



Ref. No.: MGM/P&E/13/23

Date: 03/Nov/2023

To,
The Additional Director,
Ministry of Environment and Forest & Climate Change,
Eastern Region Office,
A/3, Chandrasekharpur,
Bhubaneswar-751023

Subject: Submission of half-yearly compliance report on the stipulated environmental clearance terms and conditions in respect of Joda West Iron and Manganese Mine of M/s TATA Steel Ltd., for the period from **April'2023 to September'2023**.

Reference:

- 1) MoEF Letter Ref No: J-11015/86/2004-IA. II(M) DATED 13th Sep 2005.
- 2) MoEF&CC's Office Memorandum vide File No. IA3-22/1/2022-IA-III [E- 172624] dt. 14th June 2022.

Respected Sir,

This has referenced to the ministry's above referenced Office Memorandum; we have been directed to submit the six-monthly compliance on the environmental conditions prescribed in the prior environmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login.

Accordingly, we are herewith uploading/submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance awarded to us vide ministry's letter Ref No: - **J-11015/86/2004-IA. II(M) DATED 13th Sep 2005** in respect of Joda West Iron and Manganese Mine of M/s Tata Steel for the period **from April'2023 to September'2023** for your kind perusal.

We believe the above submission is in order.

Thanking You

Yours Faithfully

F: Tata Steel

Mine & Production Planning
Joda West Iron & Manganese Mines
Ferro Alloys Mineral Division

TATA STEEL LTD.

Ferro Alloys & Minerals Division, Manganese Group of Mines, At/P.O.: Bichhakundi, Via: Joda,
Dist: Keonjhar Odisha – 758 034 Tel.: 9238101370, e-mail : mnminesadmin@tatasteel.com
Regd. Office : Bombay House, 24 Homi Modi Street, Mumbai – 400 001 Tel 912266658282, Fax 912266657724
Corporate Identity Number L27100MH1907PLC000260 website : www.tatasteel.com



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Ministry of Environment, Forest and Climate Change



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View Compliance Report at Project Proponent

Proposal Details

Proposal No

IA/OR/MIN/11664/2005

Category

Non-Coal Mining

Name of Project

Joda West Manganese Ore Mine of M/s Tata Steel, Dist. Keonjhar, State-Odisha (Production Capacity: 1.80 LTPA of Manganese Ore), ML Area 1437.719 Ha.

Plot / Survey/ Khasra No.

Village(s)

Sub-District(s)

State

ODISHA

District

KENDUJHAR

MoEF File No

No.J-11015/86/2004-IA.II(M)

**Name of the Entity/
Corporate Office**

Tata Steel

Entity's PAN

NA

Entity Name as per PAN

NA

Entity details mentioned above is correct ?

Agree

Project KML

[View on DSS](#)

Covering Letter

Covering Letter

[Click to View](#)

Compliance Reporting Details

Reporting Year

2023

Reporting Period

01 Dec(01 Apr - 30 Sep)

Remark(if any)

Six Monthly EC Compliance Report for Joda West Iron & Mn Mine Project Proponent: Tata Steel Limited Project Type: Mining (Opencast) Mineral: Manganese

Details of Production and Project Area

Date of Commencement of Project/Activity

01-04-1932

	Project Area as per EC Granted(ha.)	Actual Project Area in Possession(ha.)
Private	9.347	71.273
Revenue Land	229.029	119.894
Forest	1199.34	1246.55
Others	0	0
Total	1437.716	1437.7169999999999

PRODUCTION CAPACITY

Sr.No.	Name of the Product	Units	As per EC Granted	As per CTO Granted	CTO ID	Valid Up To	Production during last financial year
1	Manganese	Tons per Annum (TPA)	180000	180000	67	31-03-2026	164046

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents
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1	Statutory compliance	Mining shall not be undertaken in areas of forestland within the lease for which necessary approval/ forestry clearance has not been obtained.	PPs Submission	<p>Joda West Iron & Manganese Mine is presently operated for the production of Manganese Ore and consists of Mine Lease area (total) of 1437.719 ha. Out of which, forest land and non-forest land prevails over 1246.552 ha and 191.167 ha. respectively. The mine has been granted with Stage-II clearance/Final approval from the erstwhile Ministry of Environment & Forest, New Delhi vide Ministry's letter no. F.No.8-89/2004-FC, dt.10.08.2007 for the diversion of 436.678 ha of forest land falling within the mine lease area. It is pertinent to mention here that; Diversion Proposal for balance forest land of 809.874 ha has been applied and the same is under process. Presently, Mining is carried out in restricted manner within the extent of stage-II diverted area of 436.678 ha, non-forestland of 191.167 ha and some portions of the broken up forestland (broken up prior to 1980). Complied Attachment: NA</p>
2	WASTE MANAGEMENT	OB and other wastes should be stacked at earmarked sites only and should not be kept active for long periods of time. Plantation should be taken up for soil stabilization along the slopes of the dump and terraced after every 5-6 m of height and overall slope angle shall be maintained not exceeding 28°.	PPs Submission	<p>Mining and all its associated operational activities are ensured in line with the provisions of approved mining plan. Dedicated sites have been earmarked for storing overburden (OB) and other waste and/or minerals/ mineral rejects. The status thereof is updated in the surface plan on quarterly basis. The dump is terraced at every 5-6 mtrs and overall slope is maintained well within 28°. The dumps are stabilized by means of</p>

		<p>Sedimentation pits shall be constructed at the corners of the garland drains. Retention/toe walls shall be provided at the base of the dumps.</p>		<p>biological reclamation with the plantation of Vertiber grass on the slopes and native varieties of forestry saplings. Environmental Protection Measures ensured at site especially for the dump management aspects are as follows: 1. Network of Garland Drains and/or Toe Walls 2. Intermittent Sedimentation tanks/settling pits 3. Slope stabilization by means of coir matting and/or vertiber grass plantation 4. Final rehabilitation measures by means of native varieties of forestry saplings both on the slope and benches of the dump. Copy of latest updated surface plan is enclosed as a supporting document to substantiate. Complied Attachment: NA</p>
3	WATER QUALITY MONITORING AND PRESERVATION	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.</p>	PPs Submission	<p>The mine management regularly inspect the compliance w.r.t various provisions of progressive mine closure plan (PMCP) especially for the dump stabilization and surface runoff associated aspects. The status thereof is also filed in the form of PMCP returns annually to Indian Bureau of Mines for subsequent verification. The following measures at the mine level are ensured for adequate management of the silt and sediment flow associated environmental scenario for the OB, mineral dumps and other strategic locations such as: 1. Network of Garland Drains of size 2.5 mtr (Width) X 1.5 mtr (Depth) is constructed all along the periphery of dumps. 2. Series of check dams at strategic locations along the contour 3.</p>

Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.

Retention Wall (masonry walls) and/or Gabion walls of size 2m X 1m X 1m along the bottom of dump periphery 4. Coir matting using geotextile coirs are being used for slope protection measures against erosion. 5. Periodic de-siltation of the siltation tanks and check dams before the onset of monsoon every year. 6. Separate line for storm water is maintained with proper drainage facility and is ultimately channelized to RWH ponds. Photographs of dump management measures are enclosed together with a copy of latest Progressive Mine Closure Plan
Complied
Attachment: NA

4	WATER QUALITY MONITORING AND PRESERVATION	Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data.	PPs Submission	Dump management measures are ensured taking due account of the factors like catchment area for the specified locations, peak rainfall scenarios and past episodes relating to the heavy storm events/rainy events. Presently, following dimension is followed for the protective measures. 1. Garland Drains: 2.5mtr (Width) X 1.5 mtr (Depth) 2. Gabion Wall/Retention Wall: No of tiers (03), Base: 2.5mtr (width) X 1mtr (Height), Middle Layer: 2.0mtr (width) X 1mtr (Height), Top Layer: 1.5mtr (width) X 0.5 mtr (Height), 3. Check dam: varies with catchment area So far all the existing structures constructed at site are found to be adequately meeting to the requirement and all the design attributes are based on peak runoff potential
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				scenarios. Copy of latest PMCP return (indicating the extent of protective measures) are enclosed. Complied Attachment: NA
5	AIR QUALITY MONITORING AND PRESERVATION	Trace Metals such as Ni, Co, As and Hg should be analyzed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations of these metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.	PPs Submission	Trace metals like Ni, Co, As and Hg are monitored both in dust fall and soil samples on quarterly basis covering all the seasons. Environmental Monitoring activities are ensured by engaging an NABL accredited laboratory and also having requisite approval from the Ministry in this regard. Dust fall is analysed for locations like sorting yard, project office premises and Near Haul roads whereas soil samples from different land use locations such as OB dump, forestland, Parks & gardens and other areas like agricultural land (from peripheral villages) are analysed for at least 15-20 parameters including the nutrient profile attributes together with the heavy metals. So far no adverse results have been observed in both the types of monitoring results. An abstract of dust fall analysis carried out during year 2023 is enclosed. It is pertinent to mention here that both soil quality and dust fall analysis parameters are being monitored and forms an integral part of the Annual Environmental Monitoring Plan. Complied Attachment: Click to View

6	AIR QUALITY MONITORING AND PRESERVATION	Mineral and OB transportation shall be done in trucks/dumpers covered with tarpaulins. Vehicular emissions should be kept under control and regularly monitored. Suitable measures should be taken to check fugitive emissions from haulage roads, transfer points, etc.	PPs Submission	Mineral Transportation is ensured by by tippers and all the trucks are covered with tarpaulins before issuance of transit permits for their onward transportation. OB is handled within the mine lease area using shovel dumper combination. Following dust control measures are ensured for checking fugitive dust emissions: 1. Fixed Sprinkling System for the Haul Roads (existing 700 mtrs) 2. Mist Canons at dumps/sorting yards 3. Automatic Wheel wash facility at the exit point of the mines 4. Dust suppression by means of mobile water tanker (capacity 10KI) deployed for dumping yard and other locations. Complied Attachment: NA
7	GREENBELT	A green belt of should be raised around ML area (296.163 ha), along roads, OB dump sites (64.774 ha), township (21.242 ha) and in other areas within the lease (227.63 ha) covering a total area of not less than 409.809 ha by planting native species in consultation with local DFO/Agriculture department. The density of the trees should be around 2500 plants per ha.	PPs Submission	Plantation activities are ensured in accordance with the provisions of Progressive Mine Closure Plan (PMCP); Besides, Tata Steel Limited has developed a site specific biodiversity management plan for implementation of measures for protection and conservation of biodiversity in and around the mine. Accordingly, emphasis on the principles of restoration is ensured by following scientific plantation strategies with the help of mixed varieties of native (non-exotic) forestry saplings in the scheme of plantation. So far, around 112.99 hectares of area (including waste dump, safety zone, back filled area and avenue plantation zones) have

been covered under plantation with 505712 nos of saplings (approx.) . In the process of afforestation, the mine has ensured rehabilitation of around 43.260 hectares (Waste dump/OB dump) & 3.900 (Back filled area) where the saplings have attained self sustaining stage. t Besides, the mine management has also established a centralized nursery over an area of 2000 sq-mtr with a generation potential of around 1 lakh saplings/year within the lease area for promoting greenbelt/ afforestation related measures. Brief glimpses of Greenbelt and associated afforestation measures undertaken at mine level is enclosed as annexure to this section.
 Complied
 Attachment: [Click to View](#)

8	WATER QUALITY MONITORING AND PRESERVATION	Groundwater shall not be used for mine operations. Prior approval of CGWA shall be obtained for using groundwater.	<table border="1"> <tr> <td data-bbox="790 1142 965 2072">PPs Submission</td> <td data-bbox="965 1142 1380 2072"> No Ground water is being used for mining operation. More ever there is no wet beneficiation/processing units for which water would be required. Majorly, water is consumed for haul road dust suppression and irrigation purposes. Ground water is used for meeting domestic consumptions. Presently, mine draws around 80-85 KLD of ground water from 3-4 bore wells as against the permitted quantity of 146 KLD and since there is seepage evidenced for one of the quarries thus it's dewatering potential of 246KLD has been included in the purview of NOC granted by CGWA vide NOC no. CGWA/NOC/MIN/REN/2/2023/7840 which is valid till 22nd July 2024. Copy of the said NOC is enclosed. Complied Attachment: Click to View </td> </tr> </table>	PPs Submission	No Ground water is being used for mining operation. More ever there is no wet beneficiation/processing units for which water would be required. Majorly, water is consumed for haul road dust suppression and irrigation purposes. Ground water is used for meeting domestic consumptions. Presently, mine draws around 80-85 KLD of ground water from 3-4 bore wells as against the permitted quantity of 146 KLD and since there is seepage evidenced for one of the quarries thus it's dewatering potential of 246KLD has been included in the purview of NOC granted by CGWA vide NOC no. CGWA/NOC/MIN/REN/2/2023/7840 which is valid till 22nd July 2024. Copy of the said NOC is enclosed. Complied Attachment: Click to View
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9	MINING PLAN	Mining shall not intersect groundwater. Prior permission of the MOEF and CGWA shall be taken to mine below water table.	<table border="1"> <tr> <td data-bbox="807 73 963 1285">PPs Submission</td> <td data-bbox="963 73 1375 1285"> <p>Though the ultimate pit depth has not intercepted the regional ground water table however during the advancement of mining operation at Gangeiguda Quarry feeble seepage from one of its face (attributed to some localized aquifer) was encountered and accordingly a detailed hydrogeological investigation was carried out in this regard by engaging a CGWA accredited/empaneled agency i.e M/s Geoclimatic Risk Solution Pvt. Ltd. In line with the findings of the the Hydrogeological Investigations and ground water modelling studies, application for NOC was revised and applied for inclusion of mine seepage of 246 KLD into the purview NOC. The same was approved by Central Ground Water Authority and NOC in this regard was granted to Joda West vide NOC no. CGWA/NOC/MIN/REN/2/2023/7840 valid till 22nd July 2024 for a quantity of 146 KLD from bore wells and 246 KLD from mine seepage. Complied Attachment: Click to View</p> </td> </tr> </table>	PPs Submission	<p>Though the ultimate pit depth has not intercepted the regional ground water table however during the advancement of mining operation at Gangeiguda Quarry feeble seepage from one of its face (attributed to some localized aquifer) was encountered and accordingly a detailed hydrogeological investigation was carried out in this regard by engaging a CGWA accredited/empaneled agency i.e M/s Geoclimatic Risk Solution Pvt. Ltd. In line with the findings of the the Hydrogeological Investigations and ground water modelling studies, application for NOC was revised and applied for inclusion of mine seepage of 246 KLD into the purview NOC. The same was approved by Central Ground Water Authority and NOC in this regard was granted to Joda West vide NOC no. CGWA/NOC/MIN/REN/2/2023/7840 valid till 22nd July 2024 for a quantity of 146 KLD from bore wells and 246 KLD from mine seepage. Complied Attachment: Click to View</p>
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10	WATER QUALITY MONITORING AND PRESERVATION	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring should be done for quantity four times a year in pre-monsoon (April / May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of	<table border="1"> <tr> <td data-bbox="807 1285 1050 2157">PPs Submission</td> <td data-bbox="1050 1285 1375 2157"> <p>A network of open dug wells and bore wells have been identified for monitoring of GW level in and around the mines. Apart from this periodically an extensive survey for monitoring ground water level for peripheral wells for approx. 100 nos wells have been studied during 2022. Finding thereof has been presented before Central Ground Water Authority and no such adverse observations have been raised w.r.t GW level. A copy of the abstract of GW level and the detailed GW level records is enclosed herewith. Besides, a telemetric based piezometer has been</p> </td> </tr> </table>	PPs Submission	<p>A network of open dug wells and bore wells have been identified for monitoring of GW level in and around the mines. Apart from this periodically an extensive survey for monitoring ground water level for peripheral wells for approx. 100 nos wells have been studied during 2022. Finding thereof has been presented before Central Ground Water Authority and no such adverse observations have been raised w.r.t GW level. A copy of the abstract of GW level and the detailed GW level records is enclosed herewith. Besides, a telemetric based piezometer has been</p>
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		Environment & Forest and the Central Ground Water Authority quarterly.		installed within the mine lease and data on real-time basis is monitored and credentials of the telemetry system has been shared with CGWA for remote surveillance purpose. Complied Attachment: Click to View
11	WATER QUALITY MONITORING AND PRESERVATION	Trace metals such as Fe, Cr+6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.	PPs Submission	Environmental Quality Parameters are monitored by engaging an NABL accredited agency having it's laboratory recognized by MoEF&CC. Water Quality parameters are regularly tested for both surface water and ground water. Monitoring reports are submitted to SPCB from time to time. So far from the water quality analysis result of both surface and ground water attributes, no such adverse impacts has been observed when compared with applicable permissible limits/standards prescribed. An abstract of water quality assessment for April'23 to Sep'23 is enclosed herewith. Complied Attachment: Click to View
12	Statutory compliance	"Consent to Operate" should be obtained from SPCB before expanding mining activities.	PPs Submission	Consent To Operate (CTO) has been obtained by the mine as applicable for production of of Manganese Ore for 1.80 LTPA (0.18 MTPA) and operation of a stationary screening plant of 1X70 TPH. The same is renewed from time to time. The present CTO is valid till 31-March 2026. A copy of the valid CTO as issued from State Pollution Control Board Odisha is enclosed. Ref. CTO No. 67 issued vide OSPCB's letter no. 4234/IND-I-CON-186 dtd

				17-03-2022. Complied Attachment: Click to View
13	Statutory compliance	<p>A plan for conservation Plan for conservation of endangered fauna including the Indian Elephant found in and around the mine area shall be prepared and implemented in consultation with identified agencies/institutions and with the State Forest Department. The Plan should be dovetailed with that prepared/under implementation/ proposed for the endangered fauna found in the Reserve Forest in the buffer zone of the project site. The costs for the specific activities/tasks should be earmarked in the Conservation Plan and shall not be diverted for any other purpose. Year-wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & forests, RO, Bhubaneswar.</p>	PPs Submission	<p>A Site Specific Wildlife Management Plan has been approved by state forest department vide its Memo no. 7726/1WL-SSP-93/2015 dated 31st Aug 2015 which is valid for a period of ten years. Besides, a regional wild life conservation plan has been prepared by the state forest department for Bonai & Keonjhar divisions for a holistic management of wildlife conservation issues and towards the implementation cost, Tata Steel Limited in respect of Joda West Iron & Mn Mine has deposited/contributed the fund as assessed by the Divisional Forest Officer. Details of the payment deposited as per the demand letter issued is as follows: 1. Rs. 56,30,000/- dt. 05.07.2006 2. Rs. 2,31,24,380/- dt. 07.09.2011 3. Rs 3,30,67,537- dt. 19.05.2015 Apart from this the mine management has also deposited an amount of Rs. 9,79,48,000/- on 12.12.2017 towards implementation of Site Specific Wild Life Conservation Plan (SSWLCP). A copy of the approved site specific wildlife conservation plan is enclosed herewith. Complied Attachment: NA</p>
14	MINING PLAN	<p>A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in</p>	PPs Submission	<p>A Final Mine Closure Plan (FMCP) shall be prepared in accordance with the provisions laid down under the "GUIDELINES FOR PREPARATION OF FINAL MINE CLOSURE PLANS" as</p>

		advance of final mine closure for approval.		prescribed by Indian Bureau of Mines. As per the provisions of MMDR Act, the FMCP (final mine closure plan) shall be verified for its effective implementation of before abandonment of a mine and requisite certificate from the authorized officer, as the case may be, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or with such modifications as approved by the competent authority have been carried out before abandonment of mine is prepared. The final mine closure plan along with details of Corpus fund/financial assurance amount as assessed by IBM shall be intimated to the Ministry of Environment & Forests in advance of final mine closure for approval. So far, Joda west has deposited a sum of Rs.Rs. 30.5990 Cr. in the form of bank guarantee towards financial assurance for implementation of the provisions thereof. Agreed to Comply Attachment: NA
15	GREENBELT	Topsoil should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out area.	PPs Submission	Top soil generation and its utilization is a concurrent activity. As mining advances towards virgin land/ fresh forest land, top soil is encountered which is recovered and stored at earmarked sites. However due to space constraints practice of utilising teh top soil in concurrent reclamation and rehabilitation is followed to prevent loss of nutrient potential in the coarse of storing. However during intermittent storage of top

soil at site it is ensured that top layer is provided with either coir mats and/or grassing and peripheral drainage system is provided for arresting the eroded soil. Following measures are ensured at site for the top soil management: 1. Collection and storage of top soil at earmarked site(s) 2. Assessment of top soil for nutrient potential parameters such as pH, EC, CEC, OC, and N, P, K, etc. 3. Grassing as per feasibility if required 4. Accounting of utilization of top soil in the plantation. It is pertinent to mention here that since mining at present is carried out in restricted manner within 436.678 ha out of ml area of 1437.719 ha thus no top soil was generated (no virgin land was taken up for mining) during the reporting period.
Complied
Attachment: NA

General Conditions

Sr.No.	Condition Heading	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	MINING PLAN	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	PPs Submission	So far, Mining is carried out as proposed by using shovel-dumper combination. No wet beneficiation process being carried out in the project. Dry stationary screening with the help of a 1X70 TPH screen plant is operated. However, mine has envisaged production of Iron Ore into his production scope and approval from the ministry is being sought for the same

with the expansion plan. Application has been made to Ministry under EIA Notification, 2006 provisions and amendment thereof. Terms of Reference has been granted for the conduct of public hearing and preparation of draft EIA/EMP report. Public hearing for the said expansion plan has also been carried out. However till final approval (EC) is not granted no change to the existing mining (technology/method) shall be followed.
Complied
Attachment: NA

2	MINING PLAN	No change in the calendar plan including excavation, quantum of manganese ore and waste should be made.	PPs Submission	Production and excavation quantum is regulated by the Mine Plan approved by Indian bureau of Mines (IBM). No change in the calendar plan has been made. Total annual production achieved from the mine is well within the EC limit of 1.80 Lakh Tonnes per annum. This is in compliance with Ministry's OM dtd. 14th May 2020 regarding flexibility in production irrespective of calendar plan. Annual production of the mine has been duly certified by Dy. Director of Mines and it is confirmed that production is well within the EC limit. DDM certified production Report is enclosed herewith. Complied
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				Attachment: Click to View
3	AIR QUALITY MONITORING AND PRESERVATION	<p>Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO₂, NO_x & CO monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data on ambient air quality (RPM, SPM, SO₂, NO_x & CO) should be regularly submitted to the Ministry including its regional office at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.</p>	PPs Submission	<p>Ambient Air Quality is monitored by establishing a network of 04 nos of dedicated AAQ stations within the core zone. The monitoring locations were established in consultation with Regional Office, State Pollution Control Board (Keonjhar Region). Photographs of fixed type platforms properly geotagged with the spatial coordinates have been shared with State Pollution Control Board and the same was accepted to SPCB during renewal of CTO. Ambient Air Quality parameters are monitored on weekly basis (twice in a week) for both core and buffer zone. Abstract of Ambient Air Quality monitoring result for the period during April'23 to Sep'23 is enclosed herewith. Complied Attachment: Click to View</p>
4	AIR QUALITY MONITORING AND PRESERVATION	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	PPs Submission	<p>Wet drilling concept is already in place and practiced. Exploratory drills have been provided with inbuilt DE system. Controlled blasting technique with NONEL is in practice. Blasting parameters are assessed periodically by engaging agency like CIMFR, Dhanbad. Latest report on the control blasting is enclosed herewith.</p>

				Complied Attachment: Click to View
5	AIR QUALITY MONITORING AND PRESERVATION	Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/trucks, loading & unloading points should be provided and properly maintained.	PPs Submission	All the dust prone areas are adequately sprinkled by mobile sprinklers. Additionally, the mine management has also installed fixed-type water sprinklers along haul road at D-Quarry over 700 mtrs and the same is reviewed for expansion into the H-Quarry also. Following measures are ensured for containment of fugitive dust emission: 1. Mobile water tanker (cap-10KI) for Haul Roads and Dump yards and other locations) 2. Mist Canons (30 LPH) for sorting yards and screening plants 3. Fixed Sprinkling system for static haul roads (D-Quarry): 700 mtrs 4. Automatic Wheel wash facility at Railway Siding and exit point of the mines 5. Misting arrangement at the screen plants. Photographs reflecting the status of pollution control measures (fugitive dust) deployed at the mine is enclosed herewith. Complied Attachment: Click to View
6	Noise Monitoring & Prevention	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and	PPs Submission	Ear plugs & Ear muffs are provided to the workers working in mining operation & DG operations and other high noise generating equipment's. Beside, Provision of acoustic

drilling operations, operations of HEMM, etc. should be provided with ear plugs/ muffs.

enclosures are invariably ensured before the installation of such noise generating instruments. Besides, following monitoring measures are also ensured for the regulation of noise pollution associated impacts: 1. Monitoring of Noise level (both ambient noise survey) and work place noise survey is carried out on monthly basis using an integrated sound level meter. 2. Occupational Noise Exposure assessment is also carried out for the persons engaged in high noise generating areas on quarterly basis by sampling individual workers over eight hour durations. Photographs of Noise Monitoring (Ambient and Occupational Noise Exposure Assessment) is enclosed herewith. Complied
Attachment: [Click to View](#)

7

WATER QUALITY MONITORING AND PRESERVATION

Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed

PPs Submission

For effective management of effluent following mitigative measures are ensured at the mine level: 1. Effluents from Workshop/Garage: Vehicle washing system and associated operational activities are provided with separate catchment drains and finally the effluents are collected in Oil-Water Separation system having skimming

before discharge of workshop effluents.

arrangements for oil and grease 2. Waste water/runoff collected from the mine pits: Since there is no wet process thus no waste water is generated at any stage from any process however surface runoff accumulated in the mine pit is dewatered and collected Rain Water Reservoir/harvesting ponds. After adequate retention period, the same is fed to water treatment plant for final treatment. A new water treatment plant of 400 KLD capacity has been constructed within the lease area for water treatment process. Periodically water samples from WTP and mine pits and oil-water separation system are collected and analysed by an NABL accredited agency for checking compliance w.r.t applicable standards. Complied
Attachment: [Click to View](#)

8

MISCELLANEOUS

Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

PPs Submission

Environmental Monitoring services are carried out by engaging an NABL Accredited agency having it's laboratory recognized by Ministry of Environment, Forest & Climate Change. Though no captive laboratory has been established at site but the entire services is outsourced to the third party with the following provisions. A centralized contract to

				<p>third party is placed for three manganese mines of the company. Mode of Contract is as follows: Period of Contract: 03 years (renewed every three years) Scope of Contract: Establishment of an onsite laboratory with facilities for parameters like BOD, COD, all titrimetric parameters, Uv-VIS spectrophotometer, Weather Stations on real-time basis, In-situ water testing Kit, pH meter, Turbidity meter, EC meter, Noise meter, CO analysers, portable dust samplers, noise meters, etc. Scope for Services: Sampling , analysis and reporting Manpower: Around 10 personnel's dedicated for field sampling and 05 personnel for onsite laboratory analysis purpose. The laboratory extends services to three mines namely Joda West Iron & Mn Mine, Bamebari Iron & Mn Mine and Tiringpahar Iron & Mn Mine being operated under the same management control. A copy of PO is enclosed herewith. Complied Attachment: NA</p>
9	Human Health Environment	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	PPs Submission	Personnel Protective Equipment's (PPEs) are being mandatorily used by all the workers as per applicability. It is regularly ensured at the entry points. Safe Operating Procedure based training is imparted to all the workers apart from the

aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

initial VT training. Periodical Medical Examination of employees (departmental & contractual) are conducted as per prescribed norms of Mines Rule, 1955. The initial and periodical examination includes blood haematology, blood pressure, detailed cardiovascular assessment, neurological examination etc. All chest radiographs are being classified for detection of pneumoconiosis, diagnosis and documentation made in accordance to ILO classifications. Besides, Occupational health surveillance assessment as mentioned below are also carried out: 1. Personal Dust Sampling & Free Silica exposure assessment by a DGMS approved agency. 2. Hand-Arm Vibration & Whole Body Vibration Exposure Assessment report by a DGMS approved laboratory 3. Mn Poisoning test (periodic) by a medical laboratory A sample of vibration exposure assessment carried out in the past is enclosed herewith. Complied Attachment: [Click to View](#)

10	MISCELLANEOUS	A separate environmental management cell with suitable qualified personnel should	PPs Submission	The company has made a robust arrangement for reviewing and monitoring the implementation of
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		be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.		Environment management plan by Centralized Environmental Management Department, headed by the Chief, Environment and supporting staff. The operation and legal sections include Head, Mine & Production Planning, Head, Environment, Senior Manager - Mine Planning, Senior Manager - Environment, Environment Engineer, Chemists, etc. Complied Attachment: Click to View
11	MISCELLANEOUS	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	PPs Submission	A dedicated cost Centre for maintaining all environmental expenditure is maintained in a separate GL account having a unique cost center mapped in the SAP system. All sorts of environmental protection related expenditures are booked in the said cost center for accounting purpose. Complied Attachment: NA

12	Statutory compliance	The Regional Office of this Ministry located at Bhubaneswar 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.	PPs Submission	All necessary cooperation is extended to all the Govt officials/authorities during their inspection at site and shall be continued in future as well. Complied Attachment: NA
13	PUBLIC HEARING	A copy of clearance letter will be marked to the concerned Panchayat/local NGO, if any, from whom suggestion/representation has been received while processing the proposal.	PPs Submission	Copy of the clearance letter have been marked to Chairman, Municipal Council, Joda on 12.01.2006 and also a copy was placed on the Notice Board for public viewing purpose. Complied Attachment: NA
14	MISCELLANEOUS	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	PPs Submission	The action was required to be ensured by the State Pollution Control Board. Complied Attachment: NA
15	MISCELLANEOUS	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the issue of the	PPs Submission	A copy of Environmental Clearance with regard to Joda West Manganese Mine was published in Oriya News Papers Dharitri & Sambad on 17.10.2005. Complied Attachment: NA

clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Website of the Ministry of Environment & Forests at <http://envfor.nic.in>. and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

Document uploaded by the PP

Last Site Visit Report (if available)

NA

Last Site Visit Report Date (if available)

Additional Attachment (if any)

NA

Additional Remarks (if any)

- I '[Tata Steel](#)' hereby give undertaking that the data and information given in the filed compliance and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the clearance given to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity such as change in project layout, construction, expansion, etc. has been taken up without due approval.

Cover Letter From RO/SRO

Cover Letter From RO/SRO

NA

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