

Ref. No: AMNS/ Sagasahi/403

Dated 09.06.2021

The Director (S),  
Integrated Regional Office (IRO),  
Ministry of Environment, Forest & Climate Change,  
A-31, Chandrasekharpur,  
Bhubaneswar

**Sub: Half-yearly Environmental Clearance Compliance Report of Ghoraburhani - Sagasahi Iron Ore Mining Project of ArcelorMittal Nippon Steel India Limited for production of 7,162,538 TPA iron ore (ROM), 18750 TPA Topsoil and 2,868,896 TPA 08/SB/IB (Total excavation: 1,00,50,184 TPA) along with Crushing & Screening Plant and Beneficiation Plant with capacity of 6.7 Million TPA (1250 TPH) Capacity over ML area of 139.165 Ha the period **Oct 21 to March 2022.****

**Ref:** MoEF&CC Environment Clearance letter No. J-11015/192/2016-IA.II (M) dated 28.05.2020.

Dear Sir,

This is in reference to the above subject, we would like to be inform you that, the project has started its operation from 9<sup>th</sup> September 2021.

Therefore, we are sending the six monthly Environmental Clearance compliance report in soft copy by email - roez.bsr-mef@nic.in and the same will be uploaded in our company website i.e. [www.amns.in](http://www.amns.in) with comprehensive data analysis reports (supporting photographs and monitoring reports) for the period **Oct 21 to March 2022** in respect of Ghoraburhani - Sagasahi Iron Ore Mining Project of ArcelorMittal Nippon Steel India Limited.

This is for your kind information, please.

Thanking you,

Yours truly,

For and on behalf of **ArcelorMittal Nippon Steel India Limited**



**Authorized Signatory**

Ramakrishna Chinnamsetty

Head of Mining & Business Development.

ArcelorMittal Nippon Steel India Limited  
(Formerly Essar Steel India Limited)

Pellet Plant, Udayabata, Paradeep - 754 142  
Dist.: Jagatsinghpur  
Odisha, India

Regd. Off: 27km, Surat-Hazira Road, Hazira, Surat  
Gujarat 394270 India  
CIN U27100GJ1976FLC013787

T +91 67 2222 7076  
E [contact@amns.in](mailto:contact@amns.in)  
W [www.amns.in](http://www.amns.in)

A joint venture between ArcelorMittal and  
Nippon Steel Corporation

  
ArcelorMittal

  
NIPPON STEEL

*Encl.: As above*

**Copy to:**

1. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum Office Complex, East Arjun Nagar, Delhi – 110032
2. The Chairman, State Pollution Control Board, Orissa, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012, Email - [paribesh1@ospcboard.org](mailto:paribesh1@ospcboard.org)
3. The Regional Director, Central Ground Water Board, Government of India, South Eastern Region, Bhubaneswar – 751030, Email: [rdser-cgwb@nic.in](mailto:rdser-cgwb@nic.in)

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

SL. NO	SPECIFIC CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
1	<p>This EC for production of 7,162,538 TPA iron ore (ROM), 18750 TPA Top soil and 2,868,896 TPA OB/SB/IB (Total excavation: 1,00,50,184 TPA) along with Crushing &amp; Screening Plant and Beneficiation Plant with capacity of 6.7Million TPA (1250TPH) Capacity in the mine lease area of 139.165 ha shall be operational after submission of an undertaking through affidavit to MoEF &amp;CC within 15 days of receipt of the EC letter, for compliance of all the conditions prescribed herein.</p>	<p>The Project Proponent has submitted an undertaking through affidavit to MoEF &amp; CC for compliance of all the conditions stipulated in the environment clearance letter.  Copy enclosed as <b>Annexure-1</b>.</p>
2	<p>Till the construction of beneficiation plant in the mine lease area, the transportation of ore from mine to Dabuna Beneficiation plant by road is allowed only for 3 years. No more road transportation is allowed after 3 years without permission of the Ministry. From 4<sup>th</sup> year onwards, the ore should be transported only through proposed slurry pipeline or as per the guidelines of CSIR-NEERI's recommendation. PP shall inform Ministry for any deviation in the proposed mode of transport of minerals in case the timeline is not complied with.</p>	<p>The Project Proponent will abide by the condition as stipulated and will inform Ministry for any deviation in the proposed mode of transport of minerals in case the timeline is not complied with.</p>
3	<p>Accessing the forest land for activities shall be applicable after getting Stage-II FC approval. No mining activity shall be carried out without obtaining Stage-II of Forest Clearance for the forest land involved in the project.</p>	<p>The project has obtained Stage –II of Forest clearance vide letter No.8-55/2018FC dt. 15.12.2020 over 120.838 Ha of forest land involved in the project towards mining activity.  Copy enclosed as <b>Annexure # 2</b>.</p>
4.	<p>Installation of crusher and screening plant with proposed capacity only will be allowed. No further installation of crusher and screening plants are allowed without permission of the Ministry.</p>	<p>The Project Proponent is abiding by the said condition and installation of dry fog system for dust suppression purposes. No further installation of crusher and screening plants shall be done without permission of the Ministry.</p>
5	<p>PP shall construct the tailing pond as committed and make regular maintenance for the same.</p>	<p>Project proponent will construct the tailing pond as committed in line with approved mining plan and construction of beneficiation plant as proposed. The applicable regular maintenance for the same will be followed as per the prescribed guidelines of consent to operate.</p>

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6	PP shall make the rain water harvesting system as committed before the EAC.	Project proponent has planned for construction of the rain water harvesting system as committed before the EAC. Presently the project is in its initial stage. In due course of time the measures shall be under taken in the forms of roof top rain water harvesting in residential areas/office campus in core & buffer zone as well as in the form of settling ponds and check dam/check weirs at strategic points of operational core areas as applicable.
7.	PP shall construct garland drains with protective bunds around excavated area, to avoid entrance of surface run off into pit and mixing with ground water. Furthermore, PP shall make garland drains/storm water drains along with siltation/settling tanks at regular interval around the active mine pits through proper plan which follow the natural slope of surface run off and/or to avoid its mixing with groundwater.	Presently mining is at initial stage. There is no such ground water accumulation in the mine operational area. It will be complied in due course of mine development if applicable. However, the mines has developed 500 MTR garland drains at the appropriate locations. Photo enclosed as <b>Photo # 1</b>
8	PP shall make check dams to prevent sedimentation/siltation of natural water courses.	The project has constructed check dams in different locations in North pit. It will be complied in due course of mine development as applicable in south pit area. The PP has planned to construct number of check dams as per approved mining plan.
9	PP shall make progressive green belt and plantation like bench plantation and also make plantation mineral storage, top soil stack, road, magazine and other places as committed.	Project Proponent has planted 9085 Nos of native saplings; 7284nos in safety zone areas and 1801 Nos in outside ML area towards the development of progressive green belt. Photo of planation is enclosed as <b>Photo # 2.</b> Top soil is being stored inside Mining Lease and will be utilised for plantation purpose by means of spreading over the OB dump as soon as the OB dump takes final shape for plantation purposes. Photo of the same is enclosed as <b>Photo # 3.</b>

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10	PP shall comply all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes.	Project proponent is complying all the action plans made for public concerns followed by its regular maintenance along with the record of progressive activity outcomes.
11	The EC is subject to outcome of W.P.(C)No.9247/2018 before Hon'ble High Court of Odisha.	We are abiding by the verdict of W.P.(C)No.9247/2018 before Hon'ble High Court of Odisha.

**B. Recommendation of CSIR-NEERI Report on “Carrying Capacity Study for Environmentally Sustainable Iron and Manganese ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State: The committee has also deliberate the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of iron ore and/or manganese in the state of Odisha. There are recommendation which needs to be implemented by the State Govt. of the carrying capacity study report, the Committee has also recommended the following specific conditions viz.**

SL. No.	SPECIFIC CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
1)	Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.	Project Proponent is implementing the recommendations of carrying capacity study report conducted by CSIR- NEERI.
2)	Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Jada, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.	Department of Steel & Mines, Govt. of Odisha will do the needful .
3)	Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and	A cement concrete road is running through the Mining Lease which has divided Mining into Pit 1 and Pit 2.This road will be connected to both Pit 1 and Pit 2 through a 9 m wide

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	<p><b>green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel &amp; Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.</b></p>	<p>cement concrete Road, which will serve as two way movement of vehicle. The construction of the same is under process. The approx. length of this connecting pucca road will be 300m inside the mines. Besides drainage channel will be made on either side of concrete road and green belt plantation will be developed and maintained.</p>
4)	<p><b>The Committee observed that as per there commendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. This Environmental Clearance for the expansion projects shall be operated only after the compliance of the above mentioned specific condition.</b></p>	<p>Vacuum cleaners is planned for cleaning of all mineral carrying roads inside ML area including road passing centrally through the mining Lease and also for the proposed cement concrete road with estimated budget has been earmarked for procurement Vacuum cleaner for the mine as well as their Opex for first 5 years.</p>
5)	<p><b>Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&amp;CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.</b></p>	<p>The environmental quality parameters are being carried out as per the EC and CTE/CTO conditions.  The project has taken measures for control of road dust and air pollution by engaging number of water tankers for sprinkling purposes and compliances of EC and mine plan conditions.  Photo enclosed as <b>Photo # 5</b></p>
6)	<p><b>Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with</b></p>	

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	<p><b>association of the State Government of Odisha. All existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning it self, and should have system in place within next 5 years.</b></p>	<p>Project proponent shall follow the suggested Ore Transport Mode (SOTM) in association with Government of Odisha within the stipulated time frame.</p>
7)	<p><b>The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing railnetwork, development of additional railway network/ conveyorbelt/ pipelines etc. shall be submitted periodically to Regional office of the MoEF&amp;CC.</b></p>	<p>Department of Steel &amp; Mines, Govt. of Odisha will do the needful .          In addition, the project is carrying out regular water sprinkling on roads. Photo enclosed as <b>Photo#5</b></p>
8)	<p><b>Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.</b></p>	<p>A Parking Plaza with basic amenities has been planned adjacent to mine access road &amp; will be implemented soon.</p>
9)		<p>Department of Steel &amp; Mines, Govt. of Odisha will do the needful .</p>
10)	<p><b>Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re-suspension" shall be adopted by PWD/NHAI/ Mine Lease Holders within a time Period of 3</b></p>	<p>Vacuum cleaners is planned for cleaning of all mineral carrying roads inside ML area including road passing centrally through the mining Lease and also for the proposed cement concrete road &amp; an estimated</p>

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	<p><b>months for existing roads. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.</b></p>	<p>budget has been earmarked for procurement Vacuum cleaner for the mine as well as their Opex for first 5 years.</p>
11)	<p><b>In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel &amp; Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.</b></p>	<p>Department of Steel &amp; Mines, Govt. of Odisha will do the needful .</p>
12)	<p><b>R&amp;D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content up to 45% by 2020 and upto 40% by 2025). In fact, lifecycle assessment of whole process including environmental considerations should be done for techno-economic and environment viability. R&amp;D studies on utilization of mine waste water having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel &amp;</b></p>	<p>A Preliminary bench scale study has already been done through IMMT using the available Core Samples. Based on that, the Iron ore beneficiation plant is proposed which will come into operation from 4<sup>th</sup> year onwards. In addition to that recently IMMT team has visited our mine in connection with the R &amp; D study for the utilization of low grade iron ore.</p>



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	<b>Mines, Individual Mine Lease Holders.</b>	
13)	<p>The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 &amp; 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel &amp; Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel &amp; Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.</p>	Department of Steel & Mines, Govt. of Odisha will do the needful .
14)	<p>State Govt. of Odisha shall make all efforts to ensure exhausting all the iron &amp; manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel &amp; Mines, Govt. of Odisha.</p>	Department of Steel & Mines, Govt. of Odisha will do the needful .
	<b>Mining Operations/Process Related: Project Proponent shall</b>	i) Appropriate Mining Process and machineries have been deployed adhering

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15)	<p>implement the following mitigation measures: (i) <b>Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors ore quipped with water injection system. (ii)After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste)from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii)Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be</b></p>	<p>to approved mining plan.The drilling machine deployed is equipped with water intector system to minimize the generation of dust from source it self.Photo enclosed as <b>Photo #4</b></p> <p>ii) After commencement of full phased mining operation, a study will be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis and accordingly efforts will be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology.</p> <p>iii) Fuel / power consumption, inspection and maintenance schedules of all machineries are being recorded on monthly basis.</p> <p>iv) Digital processing of the entire lease area using remote sensing technique(satellite Imagery) will be done once in 3years for monitoring the land use pattern and the mining activity and also the area excavated in Pits will be demarcated based on the remote sensing analysis and the same will carried out by ORSAC or any agency of national repute for which expenses will be born by us.</p>
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	<p>demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by private agency, the report shall be vetted/authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.</p>	
16)	<p><b>Air Environment Related: Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and un loading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii)The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM10, PM2.5, SO2, NOx and CO monitoring. Location of air quality monitoring 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(based on Emission Load Assessment Study).The number of monitoring locations maybe more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station</b></p>	<p>i) Regular water sprinkling is being carried out by engaging water tankers on haul roads and in critical areas prone to air pollution and having high levels of particulate matters such as crushing &amp; screening plants, loading and unloading and transfer points for dust suppression.</p> <p>ii) An online Ambient air monitoring system is installed inside Mining Lease area for monitoring PM10, PM2.5, SOx and NOx in the core zone on daily basis as per the stipulation. 4 numbers of ambient air quality monitoring stations have been established in the core zone for SPM, PM10, PM2.5, SO2, NOx and CO monitoring .The monitoring report reveals that the above parameters are well within the norm as per NAAQs notification made by CPCB.</p> <p>iii) the monitoring of AAQ is being carried out on regular basis in the buffer zone of the ML area through M/s ITC Pvt. Ltd labs a NABET accredited agency.</p> <p>(iv) We are regularly monitoring the emission of the vehicles including HEMMs to ascertain emission limits. Further regular maintenance of vehicles used in mining operations and in transportation of mineral is being carried out.</p> <p>(v) The vehicles are being covered with tarpaulin and no overloading is allowed during transportation of minerals. Photo enclosed as <b>Photo- 8</b></p> <p>Air quality monitoring at one location along the transport route within the mine (periodically, near truck entry and exit gate) is being carried out within the mine</p>

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	<p>in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM10, PM2.5, SO2, NO and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.</p>	<p>(periodically, near truck entry and exit gate).          Photo enclosed as <b>Photo # 6</b>          Monitoring report enclosed as <b>Annexure #3 (A) to Annexure #3 (D)</b></p>
<p>17)</p>	<p><b>Noise and Vibration Related: Project Proponent shall implement the following mitigation measures:</b> (i) <b>Blasting operation should be carried out only during day time. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.</b> (ii) <b>Appropriate 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</b></p>	<p>i) Blasting operation is being carried out during day time only. Blasting is being done using latest controlled blasting technique.          ii) Noise level is being monitored by Noise Level Meter, the result reveals that the parameter is well within the prescribed norms.          iii) Measurement &amp; Monitoring of vibration level is being done as per the suggestion.          Noise monitoring report enclosed as Annexure # 3(E) &amp; 3(F)</p>

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	<p>ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should 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 (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored at least once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.</p>	
<p>18)</p>	<p><b>Water/Wastewater Related: Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ out come of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flowrate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas</b></p>	<p>i) Based on the exploratory evidences and hydrological study conducted, the lowest working level is 520 mRL whereas the ground water table starts at 503 mRL. Therefore, mining operation will not intersect the ground water table.  ii) No perennial nala / stream passes through the Mining Lease area.  iii) Regular monthly monitoring of ground water level and its quality is being carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation.  iv) Rain water harvesting measures is planned for implementation.  v) The project has planned to implement roof top rain water harvesting structures in camp and office premises.  vi) The project has planned to implement ETP with oil &amp; grease trap pit with re-circulation system for reuse in the workshop areas. Apart from these project has commissioned 80 KL capacity STP within camp premises with re-use facility and to prevent pollution of near by river/other water bodies. Photo of the same is enclosed as Photo #7.  vii) Provisions are made for collection &amp; treatment of Industrial Waste water ( Work</p>

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<p>and riverpassing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of groundwater level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage</p>	<p>shop &amp; Waste water from the mine).  Viii) The project has planned to implement ETP with oil &amp; grease trap pit water with recirculation system for reuse.  x) In the entire lease area wherever possibilities of soil erosion, flow of sediments etc. is anticipated, the project proponent will provide retaining wall, garland drain &amp; check weir/check dams. De-siltation shall be carried out on regular basis.  x) 17000m<sup>2</sup> Geo textile matting has been provided over the dump slopes to minimize erosion from the site. 520 mtr retaining wall followed by garland drain have been provided at the toe of Waste Dump. Photo of the same enclosed as Photo #9  xi) The project has constructed retaining wall and garland drains around the toe of the OB dumps and the wash off being channelized to the near by settling pits as per the approved mining plan. Photo enclosed as Photo- 9(A)  xii) The mine has started operation from September 2021. The waste water stored in Mine pit if any shall be utilised for the sprinkling on haul roads and green belt development.  xiii) There is no waste water discharged from the mine. We are planning to optimize water consumption by adopting suitable technique in consultation with competent authorities.</p>
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<p>treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches/garland drain should be constructed at the foot of dumps to arrest silt from being carried to waterbodies. Adequate number of checkdams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease area and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water with drawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.</p>	
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<b>19)</b>	<p><b>Land/Soil/Over burden Related: Project Proponent shall implement the following mitigation measures:</b></p> <p><b>(i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long(not more than 3 years or as per provisions mentioned in the mine plan/scheme). The top soil should be used for land reclamation and plantation appropriately.</b></p> <p><b>(ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any.</b></p> <p><b>(iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for long period. The dump height should be decided on a case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In critical areas, use of geotextiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc.</b></p> <p><b>(iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly</b></p>	<p>i) Top soil is being stored as per the approved mining plan to preserve its nutrient content and a part of it has been utilised during plantation and green belt development. Photo of the same is enclosed as</p> <p>ii) Its being followed.</p> <p>iii) OB/ Sub- grade Ore is being stacked in earmarked Dump yard as per the approved Mining Plan . Appropriate measures like garland drain, retaining wall are constructed to check erosion and its stabilization.</p> <p>v) Catch drains and Settling tanks constructed at the dump site. Photo enclosed as Photo-10</p> <p>v) Back filling of the area will be done as per the approved mining Plan.</p> <p>vi) There will be minimum generation of Hazardous Wastes except in field machinery maintenance workshops, which will be separately handled with all precautionary measures as per guideline provided under "Hazardous waste Management Rule 2016".</p>
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	<p>after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled areas should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coaltar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.</p>	
<p><b>20)</b></p>	<p><b>Ecology/Biodiversity (Flora-Fauna) Related: Project Proponent shall implement the following mitigation measures: (i) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife</b></p>	<p><b>i) Site specific wildlife conservation plan got approved by PCCF Wildlife and Chief Wildlife Warden, Bhubaneswar with an estimated cost of Rs 1257 Lakhs of which Rs. 348.770 lakhs has been earmarked for implementation of plan within the mine lease area and Rs 908.240 Lakhs has been earmarked for implementation of plan within the buffer zone (ZOI). No such species has been reported in the core zone as per Wild life Management study conducted over the area .</b>  <b>ii. A detailed Site Specific Wild life Conservation Plan has been prepared for</b></p>

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<p>Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation.</p>	<p>Flora and Fauna .  iii. Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area.  iv. Green belt has been proposed &amp; carried all along the safety zone around the Mining Lease, along the central village road.  v. Green belt over 6.755 Ha will be developed with the native species. For the FY 2021-22 plantation done over 1.139 ha.  vi. Financial outlay for Compensatory afforestation as approved in De-reservation Proposal is Rs 2.31 Cr.  Further, proposed budget for Wild life management plan is Rs 12.57 Cr. Out of this an amount of Rs 100 Lakhs has been allocated for conservation of Schedule - I Species.</p>
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	<p>(v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value.(vi)Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status,along with expenditure details.Responsibility: Individual MineLease Holders and State Forest &amp; Wildlife Department.</p>	
21)	<p><b>Socio-Economic Related: Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities.Further,basic amenities and infrastructure facilities like education, medical,roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region.(ii)Land outtees and land losers/affected people,if any,should be compensated and rehabilitated as per thenational/statepolicy on Resettlement and Rehabilitation. (iii)The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity,equality,justice,cleanliness,transparency,employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education,medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas"of these blocks well as other</b></p>	<p>i)A Village Development Committee will be formed to solve the local problems and will act as a platform for regular consultation. This committee will also plan, review and monitor the development initiatives.</p> <p>A comprehensive social welfare activity has been chalked out based on Socio Economic Need Assessment study of the project affected villages as detailed in EIA Report.</p> <p>ii) The State Government has appointed recognized consultant for undertaking Social Impact Assessment as per Odisha Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Rules 2015. The consultant has completed and submitted the study report .</p> <p>iii) In line with the guidelines given in the above rules, project proponent has worked out compensation package of Rs 354.05 Lakhs as per ORRP 2006/ ORFCTLARR2016 provisions. There is no displacement in the project. There are 8 plots of 4 land owners having 26 extended families will be affected.</p> <p>Employment -- Although none of the families are eligible for employment as per the Act, but company proposes to provide job opportunities to one person from each land losing family based on their skill and qualification, for which provision for Skill Development training will be made. A budget of Rs. 31.20 lakhs (@ Rs. 5000/- per month for a trainee for 2 years course) has been provisioned.</p> <p>However, Project proponent will abide by the compensation package as worked out and</p>

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	<p><b>blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no.16/7/2017-M.VI(Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.</b></p>	<p>finalised by District Authority. The programs proposed will be aligned with Government initiatives and prioritized with PMKKKY with DMFT, Sundargarh.</p>
<p><b>22)</b></p>	<p><b>Road Transport Related: Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry &amp; exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel &amp; Mines.</b></p>	<p>i) Project proponent will follow the suggested ore transport mode (SOTM).  ii) Cement concrete road of 9m width inside the lease area to both Pit 1 and Pit 2 which is planned to serve as two way movement of vehicle.  iii) Transportation of ore during road transportation will be done by covering the trucks with tarpaulin.  AAQ monitoring including PM10 is being monitored regularly near the exit &amp; entry gate on regular basis.</p>
<p><b>23)</b></p>	<p><b>Occupational Health Related: Project Proponent shall implement the following mitigation measures: (i) 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 periodically. (ii) Occupational health surveillance program for all the employees/workers (including</b></p>	<p>i) Personal Protective Equipment's (PPE) is being provided to the workers along with adequate training on regular basis to educate and make them conscious.  ii) Occupational health surveillance is being carried out on an annual basis. The occupational health surveillance shows that there is no occurrence of any kind of occupational health disease.  iii) Employee undergoes IME and PME medical examinations. A dispensary with full time qualified doctor has been engaged for the</p>

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	<p><b>casual workers) should be undertaken periodically (on annual basis)to observe any changes due to exposure to dust,and corrective measures should be taken immediately ,if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis.A fulltime qualified doctor should be gaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less)should be conducted followed by follow-up of actions, wherever required. Occupational health Centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).</b></p>	<p>purpose and maintaining the health records of the workers.</p>
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**C. Standard conditions**

**I. Statutory compliances**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
1)	<b>This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.</b>	We will abide by the said condition.
2)	<b>The Project proponent complies with all the statutory requirements and</b>	We are abiding by the said condition.

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	judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition(Civil) No.114 of 2014 in matter of Common Cause versus Union of India & Others before commencing the mining operations.	
3)	<b>The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through the irrespective Department of Mining &amp; Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition(Civil) No.114 of 2014 in matter of Common Cause versus Union of India &amp; Ors.</b>	Not applicable as it's an auctioned mines and executed in March 2021.
4)	<b>This Environmental Clearance shall be come operational only after receiving formal NBWL Clearance from MoEF &amp; CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.</b>	Not applicable to the project.
5)	<b>This Environmental Clearance shall be come operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.</b>	The project has obtained Forest clearance vide File No.8-55/2018FC, dated 15.12.2020 under the provision of Forest Conservation Act, 1980.
6)	<b>Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein .The mining activity shall not commence prior to obtaining Consent to Establish/Consent to Operate from the concerned State Pollution Control Board/Committee</b>	Project Proponent (PP) has obtained Consent to establish & consent to operate for extraction of 7.16 Million TPA iron ore (ROM) production from the OSPCB, Bhubaneswar, Odisha which also includes installation of 1x1350 TPH stationary crushing & Screening plant and 2x500 TPH mobile crushing & Screening Plants, vide Consent Order No. 2955 and vide Letter No. 6004/IND-I-CON-6154 dated 12.04.2021. All the conditions stipulated in the consent to establish & Consent to operate are being implemented. Copy enclosed as <b>Annexure # 5</b>
7)	<b>The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development &amp; Regulation),Act,2015 and rules &amp; regulations made there under. PP shall adhere to various circulars issued by Directorate General</b>	The project proponent will adhere to the provision of the Mines Act, 1952, Mines and Mineral(Development&Regulation),Act,2015 and rules & regulations made there under..

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	<b>MinesSafety (DGMS)and Indian Bureau of Mines from time to time.</b>	
8)	<b>The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.</b>	The project proponent has confined its operation within the surface right granted area only.
9)	<b>The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No.Z-11013/57/2014-IA.II(M),dated29th October, 2014,titled "Impact of mining activities on Habitations-Issues related to the mining Projects where in Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".</b>	Not applicable, if any it will be followed as per the guidelines.
10)	<b>The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.</b>	The Project Proponent has obtained NOC for withdrawal of 95 Cu.m/day ground water from CGWA for the project vide letter No. CGWA/NOC/MIN/ORIG/2022/14796 dated 14.03.2022. Enclosed as <b>Annexure-6</b>
11)	<b>A copy of EC letter will be marked to concerned Panchayat /local NGO etc. if any , from whom suggestion/ representation has been received while processing the proposal.</b>	It has been complied with intimating the letters to local Gram Panchayat, Municipality, DDM Office, Zilla Parishad, Divisional Forest Officer etc.. Copies enclosed as <b>Annexure #7</b> .
12)	<b>State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar'sOffice for 30 days.</b>	Its being complied by SPCB.
13)	<b>The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area.The advertisement shall be done within 7 days of the issue ofthe clearance letter mentioning that the instant projecthas been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the</b>	Project proponent has advertised in the two local newspapers, i.e. prameya Daily (vernacular language) and The Sunday Express – English New Paper within stipulated time period. A copy of the same got submitted to the Regional Office of this Ministry located at Bhubaneswar vide letter AMNS/MIN/SAG/01/2019, dated 10.06.2020. <b>Copy enclosed as Annexure #8</b>

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	<p>Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in).A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.</p>	
14)	<p>The Project Proponent shall inform the MoEF&amp;CC for any change in ownership of the mining lease.In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.</p>	<p>We will abide by the said condition.</p>

**II. Air quality monitoring and preservation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
15)	<p>The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2(two)in down wind direction based on long term climatological data about wind direction such that an angle of 120°is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz.PM10,PM2.5,NO2,CO and SO2 etc.as per the methodology mentioned in NAAQS Notification No.B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.</p>	<p>Presently the monitoring of AAQ is being carried out in the core(04 station) as well as buffer zone(04 stations) of the ML area on regular basis.The monitoring report reveals that the parameters like PM10, PM2.5, CO, SO2 and NOx are within the norm as per NAAQs notification made by the CPCB.</p> <p>Installation of 3 (three)no.s of online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2(two)in down wind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters.Presently Two CAAQMS Stations have been established and operationalized with RT- DAS connectivity to SPCB Server.</p> <p>Photo enclosed as <b>Photo #6</b></p>



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16)	<p><b>Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution where in high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents maybe explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/Central Pollution Control Board.</b></p>	<p>Regular water sprinkling is being carried out by engaging 02 nos. of mobile water tankers (01 nos. 16 KL, 01 no. 08 KL) at haul road, loading and unloading point and transfer points &amp; around the crusher and screening plants and other strategic dust generating areas including the mines haul and mineral dispatch roads.</p> <p>Apart from that auto fixed water sprinkling arrangement shall be provided for mineral dispatch roads.</p> <p>Further, provision of dry fogging for mobile for crusher and screen plants are under progress.</p> <p>Photo enclosed as <b>Photo #5.</b></p>
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**III. Water quality monitoring and preservation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
17)	<p><b>In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.</b></p>	<p>As per the hydrological study conducted the lowest working level is 520 mRL whereas the ground water table starts at 503 mRL. Therefore, mining operation will not intersect the ground water table.</p> <p>The Project Proponent has obtained NOC for withdrawal of 95 Cu.m/day quantity of ground water from CGWA for the project vide letter No. CGWA/NOC/MIN/ORIG/2022/14796 dated 14.03.2022 as well as the Environment clearance for the project vide letter No. F. No. J-11015/192/2016-IA.II(M) dated 28th May 2020.</p>

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18)	<p><b>Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Ground water Department/State Pollution Control Board.</b></p>	<p>Monitoring of the surface water quality is being carried out at 04 locations namely Suna Nadi (Up stream), Suna nadi (Down stream),Karo nalla and Tehrei Nalla. The records are also maintained for this purpose. The surface water quality as well as flow rate is being monitored 4 times in a year i.e. pre-monsoon, monsoon, post monsoon and winter.</p> <p>Monitoring of the ground water quality at 06 locations namely Inside Mining lease area, Sagasahi village, kalmang village,Oraghat village , Gandhalpada village and shankapura village. The records are also maintained for this purpose. The ground water quality is being monitored 4 times in a year i.e. pre-monsoon, monsoon, post monsoon and winter.</p> <p>However, the project is supplying the drinking water to the project nearby villages. The Reports are enclosed as <b>Annexure# 3</b> (Environmental Monitoring Report)</p>
19)	<p><b>Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Ground water Department, State Pollution Control Board.</b></p>	<p>We are conducting ground water quality and level on regular basis by M/s ITC Pvt. Ltd. which is a NABL accredited agency. The monitoring report is being submitted on six-monthly basis to the concerned authourities.</p>
20)	<p><b>The Project Proponent shall undertake regular monitoring of natural water course/ water resources/springs and perennial nallahs existing/flowing in and around the mine lease and</b></p>	<p>We are conducting surface water quality monitoring on regular basis by M/s ITC Pvt. Ltd.</p> <p>Further, no perennial nalla / stream passes through the Mining Lease area.</p>

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	<p>maintain its records. The project proponent shall undertake regular monitoring of water quality up stream and down stream of water bodies passing within and nearby/adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carry out regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis- a-vis suitability for usage as per CPCB criteria and flow rate. Its shall be sured that no obstruction and/or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre-monsoon (April-May), monsoon (August), post-monsoon(November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.</p>	
21)	<p><b>Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in run off shall be monitored along with Total Suspended Solids(TDS), Dissolved Oxygen(DO),pH and Total Suspended Solids(TSS).The monitored data shall be uploaded</b></p>	<p>As such there is no such generation of polluted water from mine activities. However, the Project proponent has engaged NABL accredited and MoEF certified agency named M/s ITC Pvt. Ltd. for the analysis of mines surface run off water quality as applicable and parameters as stated in the conditions. The monitored data is being uploaded on the website of the company as well as displayed at the project site in public</p>

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	<p><b>on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.</b></p>	<p>domain, on a display board, at a suitable location near the main gate of the Company.</p>
22)	<p><b>Project Proponent shall plan, develop and implement rain water harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Ground water Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.</b></p>	<p>In this regard project proponent has engaged and prepared a detail study report in consultation with Regional Director, CGWB, Bhubaneswar to provide Check weirs, check dams, de-silting cum percolation ponds/pits at the strategic locations of the mines lease area. However, suitable rain water harvesting measures like settling pits, check weir, check dams along with roof top rain Water harvesting Structures for the mines; camp and office area will be implemented in due course of mining pit development.</p>
23)	<p><b>Industrial waste water (work shop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The work shop effluent shall be treated after its initial passage through Oil and grease trap.</b></p>	<p>There will be no industrial waste water discharge from the mine. Presently mining is at initial stage. Permanent workshop and Site specific ETP (Oil and grease trap) cum Workshop Service center work is under progress for proper collection and treatment of work shop effluents. The discharge water quality shall be conducted through NABL accredited and MoEF certified agency named M/s ITC Pvt. Ltd. through M/s Qualitek labs Pvt. Ltd, Bhubaneswar, Odisha.</p>
24)	<p><b>The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&amp;Cc and State Pollution Control Board/Committee.</b></p>	<p>Water balance chart has been prepared by the Project proponent and actions will be carried out for reducing the consumption.</p>

**IV. Noise and vibration monitoring and prevention**

SL.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
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No.		
25)	<b>The peak particle velocity at 500 m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.</b>	The peak particle velocity at 500 m distance or within the nearest habitation, is being monitored periodically as per applicable DGMS guidelines.
26)	<b>The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the flood lights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day/night hours.</b>	The noise level is kept within prescribed limit during night as revealed from the monitored data. The illumination is directed away from the nearby village sites so that it will not affect the biological clock of the villagers.  The report of the same enclosed as <b>Annexure - 3(E) &amp; (F)</b>
27)	<b>The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working industry areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/personals/laborers are working without personal protective equipment.</b>	Workers engaged in operations are provided with earplugs/muffs, besides this acoustic enclosure for all machine operating cabins are provided. It is being monitored by Noise Level Meter; the results reveals very well within norms. Apart from that adequate training on safety and Health aspects is being carried out on daily basis among all the employees.

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**V. Mining plan**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN									
28)	<p><b>The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal where in year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, overburden, interburden and topsoil etc.. No change in basic mining proposal like mining technology, total excavation, mineral &amp; waste production, lease area and scope of working (viz. method of mining, overburden &amp; dump management, O.B &amp; dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.</b></p>	<p>All mining activities are carried out in accordance with approved mining plan complying the EC conditions.</p> <table border="1" data-bbox="769 579 1341 705"> <thead> <tr> <th>Year</th> <th>Approved Quantity in MT</th> <th>Achieved Quantity in MT</th> </tr> </thead> <tbody> <tr> <td>2020-21</td> <td>3907656</td> <td>Nil</td> </tr> <tr> <td>2021-22</td> <td>3350613</td> <td>2745042</td> </tr> </tbody> </table> <p>NB: The mine was executed on 26.03.2021 and mining operation commenced wef 9<sup>th</sup> September, 2021.</p>	Year	Approved Quantity in MT	Achieved Quantity in MT	2020-21	3907656	Nil	2021-22	3350613	2745042
Year	Approved Quantity in MT	Achieved Quantity in MT									
2020-21	3907656	Nil									
2021-22	3350613	2745042									
29)	<p><b>The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining &amp; Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.</b></p>	<p>Presently mining is at initial stage. A copy of approved the Final Mine Closure Plan along with Financial Assurance as approved from Indian Bureau of mines/Department of Mining &amp; Geology shall be submitted within 2 months of the approval to the Regional Office of the Ministry of Environment, Forest and Climate Change, Bhubaneswar for record and verification.</p>									
30)	<p><b>The land-use of the mine lease area at various stages of mining scheme</b></p>	<p>The land use of the ML area at various stages of mining scheme as well as at</p>									

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<p><b>as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF &amp; CC and its concerned Regional Office.</b></p>	<p>the end of life will be governed as per the approved mining plan. The excavation vis-à-vis back filling in the mine lease area and corresponding afforestation in the reclaimed area will be carried out in line with approved mine Plan.</p> <p>The compliance status will be submitted to the concerned Authorities within stipulated time frame.</p>
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**VI. Land reclamation**

<b>SL. No.</b>	<b>STANDARD CONDITIONS</b>	<b>STATUS AS ON DATE / ACTION TAKEN</b>
31)	<p><b>The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines /circulars issued by D.G.M.S w.r.t .safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.</b></p>	<p>The only OB/waste dumps is being properly terraced at the earmarked place by maintaining adequate slope &amp; height as per the approved Mining Plan and as per the guidelines /circulars issued by D.G.M.S w.r.t. safety in mining operations and geo textile matting applied on dump slopes for the stabilization purpose. The generated top soil during the mining operation is being stored at an ear marked area and necessary precautions are being taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.</p>
32)	<p><b>The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. Safety in mining operations shall be strictly adhered</b></p>	<p>The only OB/waste dumps is being properly terraced at the earmarked place by maintaining the adequate slope &amp; height as per the approved Mining Plan and as per the guidelines /circulars issued by D.G.M.S w.r.t .safety in mining operations and is being scientifically vegetated along the slope to stabilize the same.</p>

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	to maintain the stability of waste dumps.	
33)	<b>The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.</b>	Project Proponent will reclaim the waste dump sites scientifically as per the approved mining plan by the application of native grass seeds, seedlings and geotextiles etc. along with the provision of garland drain, retaining wall followed by settling pits. Presently the mines is following the progressive mine closure plan on yearly basis as per approved mining plan.
34)	<b>The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the micro climate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/compactors there by ensuring proper filling/leveling of dump mass. In critical areas, use of geo textiles/geo-membranes, clay liners/Bentonite etc. shall be undertaken for stabilization of the dump.</b>	Presently, one active OB/waste dump is being properly terraced by maintaining the adequate slope & height. 17000 m <sup>2</sup> Geo Textile mat has been laid down on OB dump Slopes for stabilization. Further, the dumps will be scientifically vegetated with application of native local species along the slope to stabilize.
35)	<b>The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&amp;CC.</b>	Presently mining is at initial stage and OB/waste dumping is under progress. As per the approved mining plan the dump height is being maintained and hence the slope stability study is not required at present.
36)	<b>Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/River/Pond etc.). The collected water should be</b>	Project proponent has planned to construct number of check dams in south pit area on natural depression area to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% has been kept for designing of sump structures over and above peak rainfall. However, in north pit active



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	utilized for watering the mine area, roads , green belt development, plantation etc. The drains/sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.	dump area, one settling tank has been constructed to prevent run off of water and flow of sediments.
37)	<b>Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period there by allowing proper settling of sediments/silt material. The sedimentation pits/sumps shall be constructed at the corners of the garland drains.</b>	Project proponent has planned the construction of number of Check dams at strategic areas after opening of the Pit on the seasonal nalla to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% has been kept for designing of sump structures over and above peak rainfall. However, one settling pond has been constructed followed by Garland drain near active dump area and another sedimentation pit/sump has been constructed as per mining plan.
38)	<b>The topsoil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. Safety in mining operations shall be strictly adhered to maintain the stability of dumps. The top soil shall be used for land reclamation and plantation purpose.</b>	Top soil has already been stacked near ML pillar no.02 maintaining the physical parameters of the top soil dumps like height, width and angle of slope as per the approved Mining Plan. The top soil will be subsequently used for land reclamation and green belt development purpose.  Adequate precautionary measures are being taken care to preserve the nutrient contents.

**VII. Transportation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
39)	<b>No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a</b>	We will abide by the said condition.

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	<p>'by pass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.</p>	
40)	<p>The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted watersprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be</p>	<p>Regular water sprinkling is being carried out by engaging 02 nos. of mobile water tankers (01 nos. 16 KL, 01 no. 08 KL) at haul road, loading and unloading point and transfer points &amp; around the crusher and screening plants and other strategic dust generating areas including the mines haul and mineral dispatch roads. Apart from that auto fixed water sprinkling arrangement of 1.20 KM length has been planned to be provided for mineral dispatch roads.</p>

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<p><b>provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.</b></p>	<p>Further, dry fogging along with hoods over conveyor and material transfer points is provided for crusher and screen plants. Photo enclosed as <b>Photo-11</b></p>
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**VIII. Green Belt**

<b>SL. No.</b>	<b>STANDARD CONDITIONS</b>	<b>STATUS AS ON DATE / ACTION TAKEN</b>
41)	<p><b>The Project Proponent shall develop green belt in 7.5 m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belts shall be developed within first 5 years starting from wind ward side of the active mining area. The development of green belt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.</b></p>	<p>The green belt has been developed along the safety zone, in this regard the project has planted 7284 nos. of new plantation within the ML Area boundary (safety zones) as well as 1801 No.s outside the ML area (Camp /surrounding &amp; premises) during the reporting period 2021-22 as per the guidelines of concerned agencies.            Details of Plantation enclosed as <b>Table-1</b></p>
42)	<p><b>The Project Proponent shall carry out plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the road sides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural</b></p>	<p>The mine operation is in initial stage. Project proponent will carry out plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the road sides, in community areas etc. by planting the selected native species useful to the local people adhering the CPCB guidelines in this respect and in consultation with concerned govt. agencies as stated in the approved mining plan.</p>

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	<p>development department/  Tribal Welfare Department/  Gram Panchayat such that  only those species be  selected which are of use to  the local people. The CPCB  guidelines in this respect shall  also be adhered. The density  of the trees should be around  2500 saplings per Hectare.  Adequate budgetary  provisions shall be made for  protection and care of trees.</p>	
43)	<p>The Project Proponent shall  make necessary alternative  arrangements for livestock  feed by developing grazing  land with a view to  compensate those areas  which are coming within the  mine lease. The development  of such grazing land shall be  done in consultation with the  State Government. In this  regard, Project Proponent  should essentially implement  the directions of the Hon'ble  Supreme Court with regard to  acquisition of grazing land.  The sparse trees on such  grazing ground, which  provide mid-day shelter from  the scorching sun, should be  scrupulously guarded/  protected against felling and  plantation of such trees  should be promoted.</p>	<p>We will abide by the said condition.</p>
44)	<p>The Project Proponent shall  under take all precautionary  measures for conservation  and protection of  endangered flora and fauna  and Schedule-I species  during mining operation. A  Wildlife Conservation Plan  shall be prepared for the  same clearly delineating  action to be taken for  conservation of flora and</p>	<p>Site specific Wildlife conservation Plan got  approved by PCCF Wild life and Chief Wildlife  warden ,Bhubaneswar. As per the plan no  Schedule – I species found in the buffer zone  area. The Site specific wildlife conservation  plan enclosed as <b>Annexure- 4</b></p>

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	fauna. The Plan shall be approved by Chief Wildlife Warden of the State Govt.	
45)	And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.	Implementation status (annual) on wildlife conservation Plan is being submitted to the Regional office of the Ministry.

**IX. public hearing and human health issues**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
46)	<b>The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carry out Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-up shall be under taken once in six months and necessary remedial/preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.</b>	Initial Medical Examination & Periodical Medical Examination of the workers engaged in the project is being undertaken under the authorised doctors periodically for employees who are engaged in the process of mining & are likely exposed to dust to observe any contractions due to exposure to dust. This is being carried out in compliance to Mines Act 1952 & rules 1956 and amendments there to. During the period of October -21 to March-22 total of 98 no.s of employee have undergone for IME examinations.
47)	<b>The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification work place hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the Harte</b>	The Project Proponent has taken measures for health Risk Assessment(HRA) for identification of workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and well being of workers and nearby community. The company is also maintaining the accurate and systematic records of the HRA and all the tests being carried out.

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	<p>HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoeain children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, notto defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazardof tobacco and alcohol use. The Proponent shall carry out base line HRA for all the category of workers and there after every five years.</p>	
48)	<p>The Proponent shall carry out Occupational health surveillanc which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dusta X-Ray chest; For Noise Audio metric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except rout inetestsall tests would be carried out in a Lab accredited by NASH. Records of Health Surveillanc must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica,Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the</p>	<p>The Project Proponent is committed to work towards 'Zero Harm' from their mining activities and will carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The company will also maintain accurate and systematic records of the HRA and all the tests being carried out.</p>

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	<p>life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one).X-Ray must meet ILO criteria (17x14 inches and of good quality).</p>	
49)	<p>The Proponent shall maintained a record of performance indicators for workers which includes(a)there should not be as significant decline in their Body Mass Index and it should stay between 18.5-24.9, (b)the Final Chest X-Ray compared with the base line X-Ray should not show any capacities,(c) At the end of their leaving job there should be no Diminutionin their Lung Functions Forced Expiratory Volume in one second(FEV1),Forced Vital Capacity (FVC),and theratio)unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last needto be presented), (e) they should not have developed any Persistent Back Pain,Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f)they should not have suffered loss of any body part.The record of the sames hould be submitted to the Regional Office, MoEFCC annually along with details of therelief and compensation paid to workers having above indications.</p>	<p>We are abiding by the said condition.</p>
50)	<p>The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety</p>	<p>Workers engaged in different mining operations are provided with protective respiratory devices i.e. Nose Mask, Ear Plugs, Ear Muffs etc.. Regular sprinkling is being carried out in and around work place areas. Apart from that adequate training on safety</p>

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	<b>and health aspects.</b>	and Health aspects is being imparted on daily basis among all the employees.
51)	<b>Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical healthcare, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste waters should be treated with STP in order to avoid contamination of underground water.</b>	Project Proponent has constructed temporary worker camps outside (rented land) the mine lease area with necessary basic infrastructure/ facilities like toilets, STP, safe drinking water, medical healthcare, etc. The housing is made purely of temporary structures which can be removed after the completion of the project. The domestic waste waters is being treated with STP of 80 KL capacity in order to avoid contamination of underground water. <b>Photo#7 .</b>
52)	<b>The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration</b>	The project proponent is committed towards the implementation of activities proposed in action plan prepared for addressing the issues raised during the Public Hearing and shall be completed as per the budgetary provisions mentioned in the action plan and within the stipulated time frame. The status report on implementation of action plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration

**X. Corporate Environment Responsibility (CER)**

<b>SL. No.</b>	<b>STANDARD CONDITIONS</b>	<b>STATUS AS ON DATE / ACTION TAKEN</b>
53)	<b>The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-A. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the</b>	The activities proposed for CER is being implemented in a time bound manner and annual report of implementation of the same will be submitted to Regional Office MoEF&CC.



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	same along with documentary proof viz. Photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF &CC annually along with audited statement.	
54)	Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEFCC and its concerned Regional Office.	The Project proponent has not diverted the fund earmarked for environmental protection. The fund earmarked for environmental protection measures are being utilized for the said purpose only. The Year wise expenditure of such funds are being reported to the MoEF CC and its concerned Regional Office on regular basis.. Details of expenses enclosed as <b>Annexure #10</b>

**XI. Miscellaneous**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
55)	The Project Proponent shall prepare digital map(land use & land cover)of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.	Digital processing of the entire lease area using remote sensing technique will be done regularly in 5 years for monitoring on the land use pattern and the same will carried out by ORSAC or any agency of national repute for which expenses will be borne by the project proponent.
56)	The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	We will abide by the said condition.
57)	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control	We are submitting six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.

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	<b>Board.</b>	
58)	<b>A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO ,MoEFCC.</b>	We have established an Environmental Cell headed by the Head of Mining & Business Development to look after the implementation of the various pollution control measures and other Environment Management System requirements who is reporting to the Head of the Organization.
59)	<b>The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s)by furnishing the requisite data information/ monitoring reports.</b>	The project proponent is ready to extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data information/ monitoring reports while monitoring the compliance of the stipulated conditions by the concerned regional Officials.
60)	<b>In pursuant to Ministry's O.MNo22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020inW.P.(Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, under take re-grassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.</b>	The project proponent is abiding by the condition.

**D. Standard EC conditions for Mineral Beneficiation Plants:**

**I. Statutory compliance:**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
1)	<b>The project proponent shall obtain forest</b>	The project has obtained Forest

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	<b>clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.</b>	clearance The project has obtained Stage –II of Forest clearance vide letter No.8-55/2018FC dt. 15.12.2020 for the forest land involved in the project towards the accessing the forest land for applicable activities as approved.
2)	<b>The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.</b>	Not applicable to the project.
3)	<b>The project proponent shall prepare Site-Specific Conservation Plan &amp; Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan /Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area).</b>	Site specific wildlife conservation plan got approved by PCCF Wildlife and chief wildlife Warden, Bhubaneswar with an estimated cost of Rs1257Lakh of which Rs. 348.770 lakh has been earmarked for implementation of plan within the mine lease area and Rs. 908.240 Lakhs has been earmarked for implementation of plan within the buffer zone (ZOI).No such specie has been reported in the core zone as per Wild life Management study conducted over the area . Rs.100.00 lakhs will be specifically spent towards the Conservation of Schedule-I species.
4)	<b>The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention &amp;Control of Pollution) Act, 1981 and the Water (Prevention &amp;Control of Pollution)Act, 1974 from the concerned State pollution Control Board/Committee.</b>	Project Proponent (PP) has obtained Consent to establish vide No-459/IND-II-NOC-6124, dated 11.01.2018 for extraction of 7.16 Million TPA iron ore (ROM) production, installation of 1x1350 TPH stationary crushing & Screening plant and 2x500 TPH mobile crushing & Screening Plants and Iron ore beneficiation plant of 6.7 MTPA capacity & consent to operate for extraction of 7.16 Million TPA iron ore (ROM) production from the OSPCB, Bhubaneswar, Odisha which also includes installation of 1x1350 TPH stationary crushing & Screening plant and 2x500 TPH mobile crushing & Screening Plants, vide Consent Order No. 2955 and vide Letter No. 6004/IND-I-CON-

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		6154 dated 12.04.2021. However at the time of installation of Iron Ore BF plant, consent to operate will be obtained for the same.
5)	<b>The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water from the competent authority concerned in case of drawl of surface water required for the project.</b>	The Project Proponent has obtained NOC for withdrawl of 95 Cu.m/day quantity of ground water from CGWA for the project vide letter No. CGWA/NOC/MIN/ORIG/2022/1479 6 dated 14.03.2022 as well as the Environment clearance for the project vide letter No. F. No. J-11015/192/2016-IA.II(M) dated 28th May 2020.
6)	<b>The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.</b>	The project is in initial stage. The workshop and its allied infrastructures are also in ground state. The project has appllied for authorization under the Hazardous and other Waste Management Rules, 2016 shall be made to obtain the same.

**II. Air quality monitoring and preservation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
7)	<b>The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. Monitor fugitive emissions in the plant premises.</b>	Out of three Continuous Ambient Air Quality monitoring Stations(CAAQN/IS), one no. of CAAQMS with data transfer facility to SPCB server has been established in core zone. The locations of these stations are decided in consultation with the Regional Officer State Pollution Control Board, based on metrological data, topographical features and environmentally and ecologically sensitive targets. Till installation of all CAQQMS, manual ambient air quality monitoring is being carried out.
8)	<b>The project proponent shall monitor fugitive emissions in the plant premises at least once in</b>	The Project proponent has engaged NABL accredited and MoEF certified agency named M/s ITC lab pvt. Ltd. Through M/s

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	<b>every quarter through labs recognised under Environment (Protection)Act, 1986.</b>	Qualitek labs Pvt. Ltd, Bhubaneswar,Odisha for the monitor fugitive emissions in the plant premises on regular basis as stated .
9)	<b>The project proponent shall install system to carry out Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g.PM10 and PM, sinreference to PM emission, and SO, and NOx inreference to SO, and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at anangle of 120'each), covering up wind and down wind directions.</b>	Out of three Continuous Ambient Air Quality monitoring Stations(CAAQN/IS), two nos. of CAAQMS with RT-DAS data transfer facility to SPCB server has been established in core zone. The locations of these stations are decided in consultation with the Regional Officer State Pollution Control Board, based on metrological data, topographical features and environmentally and ecologically sensitive targets. Till installation of all CAQQMS, manual ambient air quality monitoring is being carried out.
10)	<b>The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF &amp;CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.</b>	Not applicable for the project.
11)	<b>Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.</b>	Regular water sprinkling is being carried out engaging water sprinkling tankers for the fugitive dust suppression on haul roads. Appropriate air pollution control system (APC) are provided in the form of dry fog system for crusher & screen plants. Permanent fixed sprinkler for the permanent hauling road and truck tyre washing system for the dispatch vehicles, etc. as applicable to all the dust generating points to comply prescribed stack emission and fugitive emission standards.
12)	<b>The project proponent use leak proof trucks/dumpers carrying ore and other raw materials and cover them with tarpaulin.</b>	As per the standard practice, the vehicles carrying ore are fully covered with tarpaulins to prevent the spillage of mineral on transportation road.
13)	<b>Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.</b>	We will abide by the said condition, if applicable.
14)	<b>Design the ventilation system for adequate air changes as per</b>	Not applicable as it is an open cast mining activities.

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	ACGIH document for all tunnels, motor houses, Oil Cellars.	
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**III. Water quality monitoring and preservation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
15)	<b>The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.</b>	There is no scope of huge quantity of effluents generation from the mines for which the installation of the same shall be required. Instead, project proponent has constructed ETP(oil & grease trap pit) for the treatment of effluents generated from workshop,etc. The water quality is being analysed through NABL accredited laboratories to conform the prescribed standard before discharge to outside .
16)	<b>The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon)at sufficient numbers of piezometers/ sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.</b>	The ground water quality is being monitored by the project proponent through NABL accredited Laboratory/agency M/s ITC Pvt. Ltd. through M/s Qualitek laboratory Pvt. Ltd.,Bhubaneswar recognised under Environment (Protection) Act, 1986.
17)	<b>The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&amp;CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.</b>	Not applicable for the project..
18)	<b>The project proponent shall provide the slime disposal facility with impervious lining and collection wells for seepage. The water collected from the slime pond shall be treated and recycled.</b>	The project proponent will construct the slime disposal ponds with impervious lining and collection wells for seepage with the construction of beneficiation plant. The water collected from the slime pond shall be treated and recycled as per the approved EIA/EMP plan.

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19)	<b>Adhere to 'Zero Liquid Discharge'</b>	The project will adopt Zero waste Mining Concept as per the approved mining plan.
20)	<b>Sewage Treatment Plant shall be provided for treatment of domestic waste water to meet the prescribed standards.</b>	Sewage Treatment Plant of 80 KL capacity has already been provided for treatment of domestic waste water at the our camp area to meet the prescribed standards. The water quality is being monitored by the project proponent through the recognised under Environment (Protection) Act, 1986 and NABL accredited Laboratory/agency M/s ITC Pvt. Ltd. through M/s Qualitek laboratory Pvt. Ltd., Bhubaneswar.
21)	<b>Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.</b>	Garland drains,retaining wall are being constructed followed by the settling pits (collection pits) provided at the bottom of the OB dump & for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.
22)	<b>The project proponent shall practice rain water harvesting to maximum possible extent.</b>	Project proponent is under process of implementation of roof top rain water harvesting measures at the office and camp area as per the approved mining plan.
23)	<b>The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.</b>	As its an open cast iron ore mining operation, still the efforts are being made to minimise water consumption in all walks of the operation.

**IV. Noise monitoring and preservation**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
24)	<b>Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report</b>	Noise level is being monitored by Noise Level Meter as per the prescribed guidelines.The monitoring result is being submitted to Ministry as a part of six-monthly compliance report on regular basis.
25)	<b>The ambient noise levels should conform to the standards prescribed under E (P) A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A)during night time.</b>	Noise level is being monitored by Noise Level Meter as per the prescribed guidelines.The monitoring report reveals that the result is well within norms.

**V. Energy Conservation measures**

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SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
25)	<b>Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly.</b>	5% of the total power consumption will be used through the solar power generation on roof tops of office containers, which is under progress. The same will be extended for solar light system for office area and mines haul road street lights and will be maintained regularly as prescribed.
26)	<b>Provide LED lights in their offices and residential areas.</b>	LED lights are being utilised in project office and camp area for illumination.

**VI. Waste management**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
27)	<b>The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous &amp; Other waste (Management &amp; Transboundary Movement) Rules, 2016.</b>	There will be minimum generation of Hazardous wastes except in field machinery maintenance workshops, which will be separately handled with all precautionary measures as per guideline provided under "Hazardous waste Management Rule 2016".
28)	<b>Kitchen waste shall be composted or converted to bio gas for further use. (to be decided on case to case basis depending on type and size of plant)</b>	Kitchen waste from camp canteen are being composted & converted to bio gas for further use as prescribed.

**VII. Green belt and EMP**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
29)	<b>Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The green belt shall inter alia cover the entire periphery of the plant.</b>	Green belt is being developed as per the approved mining plan with plantation of native tree species in accordance with CPCB guidelines.
30)	<b>The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.</b>	During the project operations detailed study is being planned to conduct for proper and Standardized methodology to evaluate the emissions of GHG to estimate the extent of damage caused by the project operation and proper actions to mitigate the damage will be ensured.

**VIII. Public hearing and Human health issues**



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SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
31)	<b>Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.</b>	A comprehensive elaborate HIRA (Hazard Identification and Risk Assessment) structure is being created by the company. A detail Hazard Identification and Risk Assessment study will be carried out internally based upon the guideline of ISO 45001 standard.
32)	<b>The project proponent shall carry out heat stress analysis for the work men who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.</b>	Not Applicable.
33)	<b>Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.</b>	Project Proponent has constructed purely temporary camps outside (rented land) ML area with necessary basic infrastructure/ facilities like toilets, STP, safe drinking water, healthcare facilities etc.
34)	<b>Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.</b>	Project proponent is conducting Periodic medical examination, occupational health check ups and maintaining records as per Factories Act & Odisha Factories Rule.

**IX. Corporate Environment Responsibility**

SL. No.	STANDARD CONDITIONS	STATUS AS ON DATE / ACTION TAKEN
35)	<b>The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 15 May 2018, as applicable, regarding Corporate Environment Responsibility.</b>	The project proponent is abiding by the condition and will comply accordingly.
36)	<b>The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus</b>	To demonstrate its commitment to Environment protection, company is having Environmental Policy. This policy gives more importance for Continual Improvement in Environmental Performance of the Mining activity.

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	<p>any infringements /deviation/ violation of the environmental/ forest/ wildlifenums/ conditions. The company shall have defined system of reporting infringements/ deviation/violation of the environmental/forest/wild life norms/conditions and for shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF &amp; CC as a part of six-monthly report.</p>	
37)	<p><b>A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.</b></p>	<p>We have established an Environmental Cell headed by the Head of Mining &amp; Business Development to look after the implementation of the various pollution control measures and other Environment Management System requirements who is reporting to the Head of the Organization.</p>
38)	<p><b>Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/ Regional Office along with the Six Monthly Compliance Report.</b></p>	<p>Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company has already been in order. The fund earmarked for environmental protection measures in a separate account is being utilized for the said purpose only</p>
39)	<p><b>Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.</b></p>	<p>Project proponent is submitting the annual environmental audit report in Form V as prescribed and the same will be done by 3<sup>rd</sup> party once in 3 year.</p>
40)	<p><b>All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP)for the Mineral Beneficiation plants shall be implemented.</b></p>	<p>Noted. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Mineral Beneficiation plants will be implemented.</p>

**X. Miscellaneous**

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41)	<b>The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local news papers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.</b>	Project proponent has advertised in the two local newspapers, i.e. Prameya Daily (vernacular language) and The Sunday – English News paper within stipulated time period. A copy of the same got submitted to the Regional Office of this Ministry located at Bhubaneswar.
42)	<b>The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.</b>	It has been complied.
43)	<b>The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their web site and update the same on half-yearly basis.</b>	Mining operation is in initial stage and We are submitting six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards status shall be uploaded on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal half yearly basis.
44)	<b>The project proponent shall monitor the criteria pollutants level namely; PM10, SO, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the web site of the company.</b>	The project proponent will display the information at a convenient location for disclosure to the public and put on the web site of the company.
45)	<b>The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.</b>	Mining operation is in initial stage and we are submitting six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board. Subsequently the status shall be uploaded on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
46)	<b>The project proponent shall submit the environmental statement for</b>	The environment statement for the reporting year 2021-22 is being submitted to SPCB,

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	<b>each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.</b>	Odisha and copy of the same is also updated in the company's website followed by the submission of the same to the Office of the Ministry of Environment and Forests & Climate Change, Bhubaneswar.
47)	<b>The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.</b>	The project proponent will inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
48)	<b>The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.</b>	Noted. The Project proponent is adhering by the condition stipulated by SPCB and the State government.
49)	<b>The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.</b>	The Project proponent is committed in implementing the commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee and will abide by the condition.
50)	<b>No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&amp;CC).</b>	Noted. The Project proponent will abide by the condition.
51)	<b>Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.</b>	Noted. The Project proponent will abide by the condition.
52)	<b>The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.</b>	Noted. The Project proponent will abide by the condition.
53)	<b>The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.</b>	Noted. The Project proponent will abide by the condition.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

54)	<b>The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.</b>	The project proponent shall extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data information/monitoring reports while monitoring the compliance of the stipulated conditions by the concerned regional Officials.
55)	<b>The above conditions shall be forced, inter-alia under the provisions of the Water (Prevention &amp; Control of Pollution) Act, 1974, the Air (Prevention &amp; Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.</b>	Noted. The Project proponent will abide by the condition.
56)	<b>Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.</b>	Noted. The Project proponent will abide by the condition.

For & On behalf of ArcelorMittal Nippon Steel India Limited



Authorized Signatory  
Ramakrishna Chinnasetty  
Head of Mining & Business Development

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

**PHOTOGRAPHS**



Photo-1 Showing the Garland Drain at the toe of OB Dump



**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo-2 - Plantation and Transplantation work at safety zone**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo-3 Generated top soil are kept at ear marked location**



**Photo#4 Drilling Machines Equipped with wet drilling & dust extractor system**



**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo-5 Mobile Water Tankers engaged on mines approach road & Transporting Road**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo# 6 Establishment of CAAQMS & AAQ Stations in Mine Lease Area**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo# 7 80 KLD STP Plant at Base Camp**



**Photo# 8 Ore carrying vehicles covered with Tarpaulin before exit from mine gate**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo # 9 Geo textile mat laying on waste dump & fines dump Slop**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo # 9(A) Retaining Wall along with garland Drain around the OB Dump**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo-10 Settling pond with Check Dams in defferent locations**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**Photo#11 Screen & Crusher plants provided with Dry fog System**

INDIA NON JUDICIAL  
Government of Gujarat



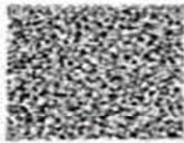
सत्यमेव जयते

Rs.  
100

Annexure-1

**Certificate of Stamp Duty**

Certificate No.	:	IN-GJ96013511570121S
Certificate Issued Date	:	10-Jun-2020 07:53 PM
Account Reference	:	IMPACC (SV)/ g 13184204/ NANPURA1/ GJ-SU
Unique Doc. Reference	:	SUBIN-GJGJ131842043132627B731600S
Purchased by	:	RIDDHISH DOSHI
Description of Document	:	Article 4 Affidavit
Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	ARCELORMITTAL NIPPON STEEL INDIA LIMITED
Second Party	:	Not Applicable
Stamp Duty Paid By	:	ARCELORMITTAL NIPPON STEEL INDIA LIMITED
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)



ILJB 0000241854

**Statutory Alert**

1. The authenticity of this Stamp Certificate should be verified at [www.tribesurattax.com](http://www.tribesurattax.com) available on the website of the Gujarat State Emblem.
2. The price of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Complaint Authority.

*Riddhish Doshi*

PAGE 1 of 2



## STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS

### Affidavit

I, Pankaj S Chourasia, aged about 44 years, son of Late Shri S. N. Chourasia, resident of Flat 1, Plot 131, Sector 12, Vashi, Navi Mumbai 400 703, do hereby state as follows:

1. I Pankaj S Chourasia as Company Secretary of ArcelorMittal Nippon Steel India Limited (formerly Essar Steel India Limited) submitting this affidavit with reference to the Environmental clearance granted vide F. No. J-11015/192/2016-IA.II (M) dated 28<sup>th</sup> May 2020 for Ghoraburhani – Sagasahi Iron ore Block of M/s ArcelorMittal Nippon Steel India Limited (Formerly Essar Steel India Limited) with an approved quantity of Iron ore 7,162,538 TPA iron ore ( ROM) , 18750 TPA Topsoil and 2,868,896 TPA OB/SB/IB (Total Excavation : 1,00,50,184 TPA) along with Crushing & Screening Plant and Beneficiation Plant with capacity of 6.7 Million TPA ( 1250 TPH) capacity in the mine lease area of 139.165 ha , located at village – Ghoraburhani , Sagasahi and Kalmang , Tehsil Koira, District Sundargarh, Odisha.
2. That I undertake, M/s ArcelorMittal Nippon Steel India Limited (Formerly Essar Steel India Limited) shall comply with all the conditions prescribed in the Environmental Clearance vide F. No. J-11015/192/2016-IA.II (M) dated 28<sup>th</sup> May 2020 issued by Ministry of Environment, Forest & Climate Change, New Delhi.
3. That I swear this affidavit to produce before the Authority of Ministry of Environment, Forest and Climate Change, New Delhi.



Signature of Deponent  
Name: Pankaj S Chourasia  
Company Secretary  
ArcelorMittal Nippon Steel India Limited

### VERIFICATION

Verified that the contents of this affidavit are true to my knowledge and no part of the affidavit is false and nothing has been concealed or missed therein.

Verified at ..... on this 11<sup>th</sup> day of June, 2020



Signature of Deponent

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

File No.8-55/2018FC

ANNEXURE # 2

Government of India  
Ministry of Environment, Forest and Climate Change  
(FC Division)

\*\*\*

Indira Paryavaran Bhawan,  
Jor bagh Aliganj Road,  
New Delhi – 110003.

Dated: 15th December, 2020

To,  
Addl. Chief Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

**Subject :Proposal for diversion of 120.838 ha of forest land for iron ore mining under Section 2 (ii) and for according permission under Section 2 (iii) of the Forest (Conservation) Act, 1980 for entire forest land 126.401 ha including safety zone area of 5.563 ha in favour of M/s Essar Steel India Ltd within their allotted Ghoraburhani-Sagasahi Iron Ore Block of 139.165 ha located in village Sagasahi, Kalmang, Ghoraburhani and Mendhamaruni PRF-I in Koira Tehsil and Koira Range under Bonai Forest Division of Sundargarh District, Odisha.**

Sir,

I am directed to refer to the State Government's letter No. 10F(Cons)-26/2018-17489/F&E dated 08.08.2018 on above mentioned subject seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal was examined by the Forest Advisory Committee (FAC) constituted by the Central Government under Section-3 of the said Act. After careful consideration of the proposal and recommendation by the FAC, and approval of competent authority in the Ministry, *In-principle/Stage-I* approval was accorded for diversion of 120.838 ha of forest land for iron ore mining under Section 2 (ii) and for according permission under Section 2 (iii) of the Forest (Conservation) Act, 1980 for entire forest land 126.401 ha including safety zone area of 5.563 ha in favour of M/s Essar Steel India Ltd within their allotted Ghoraburhani-Sagasahi Iron Ore Block of 139.165 ha located in village Sagasahi, Kalmang, Ghoraburhani and Mendhamaruni PRF-I in Koira Tehsil and Koira Range under Bonai Forest Division of Sundargarh District, Odisha vide this Ministry's letter of even number dated 06.03.2019 subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the approval and has requested the Central Government to grant final approval.

2. In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide their letter no. 18092 9F (MG)-1/2018 dated 15.10.2020, *approval* of the Central Government is hereby accorded under Section-2 of the Forest (Conservation) Act, 1980 for subject diversion for opencast mining of limestone in favour of M/s Essar Steel India Ltd, subject to following conditions:

**A: Conditions which need to be complied prior to handing over of forest land to user agency by the State Govt.:**

- i. The State Govt. shall ensure that the admissible identified non-forest land for raising

- compensatory afforestation shall be notified as RF/ PF;
- ii. The State Govt. shall ensure the complete compliance on FRA, 2006; It should also be ensured that the FRA certificate issued by District collector is complete with letter number, date, name, signature and official seal, as required in the certificate.
  - iii. The State Govt. shall ensure that the boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates;
  - iv. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986;
  - v. State government may ensure that the KML files of diverted forest land and corresponding CA areas as approved by Government of India with requisite details are uploaded on a green watch portal.

**B: Conditions which need to be complied after handing over of forest land to the user agency by the State Govt.:**

- i. Legal status of the diverted forest land shall remain unchanged;
- ii. The State Govt. shall ensure that the State Forest Department will raise the Compensatory Afforestation in identified equal non-forest land in village Podadihi under Bansapal Tahasil of Keonjhar Forest Division in Keonjhar District in extent to the forest land being diverted within three years of Stage –II Clearance and maintained thereafter as per approved plan and At least 1000 plants per hectare shall be planted as per approved plan/scheme. The approved Soil and Moisture Conservation (SMC) activities on the CA land shall be carried out by the State Forest Department;
- iii. The State Govt. ensure that 5.563 ha of proposed safety zone shall be maintained as tree cover and should be enriched with indigenous species at the cost of the user agency under supervision of State Forest Department.
- iv. The State Govt. ensure that following activities shall be implemented by the user agency at the project cost under supervision of State Forest Department: a) Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;  
(b) Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;  
(c) Construction of check dam, retention /toe walls along the contour to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;  
(d) Stabilize the overburden dumps by appropriate grading / benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28°, and  
(e) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
- v. The user agency shall pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India ;
- vi. The State Govt. ensure that the user agency will implement the approved plan /scheme for fencing, protection and regeneration of the safety zone area at their cost under supervision of State Forest Department;

the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.

Yours faithfully,

**Sd/-**

**(Sandeep Sharma)**

Asstt. Inspector General of Forests

**Copy to:**

1. Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. Nodal Officer(FCA), Government of Odisha, Bhubaneswar.
3. Dy. Director General (Central), Integrated Regional Office, Bhubaneswar
4. Monitoring Cell of FC Divisions, MoEF&CC, New Delhi.
5. Guard file.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

**Environmental Monitoring Reports**  
**Refer Annexure 3 (A)**

**STP Discharge Quality Report**  
**Refer Annexure 3 (B)**

**SURFACE WATER QUALITY REPORT**  
**Refer Annexure 3 (C)**

**GROUND WATER QUALITY REPORT**  
**Refer Annexure 3 (D)**

**Ambient and Work Zone Monitoring Report**  
**Annexure -3 (E)**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

**Annexure-4 Site Specific Wild Life Conservation Plan**



**OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) &  
CHIEF WILDLIFE WARDEN, ODISHA**

Department of Forest and Environment, Government of Odisha

No. 677 / 1WL-FC-Mri-SSP-196/2018  
Dated, Bhubaneswar the 13 August, 2019

To

M/s Essar Steel India Limited,  
At/PO - Dabuna, Via - Joda,  
Dist. - Keorjhar, Odisha,  
PIN - 758034

**Sub: Approval of Site Specific Wildlife Conservation Plan for Ghorabhurani-Segasahi Iron Ore Block of M/s Essar Steel India Ltd. over an area of 139.165 ha in Koira Tahsil of Sundargarh district**

Sir,

It is to inform that you have to implement a Site Specific Wildlife Conservation Plan for Ghorabhurani-Segasahi Iron Ore Block in Koira Tahsil of Sundargarh district in compliance to the Standard ToR No.18 issued by MoEF&CC, Government of India in their letter No.J-11015/192/2016-IA.II(M) dt 16.01.2017 for preparation of EIA/EMP report.

2. The Site Specific Wildlife Conservation Plan in respect of the above project has been approved by the undersigned with financial forecast of **₹1367.261 lakh** (Rupees thirteen crore sixty-seven lakh twenty-six thousand one hundred) only for the following activities.

a.	For activities to be implemented by the user agency in project area	₹556.130 lakh
b.	For activities to be implemented in project impact area in Bonai Division	₹811.131 lakh
<b>Grand Total:</b>		<b>₹1367.261 lakh</b>

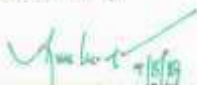
3. Various activities in the forest area to be diverted will be executed by the Project proponent under the guidance of the concerned DFO. A sum of ₹811.131 lakh only may be transferred through online portal of CAMPA account of the State for the purpose for implementation of various activities within the project impact area by the Forest Department as envisaged in the plan.

4. You may please note the following conditions for future compliance.

- This Plan may be revisited after 5 years and the User Agency will give undertaking to contribute towards the revised cost of the conservation plan till the project period, if any.
- If there would be need for Site Specific Wildlife Conservation Plan after expiry of the present plan period, the user agency will have to submit another such plan at least one year before the expiry of the present Conservation Plan and deposit the outlay amount upon its approval. In case of delay, it will be dealt as per law for violations of Forest Conservation Act, 1980 and Environment (Protection) Act, 1986.
- The project proponent has to give an undertaking to bear the differential cost in case of enhancement of wage rate at the time of implementation of this plan.

Yours faithfully

Encl: 2 copies of approved  
site specific WL Conservation Plan

  
**Principal Chief Conservator of Forests (WL)  
& Chief Wildlife Warden, Odisha**

P.T.O.

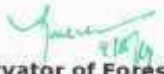
**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

-2-

Memo No. 6758 / date 13/08/19

Copy forwarded for information and necessary action to -

1. Special Secretary to Govt. of Odisha, F&E Department, Bhubaneswar with reference to that Department memo No.17491/F&E dt 08.08.2018
2. Principal Chief Conservator of Forests, Odisha with reference to this office memo No.6131 dt 23.07.2019
3. Regional Chief Conservator of Forests, Rourkela Circle with reference to his memo No.1809 dt 28.07.2019
4. Divisional Forest Officer, Bonal Division-alongwith copy of the approved site specific wildlife conservation plan with reference to this office memo No.6129 dt 23.07.2019

  
**Principal Chief Conservator of Forests (WL)**  
**& Chief Wildlife Warden, Odisha**

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



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CONSENT ORDER  
 GHORABHURANI-SAGASAHII IRON ORE BLOCK OF M/S. ARCELOR MITTAL NIPPON STEEL INDIA LTD.



**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@ospboard.org, Website: www.ospboard.org

BY REGD. POST WITH AD

**CONSENT ORDER**

No. 5144 / IND-I-CON-6154 Dt. 30.03.2022

**CONSENT ORDER NO. 2955**

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. 3150473 Dated 19-10-2020 and online reply dated 28.03.2022.**

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: **GHORABHURANI-SAGASAHII IRON ORE BLOCK OF M/S. ARCELOR MITTAL NIPPON STEEL INDIA LTD.**

Name of the Occupier & Designation: **SRI RAMAKRISHNA CHINNAMSETTY,**  
**AUTHORISED SIGNATORY**

Address: **AT: GHORABHURANI, PO: KOIRA, DIST: SUNDARGARH**

This consent order is valid for the period from **01.04.2022 to 31.03.2024.**

**Details of Products Manufactured:**

Sl. No	Product	Quantity
01.	<i>Iron Ore[ROM]</i>	<i>7.16 MTPA</i>

**Details of Mineral Handling Plants /Units:**

01	<i>Stationary crushing and screening plant of capacity 1X1350 TPH</i>
02.	<i>Mobile crushing and screening plant of capacity 2X500 TPH</i>

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.



**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



CONSENT ORDER  
 GHORABHURANI-SAGASAHAI IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.

Page 2 of 13

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

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge	Pre-scribed 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 except beneficiation plant	On land / inland surface water body	--	5.5-9.0	100 (Rainy day)	--	--	10
					50 (Non-Rainy day)			

**B. Fugitive Emission Standards**

Area	Monitoring Location
Particulate Matter	1200 µg/m <sup>3</sup>
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 :	
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

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



CONSENT ORDER  
GHORABHURANI-SAGASAHU IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.

Page 3 of 13

**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 alteration or deviation made in actual practice from the particulars furnished in the application will also be the ground table for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1986 and to make such variations is deemed fit for the purpose of the Acts.
2. The industry 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 / and 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 and at all subsequent times without any negligence on his part. In case of non-compliance of any order/instructions 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/Act.
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 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. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:
  - a) Industrial cooling, spraying in mine pits or boiler feed,
  - b) Domestic purpose
  - c) Process
13. 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.
14. 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.
15. 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.
16. 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.
17. 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 with silt and bottom made impervious.
18. 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.
19. 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.
20. 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 industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**CONSENT ORDER**

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**GHORABHURANI-SAGASAHU IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.**

22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
23. 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 Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. 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.
26. No control equipments or chimney shall be altered or replaced or as the case may be erection or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to ion of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant 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.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurrence.
33. The industry 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 industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. 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 industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as not to cause fugitive emission, dust problems through leaching etc., of any kind.
35. 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.
36. 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.
37. 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.
38. The applicant, his/her/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40. 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.
41. 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.
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.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/stipulate additional conditions as deemed appropriate.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



**CONSENT ORDER**  
**GHORABHURANI-SAGASAHU IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.**

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**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 10<sup>th</sup> 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, Sulphur 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 report to 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, mistral, 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, Orissa, Bhubaneswar regularly.
  - a. Report of analysis of stack monitoring, ambient air quality monitoring (meteorological data as received every month).
  - b. Progress on planting of trees quarterly.
5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording device 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 10<sup>th</sup> 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 3 days of such notification.
 

**Causes of non-compliance**

    - i) A description of the non-compliance discharge including its impact on the receiving water.
    - ii) 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.
    - iii) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
    - iv) 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 approved 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 dosers and proper equipment for regulation of correct dosage determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or mixing of acids or alkalis arbitrarily and mixing poles for stirring etc. should not be resorted to.
10. In the disposal of treated effluent on land for irrigation, the industry shall take in view of the need for:
  - Rotation of crops
  - Change of point of application of effluent on land
  - A portion of land kept fallow.
11. The adoption of these would avoid soil becoming sink or silt, 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 locals 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.

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**E. SPECIAL CONDITIONS:**

1. This consent order is subject to permission from Steel and Mines Department, Government of Odisha for commencement of mining operation.
2. Mining operation is subject to availability of all other statutory clearances.
3. Drills shall either be operated with dust extractors or equipped with water injection system to minimize dust generation in the work environment.
4. Controlled blasting shall be practiced to minimize generation of dust and fly rocks.
5. 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.
6. 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.
7. Fixed auto sprinklers shall be provided on both sides of major haul road and approach road of the mine.
8. Mechanized wheel washing facility for the ore transport vehicles shall be provided at the exit points of the mine. The wheel washing facility shall be integrated with complete recirculation system.
9. The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (both bottom & top).
10. 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.
11. 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.

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**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



CONSENT ORDER  
GHORABHURANI SAGASAHU IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.

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12. 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.
13. The ambient air quality shall remain within prescribed national ambient air quality standards.
14. Three Continuous Ambient Air Quality Monitoring Stations(CAAQMS), with data transfer facility to SPCB server shall be established in core and buffer zone within six months of issue of this order. 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. Till installation of all CAAQMS, manual ambient air quality monitoring shall be carried out at 04 places, as stipulated sl. No. 15 and 16.
15. 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.
16. The top soil generated shall be stored at earmarked site (s) only and stabilized with plantation or shall be used for land reclamation and plantation.
17. 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.
18. The project proponent shall ensure that no natural watercourse and / or water resources are obstructed due to any mining operations.
19. 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 runoff water from the runoff management system shall be adequately treated to meet the prescribed standards as stated in Sl. 2 of Part-A of this order.
20. 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 and mineral stack yards terminating at settling pit to prevent direct disposal of runoff to nearby water bodies.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
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CONSENT ORDER  
GHORABHURANI-SAGASAH I IRON ORE BLOCK OF M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD.

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21. 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.
22. 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.
23. ETP shall be provided for workshop and wastewater generated during mining operation. The quality of the treated wastewater shall conform to the prescribed standard. (Part-A, Sl. No.2).
24. 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.
25. 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.
26. 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.
27. 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 daytime (6.00 AM to 9.00 PM) and 70 dB(A) during night time (9.00 PM to 6 AM).
28. 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.
29. Online noise monitoring system shall be installed to monitor noise level during night hours.

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**



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GHORABHURANI-SAGASAHU IRON ORE BLOCK OF M/S. ARCELOR MITTAL NIPPON STEEL INDIA LTD.

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30. Protective barriers shall be provided for the lights to prevent illumination towards the forest area during night hours.
31. 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.
32. 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.
33. 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.
34. The environmental statement report shall be submitted to the Board in prescribed format every year.

  
**MEMBER SECRETARY**

*S.S.*  
**STATE POLLUTION CONTROL BOARD, ODISHA**

TO,

**SRI RAMAKRISHNA CHINNAMSETTY, AUTHORISED SIGNATORY**  
**GHORABHURANI-SAGASAHU IRON ORE BLOCK OF**  
**M/S. ARCELORMITTAL NIPPON STEEL INDIA LTD**  
**3A, 3<sup>RD</sup> FLOOR, FORTUNE TOWER,**  
**CHANDRASEKHARPUR, BHUBANESWAR-751013**

Memo No. \_\_\_\_\_ /Dt. \_\_\_\_\_ /

Copy forwarded to :

- i) Regional Officer, State Pollution Control Board, Rourkela.
- ii) District Collector, **Sundargarh**
- iii) Director of Mines, Govt. of Odisha, Bhubaneswar
- iv) Director, Environment-cum-Special Secretary, F & E. Deptt., Govt. of Odisha, Bhubaneswar.
- v) D.F.O., **Bonai**
- vi) Deputy Director of Mines, **Koira**
- vii) Addl. Chief Env. Engineer (Hazardous Waste Management Cell)
- viii) Sr. Env. Scientist, Central Lab. SPCB, Bhubaneswar
- ix) Consent Register

1  
**CHIEF ENV. ENGINEER (M)**  
**STATE POLLUTION CONTROL BOARD, ODISHA**





भारत सरकार  
 ढिं4 मTांइय  
 ये स'साधन, नदी विकास ढर  
 ग'गा स'संठ विभाग क'रीय  
 भूजल ये ढावधकरंठ  
 Government of India  
 Ministry of Jal Shakti  
 Department of Water Resources, River  
 Development & Ganga Rejuvenation  
 Central Ground Water Authority

(भूजल निकासी हेतु ःिंांनू ढंमांठ ढT)

**NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION**

Project Name:	Ghorabhurani-sagasahi Iron Ore Block Of Arcelormittal Nippon Steel India Limited		
Project Address:	Arcelormittal Nippon Steel India Limited, Sagasahi, Koida, Sundergarh, Odisha		
Village:	Segasahi	Block:	Koida
District:	Sundargarh	State:	Odisha
Pin Code:			
Communication Address:	Arcelormittal Nippon Steel India Limited, Ore Club, Bhadrasahi Chowk, Nh 215, Barbil, Keonjhar, Odisha, Joda, Kendujhar, Odisha - 758035		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 750001		

1. <b>NOC No.:</b>	CGWA/NOC/MIN/ORIG/2022/14796											
2. Application No.:	21-4/3336/OR/MIN/2022			3. Category: (GWRE 2020)	Safe							
4. Project Status:	New Project			5. NOC Type:	New							
6. <b>Valid from:</b>	14/03/2022			7. <b>Valid up to:</b>	13/03/2024							
8. Ground Water Abstraction Permitted:												
Fresh Water		Saline Water		Dewatering		Total						
m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year					
95.00	34675.00											
9. Details of ground water abstraction /Dewatering structures												
<b>Total Existing No.:0</b>				<b>Total Proposed No.:3</b>								
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu

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**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

Abstraction Structure*	0	0	0	0	0	0	0	0	0	3	0	0	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps													
10. Ground Water Abstraction/Restoration Charges paid (Rs.):											34675.00		
11. 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	1		0	1	0								

**(Compliance Conditions given overleaf)**

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

**18/11, जामिगर हाउस, मॉिनस ह रा, ि5 नदमी – 110011 / 18/11, Jamnagar House, Mansingh Road, New  
Delhi-110011 Phone: (011) 23383561 Fax: 23382051, 23386743**

**Website: cgwa-noc.gov.in**  
**ढािी बचाये – जीवि बचाये**  
**SAVE WATER - SAVE LIFE**

**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<sup>3</sup>/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)
  - 15) 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.
  - 16) 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.
  - 17) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste
  - 18) 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.
  - 19) 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.
  - 20) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.
  - 21) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
  - 22) 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

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghoraburhani Saasahi Iron Ore Block of M/s. ArcelorMittal Nippon Steel India Ltd.,**

ANNEXURE # 7

merits and take decisions independently of the NOC.

23) 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.

24) 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.

25) 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 groundwater abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

26) 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.

27) In case of new infrastructure projects having ground water abstraction of more than 20 m<sup>3</sup>/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

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

29) 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.

30) 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.

31) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

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

**Ghoraburhani – Sagasahi Iron ore block of M/s ArcelorMittal Nippon Steel India Limited**  
 (Formerly Essar Steel India Limited)

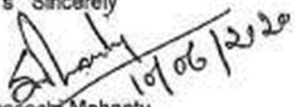
Dear Sir

With reference to the subject cited above, we would like to inform you that in compliance to the condition mentioned in the Environmental Clearance granted on 28<sup>th</sup> May 2020 for Ghoraburhani – Sagasahi Iron ore block, we are hereby enclosing the copy of the advertisements published in following two local news paper on 31<sup>st</sup> May 2020 :

1. "Prameya" in Odia language
2. "New Indian Express (Sunday addition)" in English language

This is for your kind information & necessary action please.

Thanking You,  
 Your's Sincerely

  
 Sabyasachi Mohanty  
 (Authorised Signatory)  
 ArcelorMittal Nippon Steel India Limited  
 (Formerly Essar Steel India Limited)

Encls : As above

CC to: The Joint Director, Ministry of Environment, Forest & Climate Change, Regional Office,  
 A-3, Chandrasekharapur, Bhubaneswar - 751023

ArcelorMittal Nippon Steel India Limited  
 (Formerly Essar Steel India Limited)  
 Pellet Plant, Udayabata, Paradeep - 754 142  
 Dist.: Jagalsinghpur  
 Odisha, India  
 Regd. Off: 27km, Surat-Hazira Road, Hazira, Surat  
 Gujarat 394270 India  
 CIN U27100GJ1976FLC013787

T +91 67 2222 7076  
 E contact@amns.in  
 W www.amns.in

A joint venture between ArcelorMittal and  
 Nippon Steel Corporation



# THE NEW SUNDAY EXPRESS

BHUBANESWAR • SUNDAY • MAY 31, 2020 • ₹8.00 • PAGES 26 • LATE CITY EDITION



## WHO, RESTRICTS OF CHINESE STUDENTS

Restrictive actions by President Donald Trump on the matter complicates US's fraught ties with China

## TRUMP SAYS RESEARCHERS STEALING IP

Trump late on Friday charged that the WHO didn't respond adequately to the pandemic, accusing the health body of being under China's "total control". In a separate action, he banned Chinese students and researchers having ties with the People's Liberation Army from entering the US, alleging they operate as non-traditional collectors of intellectual property

## MERKEL WON'T ATTEND

Experts say Saturday's actions underscore his eagerness to not absolve him of responsibility for the crisis. Meanwhile, German Chancellor, Angela Merkel, will not attend an in-person G7 meeting this week.

BY ANAND K. SINGH

BY ANAND K. SINGH

## Verber...

While Governor Nara Chandrababu Naidu and staff joined singing at the Raj Bhawan, Chief Minister Nara Chandrababu Naidu recited the sonnet written by Nara Chandrababu Naidu with 5Ts Secretary Anand K. Singh. MLAs led by Surya Narayan Prasad joined the program from the Assembly.

The program assumed a special flavour with Melody Queen Asha Bhosle lending her voice to the composition by Shankar Mahadevan and dedicating it to frontline Covid warriors.

Union ministers Dr. Jai Prakash Narayan and Prafulla Kumar Patra and MPs from different political parties, including BJP national vice-president...

## PUBLIC NOTICE

It is for the information of all concerned that M/S ArcelorMittal Nippon Steel India Limited (Formerly Essar Steel India Ltd.), 2nd floor, Birla Centurion, Century Mills Compound, Pandurang Budhkar Marg, Worli, Mumbai-400 030, Maharashtra, has been granted Environment Clearance (EC) on 28.05.2020 by Ministry of Environment, Forest and Climate Change, Government of India for "Ghoraburhani - Sagasahi Iron Ore Block with proposed production of 7,162,538 TPA Iron Ore (ROM), 18750 TPA Topsoil and 2,868,896 TPA OB/SB/IB (Total excavation: 1,00,50,184 TPA) along with Crushing & Screening plant and Beneficiation plant with capacity of 6.7 Million TPA (1250 TPH) Capacity in the mine lease area of 139.165 ha, located at village - Ghoraburhani, Sagasahi and Kalmang, Tehsil - Korra, District - Sundargarh, Odisha".

Copy of the EC letter is available with the State Pollution Control Board/Committee and website of the Ministry of Environment, Forest and Climate Change ([www.parivesh.nic.in](http://www.parivesh.nic.in)).

Place : Bhubaneswar

Date : 30/05/2020 ArcelorMittal Nippon Steel India Limited

Sd/-

BY ANAND K. SINGH

## TIRUPUR

Tenders for Tiruppur City...

Total estimate Mission by Co P.M. on 07.07

Tiruppur City day at 3.30 P.M.

present at the website : <http://www.tiruppurcity.org>

for further details in any of the websites

to be held on 28/05/2020

Tiruppur City for the tenders will have the option

to withdraw their bids. For No. 151/2020

Place : Tiruppur Date : 28-05-2020

28/05/2020 TENDERS

OFFICE

of the Corporation

of Tiruppur

at Tiruppur

on 28/05/2020

at Tiruppur

on 28/05/2020

at Tiruppur

on 28/05/2020

at Tiruppur

on 28/05/2020

at Tiruppur

on 28/05/2020

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## OC... nts, malls, places of an open from June 8

opened after consulting state government and Union Territories. whose areas will be demarcated by state governments and Union Territories.

Hotels, restaurants, other hospitality services	✓	✓	✓
Shopping malls	✓	✓	✓
Schools, colleges, educational / training / coaching institutions	✗	✓	✓
International air travel	✗	✗	✓
Metro rail	✗	✗	✓
Cinema halls / gymnasiums / swimming pools / entertainment parks / theatres / bars / auditoriums / assembly halls	✗	✗	✓
Caravans / holiday homes /			



**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. Arcelor Mittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

Form 59  
[See rules 115 (2)]

**Pollution Under Control Certificate**  
 Authorised By :  
 Government of Odisha

**Date** : 10/05/2022  
**Time** : 14:57:56 PM  
**Validity upto** : 09/11/2022



Certificate SL. No. : OR90100240000642  
 Registration No. : JH10AS4203  
 Date of Registration : 28/Jan/2015  
 Month & Year of Manufacturing : December-2014  
 Valid Mobile Number : \*\*\*\*\*2080  
 Emission Norms : BHARAT STAGE III  
 Fuel : DIESEL  
 PUC Code : OR9010024  
 GSTIN : 21ALHPR2026H1ZG  
 Fees : Rs.177.00(GST as applicable)  
 MIL observation : No.

Vehicle Photo with Registration plate  
 60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.05

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://vahan.parivahan.gov.in>

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. Arcelor Mittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

**Table-1**

**GHORABURUHANI SAGASAH I IRON ORE MINE**  
**ARCELORMITTAL NIPON STEEL INDIA LIMITED**

<b>PLANTATION ANNUAL STATEMENT FOR THE YEAR 2021-2022</b>											
<b>Sl. No</b>	<b>Within ML</b>			<b>Out Side ML</b>			<b>Avenue Plantation</b>			<b>Total</b>	
	<b>No of Trees Planted</b>	<b>Area in Ha</b>	<b>Survi val rate</b>	<b>No of Trees Planted</b>	<b>Area in Ha</b>	<b>Survi val rate</b>	<b>No of Trees Planted</b>	<b>Area in RKM</b>	<b>Survi val rate</b>	<b>No of Trees Planted</b>	<b>Survival rate</b>
<b>1</b>	<b>7284 Nos</b>	<b>0.690</b>	<b>75%</b>	<b>1551 Nos</b>	<b>0.4483</b>	<b>76%</b>	<b>250 Nos</b>	<b>0.25KM</b>	<b>79%</b>	<b>9085 Nos</b>	<b>76%</b>

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**  
**Ghorabhurani Sagasahi Iron Ore Block of M/s. Arcelor Mittal Nippon Steel India Ltd.,**  
**At- Ghorabhurani, PO –Koida, Dist.: Sundergarh**

<b>GHORABURHANI SAGASAH I IRON ORE MINES</b>			
<b>ENVIRONMENT CELL EXPENSES</b>			
<b>Period: October to March-2022</b>			
<b>SL.No.</b>	<b>Particulars</b>	<b>Capital Cost(in Lakh)</b>	<b>Recurring cost</b>
	<b>Air Pollution Control Measures</b>		
1	Mobile water Sprinkler	45,00,000	43,385
	Dry Fog System	2,85,000	
	<b>Water pollution control Measures</b>		
2	Coir mating	18,69,369	
	settling Pond & Garland Drain	25,500	
	Retaining wall construction	4,57,300	
	<b>Green Belt Development</b>		
3	Plantation (ML Safety zone,Camp campus & road s/z)	50,000	
	<b>Environmental Monitoring</b>		
4	CAAQMS Instrument cost	3,24,320	
	Monitoring Analysis Charges		1,58,946
	Flow Meter	1,65,900	
	Piezometer	90,000	
	<b>Environment Cell</b>		
5	Salary		1,50,000
	<b>Occupatioanal Health measures</b>		
6	IME/PME		165000
	<b>GRAND TOTAL</b>	<b>77,67,389</b>	<b>5,17,331</b>

P. C. Sabra

ENVIRONMENT CELL  
GSIOM,AMNS INDIA LTD



PROJECT HEAD  
GSIOM,AMNS INDIA LTD

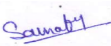


## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070325
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150943
	<b>NABL ULR No.</b> :TC592622000004351F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Mines Lease Area Near MLP-37 (Core Zone ), Code: A1
Date of Monitoring	: 01-03-2022
Time of Monitoring	: 10:11 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.28
Volume of air sampled,m3	: 1761.65
Avg. Ambient Temperature,°C	: 31

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
<b>S.No.</b>	<b>Parameters</b>	<b>Method</b>	<b>Specification</b>	<b>Result</b>
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	15
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	16
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	81
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	20

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

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## Test Report

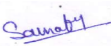
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070325 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150943 <b>NABL ULR No.</b> :TC592622000004351F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)


#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
 Sampling Procedure: SOP/ITC/EW/056

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
 Saurabh Sharma  
 15-03-2022  
 Reviewer

  
 15-03-2022  
 PremKumar  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070328
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150946
	<b>NABL ULR No.</b> :TC592622000004363F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Mines Entry & Exit Gate of Ore Carrying Trucks (Core Zone),Code: A2
Date of Monitoring	: 01-03-2022
Time of Monitoring	: 10:50 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.30
Volume of air sampled,m3	: 1795.08
Avg. Ambient Temperature,°C	: 30

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
<b>S.No.</b>	<b>Parameters</b>	<b>Method</b>	<b>Specification</b>	<b>Result</b>
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	16
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	16
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	88
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	22

*Saurabh Sharma*  
Saurabh Sharma  
15-03-2022  
Reviewer

*PremKumar*  
15-03-2022  
PremKumar  
[Authorized Signatory]

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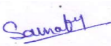
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070328 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150946 <b>NABL ULR No.</b> :TC592622000004363F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)


'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070330
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150948
	<b>NABL ULR No.</b> :TC592622000004358F
	<b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Mines Lease Area (Near Mines Canteen) (Core Zone), Code: A3
Date of Monitoring	: 01-03-2022
Time of Monitoring	: 09:10 hrs
Purpose of Monitoring	: To Assess the pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.3
Volume of air sampled,m3	: 1803.46
Avg. Ambient Temperature,°C	: 29

<b>Description</b>				
Description		Ambient Air Quality Monitoring		
<b>S.No.</b>	<b>Parameters</b>	<b>Method</b>	<b>Specification</b>	<b>Result</b>
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	15
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	18
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	77
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	18

*Saurabh*  
Saurabh Sharma  
15-03-2022  
Reviewer

*PremKumar*  
15-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 2

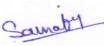
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070330 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150948 <b>NABL ULR No.</b> :TC592622000004358F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)


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**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

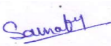
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070332
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150950
	<b>NABL ULR No.</b> :TC592622000004362F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Ghorabhurani Village (Buffer Zone), Code: A4
Date of Monitoring	: 02-03-2022
Time of Monitoring	: 10:40 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.29
Volume of air sampled,m3	: 1789.58
Avg. Ambient Temperature,°C	: 29

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	15
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	19
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	85
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	19

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 2 of 2

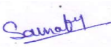
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070332 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150950 <b>NABL ULR No.</b> :TC592622000004362F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)

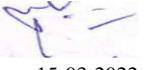
#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

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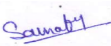


## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070333
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150951
	<b>NABL ULR No.</b> :TC592622000004350F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Sagasahi Village (Buffer Zone), Code: A5
Date of Monitoring	: 02-03-2022
Time of Monitoring	: 10:55 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.28
Volume of air sampled,m3	: 1778.29
Avg. Ambient Temperature,°C	: 31

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	14
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	18
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	82
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	18

  
 Saurabh Sharma  
 15-03-2022  
 Reviewer

  
 15-03-2022  
 PremKumar  
 [Authorized Signatory]

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## Test Report

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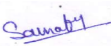
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070333 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150951 <b>NABL ULR No.</b> :TC592622000004350F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)

#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

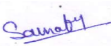
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070334
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150952
	<b>NABL ULR No.</b> :TC592622000004346F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Kalmong Village (Buffer Zone), Code: A6
Date of Monitoring	: 02-03-2022
Time of Monitoring	: 11:20 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.29
Volume of air sampled,m3	: 1761.43
Avg. Ambient Temperature,°C	: 33

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	16
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	19
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	86
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	21

  
 Saurabh Sharma  
 15-03-2022  
 Reviewer

  
 15-03-2022  
 PremKumar  
 [Authorized Signatory]

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## Test Report

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Page 2 of 2

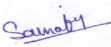
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070334 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150952 <b>NABL ULR No.</b> :TC592622000004346F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)

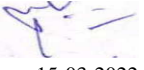
#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

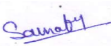
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203070335
	<b>Sample Reg. Date</b> :07-03-2022
	<b>Report Date</b> :15-03-2022
	<b>Report No.</b> :ICE-2203150953
	<b>NABL ULR No.</b> :TC592622000004341F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Barapada Village (Buffer Zone), Code: A7
Date of Monitoring	: 02-03-2022
Time of Monitoring	: 11:00 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.28
Volume of air sampled,m3	: 1761.65
Avg. Ambient Temperature,°C	: 31

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	15
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	17
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	77
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	17

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

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Page 2 of 2

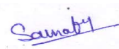
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203070335 <b>Sample Reg. Date</b> :07-03-2022 <b>Report Date</b> :15-03-2022 <b>Report No.</b> :ICE-2203150953 <b>NABL ULR No.</b> :TC592622000004341F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)


'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
15-03-2022  
Reviewer

  
15-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

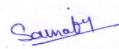
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203160907
	<b>Sample Reg. Date</b> :16-03-2022
	<b>Report Date</b> :21-03-2022
	<b>Report No.</b> :ICE-2203211142
	<b>NABL ULR No.</b> :TC592622000004601F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: NAAQS 2009
<b>General Information :</b>	
Location of Sampling Point	: Ghorabhurani Village ( Buffer Zone ), Code: A4
Date of Monitoring	: 08-03-2022
Time of Monitoring	: 11:10 hrs
Purpose of Monitoring	: To Assess the Pollution Level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.29
Volume of air sampled,m3	: 1773.33
Avg. Ambient Temperature,°C	: 33

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Ambient Air Quality Parameters</b>			
a.	Sulphur Dioxide(SO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-2)	80 Max	16
b.	Nitrogen Dioxide(NO <sub>2</sub> ),µg/m <sup>3</sup>	IS:5182(P-6)	80 Max	17
c.	Particulate Matter (PM <sub>10</sub> ),µg/m <sup>3</sup>	IS:5182(P-23)	100 Max	74
d.	Particulate matter (PM <sub>2.5</sub> ),µg/m <sup>3</sup>	STP/ITC/EW-01	60 Max	16

  
Saurabh Sharma  
21-03-2022  
Reviewer

  
21-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

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Page 2 of 2

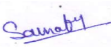
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203160907 <b>Sample Reg. Date</b> :16-03-2022 <b>Report Date</b> :21-03-2022 <b>Report No.</b> :ICE-2203211142 <b>NABL ULR No.</b> :TC592622000004601F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-		
e.	Carbon Monoxide(CO),mg/m3	IS:5182(P-10)	4 Max	BLQ(LOQ:1.0)

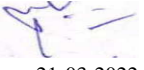
#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.  
Sampling Procedure: SOP/ITC/EW/056

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
Saurabh Sharma  
21-03-2022  
Reviewer

  
21-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

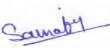
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080375 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221217 <b>NABL ULR No.</b> :TC592622000004655F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---


<b>Test Report as per IS:</b> EPA Act 1986/PCLS/2010	<b>With Amendment No.(s):</b>
--	-------------------------------

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	STP Outlet Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	08-03-2022
n)	Date of Start	08-03-2022
o)	Date of Completion	22-03-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. on 03.03.2022

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Saurabh Sharma  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080375 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221217 <b>NABL ULR No.</b> :TC592622000004655F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited-Sundargarh ( Odisha )
t)	Manufactured By <sup>#</sup>	NA
u)	Supplied By <sup>#</sup>	NA

### PART B : SUPPLEMENTARY INFORMATIONS

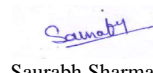
a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Slightly Turbid Liquid
-------------	------------------------

S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Pollution &amp; Environment</b>				
<b>1.</b>	<b>General Parameters</b>			
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-9	6.62
b.	Total Suspended Solids,(mg/l)	IS:3025(Part 17)	Max. 100	66
c.	Chemical Oxygen Demand(mg/l)	APHA-23rd Edition	Not Specified	119
d.	Bio-chemical Oxygen Demand, mg/l (3 days at 27°C)	IS:3025(P-44)	Max. 30	19
<b>Discipline : Biological</b>				
<b>Group : Pollution &amp; Environment</b>				

  
 22-03-2022  
 Gaurav Khandelwal  
 [Authorized Signatory]

  
 Saurabh Sharma  
 22-03-2022  
 Reviewer

  
 22-03-2022  
 PremKumar  
 [Authorized Signatory]

### Disclaimer :

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080375 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221217 <b>NABL ULR No.</b> :TC592622000004655F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-
---	--

<b>1.</b>	<b>Microbiological Tests</b>			
a.	Faecal Coliform, MPN/100ml	APHA-23 rd Edn 17-9221 F	Max. 1000	540

# represents Customer Defined Fields

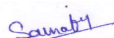
**NOTE :** NA- Not Applicable, Requirements as per EPA Act 1986/PCLS/2010, Sampling Procedure - SOP/ITC/EW/030

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]



Saurabh Sharma  
 22-03-2022  
**Reviewer**



22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

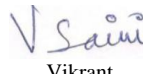
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080376 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221243 <b>NABL ULR No.</b> :TC592622000004674F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Surface Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	6 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	08-03-2022
n)	Date of Start	08-03-2022
o)	Date of Completion	22-03-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080376 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221243 <b>NABL ULR No.</b> :TC592622000004674F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

r)	Any Other Information	Sample Collected by lab rep. Mr. Surya Mukherjee on 03.03.2022, Sample from Suna River UP Stream Near Oraghat (Code: SW1)
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited-Sundargarh ( Odisha )
t)	Manufactured By#	NA
u)	Supplied By#	NA

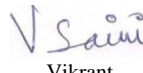
### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Coloured Liquid				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1. Organoleptic &amp;Physical Parameter</b>					
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	14
b.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
c.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.19

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

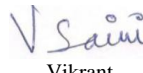
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080376
	<b>Sample Reg. Date</b> :08-03-2022
	<b>Report Date</b> :22-03-2022
	<b>Report No.</b> :ICE-2203221243
	<b>NABL ULR No.</b> :TC592622000004674F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

d.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	6.51
e.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	39
<b>2. Parameters Concerning Undesirable Substances in excess amount</b>					
a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	3.8
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.03)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	2
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable

  
22-03-2022  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
22-03-2022  
Reviewer

  
22-03-2022  
PremKumar  
[Authorized Signatory]

### Disclaimer :

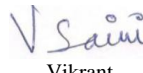
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080376 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221243 <b>NABL ULR No.</b> :TC592622000004674F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	1.8
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)
p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	APHA-23rd Edition	200 Max.	400 Max.	8
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	16.5
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	17.2
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	0.329
<b>3. Parameters Concerning Toxic Substances</b>					
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	BLQ(LOQ:0.002)
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

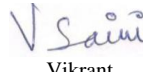
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080377 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221244 <b>NABL ULR No.</b> :TC592622000004675F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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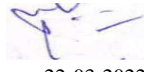
<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
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### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Surface Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	6 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	08-03-2022
n)	Date of Start	08-03-2022
o)	Date of Completion	22-03-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080377 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221244 <b>NABL ULR No.</b> :TC592622000004675F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

r)	Any Other Information	Sample Collected by lab rep. Mr. Surya Mukherjee on 04.03.2022, Sample from Suna River Down Stream Near Kalmong (Code: SW2)
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited-Sundargarh ( Odisha )
t)	Manufactured By#	NA
u)	Supplied By#	NA

### PART B : SUPPLIMENTARY INFORMATIONS

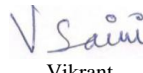
a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	coloured liquid.
-------------	------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1. Organoleptic &amp;Physical Parameter</b>					
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	18
b.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
c.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.57

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

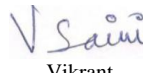
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080377 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221244 <b>NABL ULR No.</b> :TC592622000004675F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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d.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	6.97
e.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	24
<b>2. Parameters Concerning Undesirable Substances in excess amount</b>					
a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	4.2
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.03)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	3
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

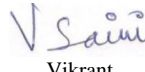
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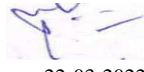
## Test Report

<p><b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh</p>	<p><b>Sample Reg. No.</b> :E01-2203080377 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221244 <b>NABL ULR No.</b> :TC592622000004675F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-</p>
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m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	1.8
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)
p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	APHA-23rd Edition	200 Max.	400 Max.	10.2
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	12.4
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	18.2
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	0.358
<b>3. Parameters Concerning Toxic Substances</b>					
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	0.002
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

  
22-03-2022  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
22-03-2022  
Reviewer

  
22-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

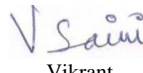
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080378 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221248 <b>NABL ULR No.</b> :TC592622000004676F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
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### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Surface Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	6 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	08-03-2022
n)	Date of Start	08-03-2022
o)	Date of Completion	22-03-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Surya Mukherjee on 03.03.2022, Sample from Karo Nalla (Code: SW3)

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080378 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221248 <b>NABL ULR No.</b> :TC592622000004676F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited-Sundargarh ( Odisha )
t)	Manufactured By#	NA
u)	Supplied By #	NA

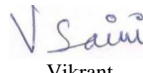
### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Coloured liquid.				
<b>S.No.</b>	<b>Parameters</b>	<b>Method</b>	<b>Acceptable Limit</b>	<b>Permissible Limit</b>	<b>Result</b>
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Organoleptic &amp; Physical Parameter</b>				
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no1	5 Max.	15 Max.	16
b.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
c.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.57
d.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	8.89

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

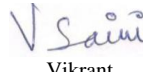
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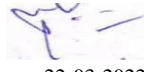
## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080378 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221248 <b>NABL ULR No.</b> :TC592622000004676F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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e.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	85
<b>2.</b>	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	3.5
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.03)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	3.4
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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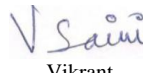


## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080378 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221248 <b>NABL ULR No.</b> :TC592622000004676F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	7.7
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)
p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	APHA-23rd Edition	200 Max.	400 Max.	15.2
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	41.2
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	40.3
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	0.360
<b>3. Parameters Concerning Toxic Substances</b>					
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	0.005
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
<b>Discipline : Biological</b>					

  
22-03-2022  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
22-03-2022  
Reviewer

  
22-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080378 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221248 <b>NABL ULR No.</b> :TC592622000004676F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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<b>Group : Water</b>					
<b>1. Microbiological Tests</b>					
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

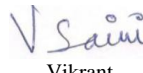
# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
 86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
 Panchkula-134109 (Haryana)  
 Phone : (O) 0172-2561543, 2565825  
 Email : customersupport@itclabs.com  
 Visit us : www.itclabs.com

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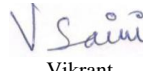
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080379 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221245 <b>NABL ULR No.</b> :TC592622000004677F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
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<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Surface Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	6 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in bottles
m)	Date of Receipt	08-03-2022
n)	Date of Start	08-03-2022
o)	Date of Completion	22-03-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Surya Mukherjee on 03.03.2022, Sample from Tehrai Nalla (Code: SW4)

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
 Reviewer

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080379 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221245 <b>NABL ULR No.</b> :TC592622000004677F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited-Sundargarh ( Odisha )
t)	Manufactured By <sup>#</sup>	NA
u)	Supplied By <sup>#</sup>	NA

### PART B : SUPPLEMENTARY INFORMATIONS

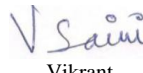
a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

### Description

Description	Coloured liquid.
-------------	------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1.</b>	<b>Organoleptic &amp; Physical Parameter</b>				
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no1	5 Max.	15 Max.	18
b.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
c.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.64
d.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	7.86

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

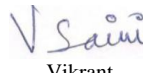
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080379 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221245 <b>NABL ULR No.</b> :TC592622000004677F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
--	---

e.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	34
<b>2.</b>	<b>Parameters Concerning Undesirable Substances in excess amount</b>				
a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	4.6
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.03)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	1.4
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

### Disclaimer :

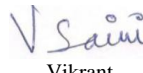
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080379 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221245 <b>NABL ULR No.</b> :TC592622000004677F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
--	---

n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	3.0
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)
p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	0.003
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	APHA-23rd Edition	200 Max.	400 Max.	14.6
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	19.5
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	24
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	0.321
<b>3. Parameters Concerning Toxic Substances</b>					
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	0.002
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
<b>Discipline : Biological</b>					

  
 22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]

  
 Vikrant  
 22-03-2022  
**Reviewer**

  
 22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203080379 <b>Sample Reg. Date</b> :08-03-2022 <b>Report Date</b> :22-03-2022 <b>Report No.</b> :ICE-2203221245 <b>NABL ULR No.</b> :TC592622000004677F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
--	---

<b>Group : Water</b>					
<b>1. Microbiological Tests</b>					
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

# represents Customer Defined Fields

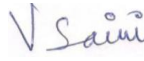
**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification. Sampling Procedure: SOP/ITC/EW/030.

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*



22-03-2022  
**Gaurav Khandelwal**  
 [Authorized Signatory]



Vikrant  
 22-03-2022  
**Reviewer**



22-03-2022  
**PremKumar**  
 [Authorized Signatory]

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## Test Report


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Page 1 of 5

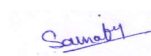
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291198
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060152
	<b>NABL ULR No.</b> :TC592621000014444F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	7 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in bottles & in cans
m)	Date of Receipt	29-11-2021
n)	Date of Start	29-11-2021
o)	Date of Completion	06-12-2021
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Jeet on 23.11.2021, Sample from Kalmong
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of Arcelor-Sundargarh ( Odisha )

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
07-12-2021  
Reviewer

  
07-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501

Page 2 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291198
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060152
	<b>NABL ULR No.</b> :TC592621000014444F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

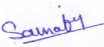
t)	Manufactured By#	NA
u)	Supplied By#	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1. Organoleptic &amp; Physical Parameter</b>					
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	4
b.	Taste	IS:3025(Part 8):1984(RA:2017)	Agreeable	-	Ageeable
c.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
d.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.08
e.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	1.1
f.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	52
<b>2. Parameters Concerning Undesirable Substances in excess amount</b>					

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
07-12-2021  
Reviewer

  
07-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

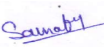
Document QF : 2501

Page 3 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291198 <b>Sample Reg. Date</b> :29-11-2021 <b>Report Date</b> :06-12-2021 <b>Report No.</b> :ICE-2112060152 <b>NABL ULR No.</b> :TC592621000014444F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-
---	---

Sl. No.	Parameter	Standard	Limit	Relaxation	Result
a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	8.2
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.02)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	4.8
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	0.5
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
07-12-2021  
Reviewer

  
07-12-2021  
PremKumar  
[Authorized Signatory]

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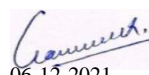
## Test Report

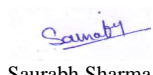
Document QF : 2501

Page 4 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291198
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060152
	<b>NABL ULR No.</b> :TC592621000014444F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	IS:3025(Part 24):1986(RA:2014)	200 Max.	400 Max.	4.9
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	20.9
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	22.6
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	BLQ(LOQ:0.002)
<b>3.</b>	<b>Parameters Concerning Toxic Substances</b>				
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	BLQ(LOQ:0.002)
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
	<b>Discipline : Biological</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Microbiological Tests</b>				
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
07-12-2021  
Reviewer

  
07-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 5 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291198
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060152
	<b>NABL ULR No.</b> :TC592621000014444F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
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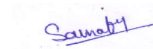
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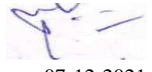
**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** The above referred sample of Ground Water conforms to BIS Specification IS:10500-2012 with upto date amdts with respect to the above tests.

\*\*\*\*\*End Of Report\*\*\*\*\*

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
07-12-2021  
Reviewer

  
07-12-2021  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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Page 1 of 5

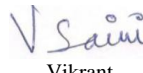
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291199
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :04-12-2021
	<b>Report No.</b> :ICE-2112040122
	<b>NABL ULR No.</b> :TC592621000014391F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>


<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	7 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in bottles & in cans
m)	Date of Receipt	29-11-2021
n)	Date of Start	29-11-2021
o)	Date of Completion	04-12-2021
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Jeet on 23.11.2021, Sample from Oraghat
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of Arcelor-Sundargarh ( Odisha )

  
04-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
04-12-2021  
Reviewer

  
04-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501

Page 2 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291199
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :04-12-2021
	<b>Report No.</b> :ICE-2112040122
	<b>NABL ULR No.</b> :TC592621000014391F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

t)	Manufactured By#	NA
u)	Supplied By#	NA

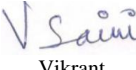
### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

<b>Description</b>	Clear Colourless Liquid
--------------------	-------------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	<b>Discipline : Chemical</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Organoleptic &amp; Physical Parameter</b>				
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	4
b.	Taste	IS:3025(Part 8):1984(RA:2017)	Agreeable	-	Agreeable
c.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
d.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.68
e.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	1.0
f.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	48
<b>2.</b>	<b>Parameters Concerning Undesirable Substances in excess amount</b>				

  
04-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
04-12-2021  
Reviewer

  
04-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

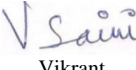
Document QF : 2501

Page 3 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291199
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :04-12-2021
	<b>Report No.</b> :ICE-2112040122
	<b>NABL ULR No.</b> :TC592621000014391F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	6.5
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.02)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	3.9
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	3.0
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)

  
04-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
04-12-2021  
Reviewer

  
04-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

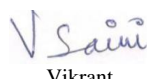
Document QF : 2501


Page 4 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291199
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :04-12-2021
	<b>Report No.</b> :ICE-2112040122
	<b>NABL ULR No.</b> :TC592621000014391F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated</b> :-

p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	IS:3025(Part 24):1986(RA:2014)	200 Max.	400 Max.	1.9
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.005)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	23.0
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	28.8
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	BLQ(LOQ:0.002)
<b>3.</b>	<b>Parameters Concerning Toxic Substances</b>				
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	BLQ(LOQ:0.002)
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
	<b>Discipline : Biological</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Microbiological Tests</b>				
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

  
04-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
04-12-2021  
Reviewer

  
04-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 5 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291199
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :04-12-2021
	<b>Report No.</b> :ICE-2112040122
	<b>NABL ULR No.</b> :TC592621000014391F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
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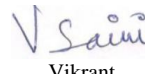
'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** The above referred sample of Ground Water conforms to BIS Specification IS:10500-2012 with upto date amdts with respect to the above tests.

\*\*\*\*\*End Of Report\*\*\*\*\*

  
04-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
04-12-2021  
Reviewer

  
04-12-2021  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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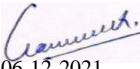
Page 1 of 5

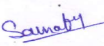
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291200
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060178
	<b>NABL ULR No.</b> :TC592621000014433F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	7 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in bottles & in cans
m)	Date of Receipt	29-11-2021
n)	Date of Start	29-11-2021
o)	Date of Completion	06-12-2021
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Jeet on 23.11.2021, Sample from Shankapura
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of Arcelor-Sundargarh ( Odisha )

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501

Page 2 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291200
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060178
	<b>NABL ULR No.</b> :TC592621000014433F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated</b> :-

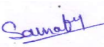
t)	Manufactured By#	NA
u)	Supplied By#	NA

### PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1. Organoleptic &amp; Physical Parameter</b>					
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	4
b.	Taste	IS:3025(Part 8):1984(RA:2017)	Agreeable	-	Agreeable
c.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
d.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	6.71
e.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	3.83
f.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	38
<b>2. Parameters Concerning Undesirable Substances in excess amount</b>					

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

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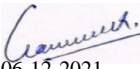
## Test Report

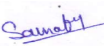
Document QF : 2501

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<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291200
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060178
	<b>NABL ULR No.</b> :TC592621000014433F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	4.1
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.02)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	3.0
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	3.0
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

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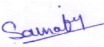
Document QF : 2501

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<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291200
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060178
	<b>NABL ULR No.</b> :TC592621000014433F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	IS:3025(Part 24):1986(RA:2014)	200 Max.	400 Max.	2
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	17.7
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	23
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	BLQ(LOQ:0.002)
<b>3.</b>	<b>Parameters Concerning Toxic Substances</b>				
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	BLQ(LOQ:0.002)
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
	<b>Discipline : Biological</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Microbiological Tests</b>				
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Saurabh Sharma  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501  
Page 5 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291200
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060178
	<b>NABL ULR No.</b> :TC592621000014433F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
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'#' represents Customer Defined Fields

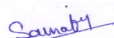
**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030,

**REMARKS :** The above referred sample of Ground Water conforms to BIS Specification IS:10500-2012 with upto date amdts with respect to the above tests.

\*\*\*\*\*End Of Report\*\*\*\*\*



06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]



Saurabh Sharma  
06-12-2021  
Reviewer



06-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report


Document QF : 2501

Page 1 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291201
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060164
	<b>NABL ULR No.</b> :TC592621000014432F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

<b>Test Report as per IS:</b> BIS Specification IS:10500-2012	<b>With Amendment No.(s):</b> 01 to 03
---	--

### PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	7 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in bottles & in cans
m)	Date of Receipt	29-11-2021
n)	Date of Start	29-11-2021
o)	Date of Completion	06-12-2021
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Jeet on 24.11.2021, Sample from Ghandhalpada
s)	Test Request Submitted By	Ghorabhurani - Sagasahi Iron Ore Block of Arcelor-Sundargarh ( Odisha )

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

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## Test Report

Document QF : 2501

Page 2 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291201
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060164
	<b>NABL ULR No.</b> :TC592621000014432F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

t)	Manufactured By#	NA
u)	Supplied By#	NA

### PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Ground Water			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
<b>Discipline : Chemical</b>					
<b>Group : Water</b>					
<b>1. Organoleptic &amp; Physical Parameter</b>					
a.	Colour (Hazen)	IS:3025(Part4):1983(RA:2017)amd. no 1	5 Max.	15 Max.	4
b.	Taste	IS:3025(Part 8):1984(RA:2017)	Agreeable	-	Agreeable
c.	Odour	IS:3025(Part 5):1983(RA:2017)	Agreeable	-	Agreeable
d.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	6.79
e.	Turbidity(NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	3.14
f.	Total Dissolved Solids,(mg/l)	IS:3025(Part 16):1984(RA.2006)	500 Max.	2000 Max.	46
<b>2. Parameters Concerning Undesirable Substances in excess amount</b>					

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
06-12-2021  
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## Test Report

Document QF : 2501

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<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291201
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060164
	<b>NABL ULR No.</b> :TC592621000014432F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated :-</b>

a.	Aluminium as Al, (mg/l)	IS:3025(Part 55):RA2014	0.03 Max.	0.2 Max.	BLQ(LOQ:0.02)
b.	Ammonia (as total ammonia-N) (mg/l)	IS:3025(Part 34):1988(RA:2014)	0.5 Max.	No Relaxation	BLQ(LOQ:0.1)
c.	Anionic detergent(as MBAS),(mg/l)	IS:13428:2005(RA:2009)-Annex K	0.2 Max.	1.0 Max.	BLQ(LOQ:0.05)
d.	Barium (as Ba) (mg/l)	IS:13428:2005(RA:2014)Annex. F/IS:3025(P-65)	0.7 Max.	No relaxation	BLQ(LOQ:0.3)
e.	Boron (as B) (mg/l)	Apha 23rd Edn.2017-3120 B/IS:3025(Part 57):2004(RA:2017)	0.5 Max.	2.4 Max.	BLQ(LOQ:0.5)
f.	Calcium(as Ca), (mg/l)	IS:3025(Part 40):1991(RA:2014) amd no 1	75 Max.	200 Max.	6
g.	Chloramines (as Cl <sub>2</sub> ), (mg/l)	IS:3025(Part 26):1986 amd no 1(RA 2014)	4.0 Max.	No relaxation	BLQ(LOQ:0.02)
h.	Chloride(as Cl) (mg/l)	IS:3025(Part 32):1988(RA:2014)	250 Max.	1000 Max.	5
i.	Copper (as Cu) (mg/l)	IS:3025(P-65)	0.05 Max.	1.5 Max.	BLQ(LOQ:0.002)
j.	Fluoride as F (mg/l)	IS:3025(Part 60):2008 amd. no 1(RA:2013)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
k.	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), (mg/l)	IS:3025(P-43)	0.001 Max.	0.002 Max.	BLQ(LOQ:0.001)
l.	Free Residual Chlorine, (mg/l)	IS:3025(P-26)	0.2 Min.	1.0 Max.	Not Applicable
m.	Iron (as Fe) (mg/l)	IS:3025(Part 53):2003(RA:2014)	1.0 Max.	No relaxation	BLQ(LOQ:0.01)
n.	Magnesium as Mg (mg/l)	IS:3025(Part 46):1994 amd. no. 2(RA:2014)	30 Max.	100 Max.	4.6
o.	Manganese as Mn, (mg/l)	Apha 23rd Edn.2017-3125 B/IS:3025(Part 59):2004(RA:2017)	0.1 Max.	0.3 Max.	BLQ(LOQ:0.1)

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
06-12-2021  
Reviewer

  
06-12-2021  
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[Authorized Signatory]

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## Test Report

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	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060164
	<b>NABL ULR No.</b> :TC592621000014432F
	<b>Customer Ref. No. :-</b>
	<b>Letter Dated</b> :-

p.	Mineral Oil, (mg/l)	Clause 6 of IS:3025(Part39)	1.0 Max.	No Relaxation	BLQ(LOQ:0.01)
q.	Nitrate as NO <sub>3</sub> (mg/l)	IS:3025(Part 34):1988(RA:2014)	45 Max.	No Relaxation	BLQ(LOQ:1.0)
r.	Selenium (as Se) (mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
s.	Silver (as Ag) (mg/l)	IS:3025(P-65)	0.1 Max.	No Relaxation	BLQ(LOQ:0.002)
t.	Sulphate(as SO <sub>4</sub> ) (mg/l)	IS:3025(Part 24):1986(RA:2014)	200 Max.	400 Max.	3.6
u.	Sulphide as H <sub>2</sub> S, (mg/l)	IS:3025(Part 29)	0.05 Max.	No Relaxation	BLQ(LOQ:0.05)
v.	Total Alkalinity(as CaCO <sub>3</sub> )(mg/l)	IS:3025(Part 23)	200 Max.	600 Max.	26.1
w.	Total Hardness(as CaCO <sub>3</sub> ), (mg/l)	IS 3025 (Part 21)	200 Max.	600 Max.	34
x.	Zinc(as Zn)(mg/l)	IS:3025(P-65)	5 Max.	15 Max.	BLQ(LOQ:0.002)
<b>3.</b>	<b>Parameters Concerning Toxic Substances</b>				
a.	Cadmium(as Cd)(mg/l)	IS:3025(P-65)	0.003 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Cyanide(asCN)(mg/l)	IS:3025(Part 27)	0.05 Max.	No Relaxation	BLQ(LOQ:0.01)
c.	Lead(as Pb)(mg/l)	IS:3025(P-65)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
d.	Mercury(as Hg)(mg/l)	IS:3025(P-65)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
e.	Molybdenum(as Mo)(mg/l)	IS:3025(P-65)	0.07 Max.	No Relaxation	BLQ(LOQ:0.002)
f.	Nickel(as Ni) (mg/l)	IS:3025(P-65)	0.02 Max.	No Relaxation	BLQ(LOQ:0.002)
g.	Total Arsenic(as As)(mg/l)	IS:3025(P-65)	0.01 Max.	No relaxation	BLQ(LOQ:0.002)
h.	Total Chromium(as Cr)(mg/l)	IS:3025(P-65)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)
	<b>Discipline : Biological</b>				
	<b>Group : Water</b>				
<b>1.</b>	<b>Microbiological Tests</b>				
a.	<i>E.Coli/100 ml</i>	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
06-12-2021  
Reviewer

  
06-12-2021  
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## Test Report

Document QF : 2501  
Page 5 of 5

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of Arcelor Mittal Nippon Steel India Limited, Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2111291201
	<b>Sample Reg. Date</b> :29-11-2021
	<b>Report Date</b> :06-12-2021
	<b>Report No.</b> :ICE-2112060164
	<b>NABL ULR No.</b> :TC592621000014432F
<b>Customer Ref. No. :-</b>	
<b>Letter Dated</b> :-	

b.	Total Coliform Count/100 ml	IS:15185(Membrane Filtration Method)	Shall not be detectable in any 100 ml sample	-	Absent
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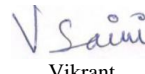
'#' represents Customer Defined Fields


**NOTE :** NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030

**REMARKS :** The above referred sample of Ground Water conforms to BIS Specification IS:10500-2012 with upto date amdts with respect to the above tests.

\*\*\*\*\*End Of Report\*\*\*\*\*

  
06-12-2021  
Gaurav Khandelwal  
[Authorized Signatory]

  
Vikrant  
06-12-2021  
Reviewer

  
06-12-2021  
PremKumar  
[Authorized Signatory]

**Interstellar Testing Centre Pvt. Ltd.**  
86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)  
Panchkula-134109 (Haryana)  
Phone : (O) 0172-2561543, 2565825  
Email : customersupport@itclabs.com  
Visit us : www.itclabs.com

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203160926
	<b>Sample Reg. Date</b> :16-03-2022
	<b>Report Date</b> :17-03-2022
	<b>Report No.</b> :ICE-2203171061
	<b>NABL ULR No.</b> :TC592622000004522F
	<b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: EPA Act 1986/PCLS/2010
<b>General Information :</b>	
Name of Sample	: Work Zone Noise
Date of Monitoring	: 06-03-2022
Time of Monitoring	: 10:05 hrs
Nature of Industry	: Iron Ore Production
Purpose of Monitoring	: To assess the noise level

Description				
Description		Noise Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Location Name</b>			
a.	Screening Plant,(10:20-10:30) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	79.6
b.	Crusher Plant,(10:52-11:10) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	63.8
c.	Ore Storage & Loading,(11:20-11:30) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	65.4
d.	Operator cabin,(11:50-12:10) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	65.3
e.	Mines Pit Area,(12:25-12:35) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	74.2

*Saurabh*  
Saurabh Sharma  
17-03-2022  
Reviewer

*PremKumar*  
19-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

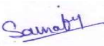
<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh		<b>Sample Reg. No.</b> :E01-2203160926 <b>Sample Reg. Date</b> :16-03-2022 <b>Report Date</b> :17-03-2022 <b>Report No.</b> :ICE-2203171061 <b>NABL ULR No.</b> :TC592622000004522F <b>Customer Ref. No.:-</b> <b>Letter Dated</b> :-		
f.	Work Shop Area,(12:45-12:55) Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 85.0	72.5


'#' represents Customer Defined Fields

**NOTE :** NA- Not Applicable, Requirements as per Factory Act-1948, Sampling Procedure - SOP/ITC/EW/056

**REMARKS :**N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
 Saurabh Sharma  
 17-03-2022  
 Reviewer

  
 19-03-2022  
 PremKumar  
 [Authorized Signatory]

### Disclaimer :

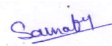
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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203160923
	<b>Sample Reg. Date</b> :16-03-2022
	<b>Report Date</b> :17-03-2022
	<b>Report No.</b> :ICE-2203171067
	<b>NABL ULR No.</b> :TC592622000004516F
	<b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-

<b>Test Report as per :</b>	: EPA Act 1986/PCLS/2010
<b>General Information :</b>	
Name of Sample	: Ambient Noise
Date of Monitoring	: 05-03-2022 to 06-03-2022
Time of Monitoring	: Day & Night
Nature of Industry	: Iron Ore Production
Purpose of Monitoring	: To assess the noise level

Description				
Description		Noise Monitoring		
S.No.	Parameters	Method	Specification	Result
<b>Discipline : Chemical</b>				
<b>Group : Atmospheric Pollution</b>				
<b>1.</b>	<b>Location Name</b>			
a.	Ghoraburhani (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	58.6
b.	Ghoraburhani (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	53.1
c.	Kalmong (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	63.2
d.	Kalmong (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	49.9
e.	Barapada (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	58.3

  
Saurabh Sharma  
17-03-2022  
Reviewer

  
19-03-2022  
PremKumar  
[Authorized Signatory]

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## Test Report

<b>Issued To</b> Ghorabhurani - Sagasahi Iron Ore Block of ArcelorMittal Nippon Steel India Limited Koira, Sundergarh Sundargarh	<b>Sample Reg. No.</b> :E01-2203160923 <b>Sample Reg. Date</b> :16-03-2022 <b>Report Date</b> :17-03-2022 <b>Report No.</b> :ICE-2203171067 <b>NABL ULR No.</b> :TC592622000004516F <b>Customer Ref. No. :-</b> <b>Letter Dated</b> :-
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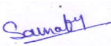
f.	Barapada (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	53.8
g.	Gandhalpada (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	60.8
h.	Gandhalpada (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	53.8
i.	Oraghat (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	61.6
j.	Oraghat (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	52.9
k.	Sagasahi (Day Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 75.0	61.1
l.	Sagasahi (Night Time), Leq dB (A)	IS: 9989 (Reaffirmed 2014)	Max. 70.0	53.0

# represents Customer Defined Fields

**NOTE :** NA- Not Applicable, Requirements as per EPA Act 1986/PCLS/2010, Sampling Procedure : SOP/ITC/EW/056. Day Time - 06 :00 Hrs To 22 :00 Hrs, Night Time - 22 :00 Hrs To 06 :00 Hrs

**REMARKS :** N/A

\*\*\*\*\*End Of Report\*\*\*\*\*

  
 Saurabh Sharma  
 17-03-2022  
 Reviewer

  
 19-03-2022  
 PremKumar  
 [Authorized Signatory]

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