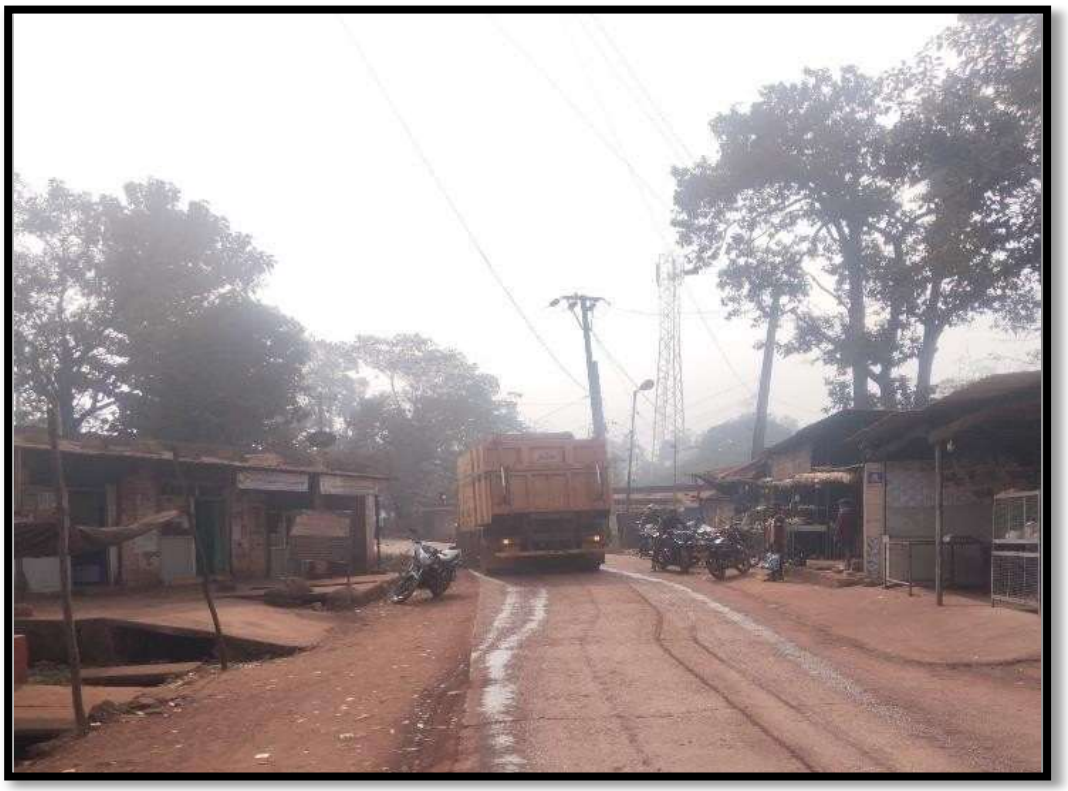
16 KL Water Tanker

DUST SUPPRESSION USING CHEMICAL SURFACTANTS

DUST CONTROL MEASURES AT THE EXIT GATES AND PUBLIC ROADS

WHEEL WASHING POINT NEAR THE EXIT GATE

DUST CONTROL MEASURES AT THE EXIT GATES AND PUBLIC ROADS



CHECK DAM, 40000 cum CAPACITY

ANNEXURE VIII

Annexure- IX

Mango Plantation

Dump Plantation

Drip Irrigation


JAJANG IRON ORE MINE


GUAVA
KHAJUR
ASHOKA

Rooftop Rain water harvesting system

Collection pit of Rooftop Rain water harvesting

Rain water harvesting pits

LANDUSE / LANDCOVER MAP OF JAJANGA IRON ORE MINE IN KEONJHAR DISTRICT OF M/S JSW STEEL LTD.

0 0.375 0.75 1.5
Kilometers

SCALE - 1:5,000

N
W E
S

Jajanga

Annexure- XI

Legend

- Habitation
- Agricultural Land
- Forest Plantation
- Tree Clad Area
- Plantation Over Dump
- Land With Scrub
- Land Without Scrub
- Waterlogging / Marshy / Swampy
- Tank / Pond
- Mining Quarry
- Sub - Grade Dump
- OB Dump
- Stock Yard / Ore Stack
- Back Filling
- Site Services
- Workshop
- Processing Yard
- Magazine
- State Highway
- Haul Road
- Other Road
- Railway Line
- Park / Garden / Zoo
- Safety Zone
- Mining Lease Boundary

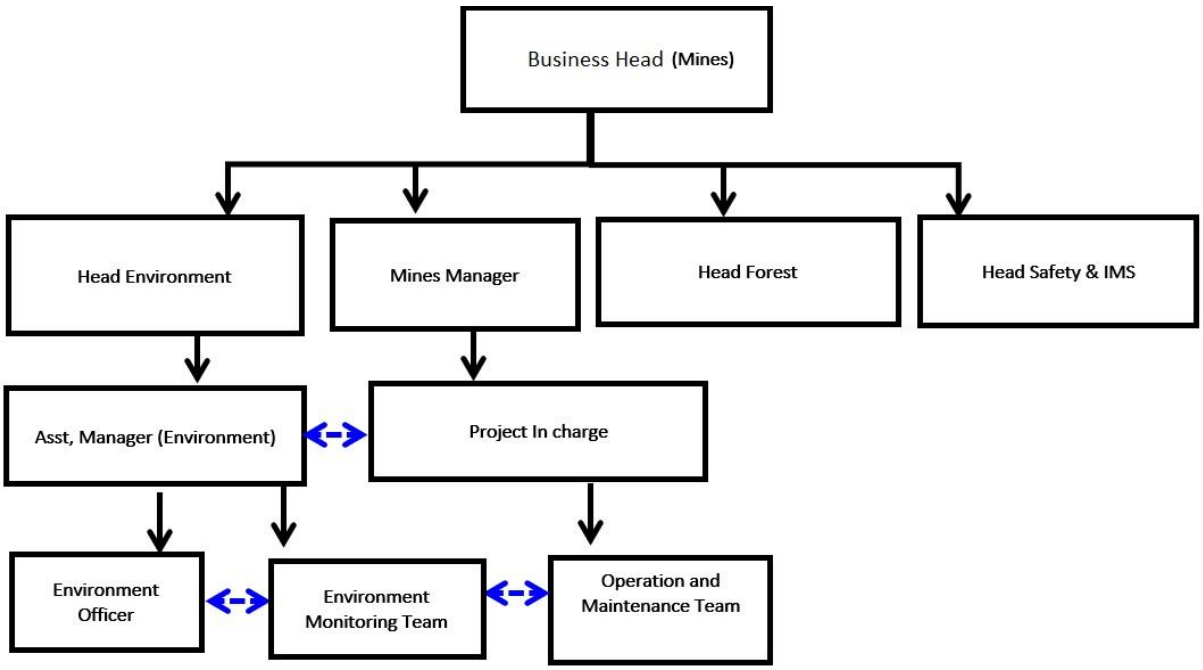
ORISSA SPACE APPLICATIONS CENTRE
Map No. 2601/1
Date 09-12-2021
Auth. Signatory
BHUBANESWAR

SOURCE : -
Drone Image Supplied By M/s JSW Steel Ltd.
Month - August , Year - 2021

ORSAC

FORMATION OF ENVIRONMENTAL MANAGEMENT CELL (EMC)

In order to maintain the environmental quality, regular inspections, audits & monitoring of various environmental components is necessary. M/s. JSW Steel Ltd. has a full-fledged Environmental Management Cell (EMC) for environmental monitoring and control. The EMC team will be responsible for pollution monitoring aspects and implementation of control measures.



Organizational Structure of EMC