Ref. No: FAMD/FAPB/030 /FY25 Date: 30.05.2025

**Additional Principal Chief Conservator of Forests (C),**
**Ministry of Environment, Forest and Climate Change,**
**Regional Office (EZ),**
**A/3, Chandrasekharpur,**
**Bhubaneswar -751023**

**Sub:** Submission of Six-monthly compliance report on Implementation of Environmental safeguard of Ferro Alloy Plant, Bamnipal, for the period from Oct'2024 to Mar'2025

**Ref:** Ministry of Environment and Forests Letter NO: J-1101/10/2007-IAII (I), dated 07.05.2007

**Dear Sir,**
We are herewith submitting the six-monthly compliance report in respect of the stipulated environmental clearance conditions of Ferro Alloy Plant, Bamnipal, for the period from Oct'2024 to Mar'2025 as per EIA Notification, 2006.

This is in reference to the MoEF&CC's notification vide S.O-5845, dt. 28th Nov 2018, the six-monthly compliance report is being submitted only in soft copy mode, shared with your good office over e-mail @ roez.bsr-mef@nic.in and is being uploaded in Parivesh portal.

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

Thanking You,

Yours Faithfully

Head(Ferro Alloys Production)
TATA STEEL LIMITED
Ferro Alloy Plant,Baminipal
Keonjhar,Odisha,Pin-758082

HEAD (FA Production)
FAP, Bamnipal
M/s Tata Steel Ltd.

**Copy to:**

1. The Director, Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi-110 003
2. The Regional Directorate, Central Pollution Control Board, 'South end Conclave' Block-502, 5th & 6th Floor, 1582, Razidanga, Main Road, Kolkata- 700107
3. Member Secretary, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Bhubaneswar, 751012.

| Your (Half Yearly Compliance Report) has been Submitted with following details | |
|---|---|
| **Proposal No** | IA/OR/IND/2129/2007 |
| **Compliance ID** | 128705602 |
| **Compliance Number(For Tracking)** | EC/M/COMPLIANCE/128705602/2025 |
| **Reporting Year** | 2025 |
| **Reporting Period** | 01 Jun(01 Oct - 31 Mar) |
| **Submission Date** | 30-05-2025 |
| **RO/SRO Name** | Shri Senthil Kumar Sampath |
| **RO/SRO Email** | agmu156@ifs.nic.in |
| **State** | ODISHA |
| **RO/SRO Office Address** | Integrated Regional Offices, Bhubaneswar |
| **Note:-** SMS and E-Mail has been sent to Shri Senthil Kumar Sampath, ODISHA with Notification to Project Proponent. | |

**Half Yearly Compliance Report**
**2025**
**01 Jun(01 Oct - 31 Mar)**

# Acknowledgement

| | |
|---|---|
| **Proposal Name** | Expansion of Ferro Chrome Plant (50000 to 100000TPA) and coal based Captive Power Plant (60 MW) in Ferro Alloy Plant at Brahmanipal, Ghatgaon, Keonjhar, Orissa by M/s Tata Steel Limited |
| **Name of Entity / Corporate Office** | Tata Steel Limited |
| **Village(s)** | N/A |
| **District** | KENDUJHAR |

| | |
|---|---|
| **Proposal No.** | IA/OR/IND/2129/2007 |
| **Plot / Survey / Khasra No.** | N/A |
| **State** | ODISHA |
| **MoEF File No.** | J-11011/10/2007-IA.II(I) |

| | |
|---|---|
| **Category** | Industrial Projects - 1 |
| **Sub-District** | N/A |
| **Entity's PAN** | *****2803M |
| **Entity name as per PAN** | UTSAV KASHYAP |

## Compliance Reporting Details

| | |
|---|---|
| **Reporting Year** | 2025 |
| **Remarks (if any)** | Submission of Half Yearly EC Compliance for a period of October 2024 to March 2025 in details as below. |
| **Reporting Period** | 01 Jun(01 Oct - 31 Mar) |

## Details of Production and Project Area

**Name of Entity / Corporate Office** Tata Steel Limited

| | Project Area as per EC Granted | Actual Project Area in Possession |
|---|---|---|
| Private | 71.719 | 71.719 |
| Revenue Land | 0 | 0 |
| Forest | 39.72 | 39.72 |
| Others | 0 | 0 |
| Total | 111.439 | 111.439 |

## Production Capacity

| Sr. no | Product Name | units | Valid Upto | Capacity | Production last year | Capacity as per CTO |
|---|---|---|---|---|---|---|
| 1 | High Carbon Ferro Chrome | Tons per Annum (TPA) | 31/03/2026 | 100000 | 18078 | 65000 |

## Conditions

### Specific Conditions

| Sr.No. | Condition Type | Condition Details |
|---|---|---|
| 1 | AIR QUALITY MONITORING AND PRESERVATION | The gaseous emissions from various process units shall confirm to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. |
| **PPs Submission:** Complied<br>Existing plant emission level is within the permissible limit. Guidelines/codes of practice issued by CPCB are followed. Monthly reports are sent to SPCB, Bhubaneswar and Regional office, Keonjhar. | | Date: 30/05/2025 |
| 2 | AIR QUALITY MONITORING AND PRESERVATION | Continuous stack monitoring facilities for all the major stacks and adequate air pollution control systems shall be provided to keep emission levels below 50 mg/Nm3 and reports submitted to the OSPCB and CPCB. |
| **PPs Submission:** Complied<br>As per the OSPCB consent order the prescribed emission standard for stack attached to Arc furnace and GFPS is only for PM i.e. 100 mg/ Nm3. Monthly reports are sent to SPCB, Bhubaneswar and Regional office, Keonjhar. | | Date: 30/05/2025 |
| 3 | ENERGY PRESERVATION MEASURES | In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fume and dust extraction system with bag filters shall be provided at the transfer and discharge points to control fugitive emissions. Pneumatic ash conveying system and storage silos shall be used for dust transfer to silos. ESP shall be provided to the Captive Power Plant (CPP) to control air emissions to 100mg/Nm3. Further, specific measures like water sprinkling around the coal stockpiles and asphalting or concreting of the roads shall be done to control fugitive emissions. |
| **PPs Submission:** Complied<br>However, for the control of dust and fugitive emission from the existing ferro-chrome plant, dust extraction system with bag filters have been provided at GFPS (Grinding, Filtering, pelletizing and sintering) transfer and discharge points to control fugitive emissions. Water spraying arrangement in haul road and auto water sprinkling system installed at raw material store yard and weigh bridge area. DFDS (Dry Fog Dust Suppression) System and 3 Nos high velocity mist canon has been installed at dust generating sources like conveyor belt, skip hoist, pellet screen, vibrating feeder. Control measures have also been installed in existing plant for checking fugitive emissions from all the vulnerable sources. | | Date: 30/05/2025 |
| 4 | AIR QUALITY MONITORING AND PRESERVATION | Secondary fugitive emissions shall be controlled within the prescribed limits, regularly monitored and records maintained. Guideline / Code of practice issued by the CPCB in this regard shall be followed. |
| **PPs Submission:** Complied<br>Suitable dust control measures have been provided to control the secondary fugitive emissions within the prescribed limits. Regular monitoring of work zone AAQ is being carried out and the report is being submitted to OSPCB on monthly basis. | | Date: 30/05/2025 |
| 5 | WATER QUALITY | Total requirement of the water from Remal Dam and Kusei River |

| | | |
|---|---|---|
| | MONITORING AND PRESERVATION | shall not exceed 4416 m3/day and 7584 m3/day respectively as per the permission accorded by the Department of Water Resources, Govt. of Orissa. All the 3640 m3/day treated effluent shall be used for dust suppression and green belt development after treatment for total suspended solids (TSS) and pH. Domestic wastewater shall be treated in Sewage Treatment Plant (STP). No waste water shall be discharged outside the factory premises and Zero discharge shall be adopted. |
| **PPs Submission:** Complied<br>The water requirement for existing plant is 1750 KLD, and is well below the above permissible limit. Also Zero Effluent Discharge concept has been adopted for the plant. | | Date: 30/05/2025 |
| 6 | WASTE MANAGEMENT | All the solid waste including process slag, SAF flue dust, raw material fines, product fines, ash, raw water treatment slurry and ETP sludge shall be properly disposed of. Fly ash and granulated slag shall be provided to the cement manufacturing units for further use. Hexavalent Chromium present in the slag shall be converted to trivalent chromium. Ferro-chrome shall be stored in secured landfill as per the CPCB guidelines. Bottom ash shall be disposed of in a suitably designed landfill as per CPCB guide line to prevent leaching to the sub-oil and underground aquifer. STP sludge after drying shall be used as fertilizer for green belt development. Used oil shall be sold to recyclers and pre-processors. |
| **PPs Submission:** Complied<br>we are complying with the OSPCB norms for the disposal of all solid wastes. | | Date: 30/05/2025 |
| 7 | WASTE MANAGEMENT | SAF slag shall not be dumped but reused as per the alternate action plan submitted to the Ministry. Product fines and flue dust shall not be dumped anywhere but reused in the process. |
| **PPs Submission:** Complied<br>SAF hard slag is used for Back filling and land levelling activities in Tata Steel Kalinganagar Projects and Road Making from Duburi to Chandikhol NHAI Projects. CPP project. | | Date: 30/05/2025 |
| 8 | WATER QUALITY MONITORING AND PRESERVATION | The company shall develop rainwater harvesting structures to harvest the rainwater for utilization in the lean season besides recharging the ground water table. |
| **PPs Submission:** Complied<br>Rainwater harvesting pond has been developed and feasibility test has been undergone for ground water recharging and strengthening rainwater harvesting. | | Date: 30/05/2025 |
| 9 | LAND RECLAMATION | Out of total 71.719 ha. Green belt shall be developed in 40 ha within and around the plant premises as per the CPCB guidelines in consultation with DFO besides compensatory afforestation in 39.72 ha in lieu of forest land acquired. |
| **PPs Submission:** Complied<br>Green belt has been developed within and around the existing ferro-chrome plant premises. | | Date: 30/05/2025 |
| 10 | Human Health Environment | Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. |
| **PPs Submission:** Complied<br>Periodic medical check-ups are conducted yearly and the records are being maintained as per Factories Act. | | Date: 30/05/2025 |

| | | |
|---|---|---|
| 11 | Statutory compliance | Recommendations made in the CREP guidelines issued for Ferro chrome plants shall be implemented. |

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| **PPs Submission:** Complied<br>CREP (Corporate Responsibility for Environmental Protection) recommendations have been implemented. | Date: 30/05/2025 |

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|---|---|---|
| 12 | MISCELLANEOUS | No construction activities at the 39.72 ha forest land shall start without prior approval under Forest (Conservation) Act, 1980 and subsequent amendments. |

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|---|---|
| **PPs Submission:** Complied<br>Before starting the construction activity at 39.72 forest lands (proposed to be acquired for the project), prior approval will be taken. | Date: 30/05/2025 |

| | | |
|---|---|---|
| 13 | GREENBELT | Comments/observations of the Chief Wildlife Warden/State Forest Department shall be obtained regarding impact of the proposed expansion plant on the Rebana RF, Daitari RF, Tamka RF, Mahagiri RF which are located around the project site and all the recommendations should be implemented in time bound manner. |

| | |
|---|---|
| **PPs Submission:** Complied<br>Comments/observations of the Chief Wildlife Warden/State Forest Department will be made available and will be implemented in time. | Date: 30/05/2025 |

## General Conditions

| Sr.No. | Condition Type | Condition Details |
|---|---|---|
| 1 | Statutory compliance | The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OSPCB) and the State Government. |

| | |
|---|---|
| **PPs Submission:** Complied<br>All the stipulations made by the Odisha Pollution Control Board and the State Government are strictly followed for existing facility. | Date: 30/05/2025 |

| | | |
|---|---|---|
| 2 | Statutory compliance | No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests. |

| | |
|---|---|
| **PPs Submission:** Complied<br>No expansion or modifications in the plant is carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC). | Date: 30/05/2025 |

| | | |
|---|---|---|
| 3 | AIR QUALITY MONITORING AND PRESERVATION | At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO2 and NOx are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the OSPCB/CPCB once in six months. |

| | |
|---|---|
| **PPs Submission:** Complied<br>The monitoring of the air quality has been conducted twice in a week in core zone as per CPCB guidelines and monthly monitoring is being done at 3 locations in buffer zone. The air quality analysis report is submitted to OSPCB on monthly basis. | Date: 30/05/2025 |

| | | |
|---|---|---|
| 4 | WATER QUALITY | Industrial wastewater shall be properly collected, treated so as to |

| | | |
|---|---|---|
| | MONITORING AND PRESERVATION | conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose. |
| **PPs Submission:** Complied<br>For existing process industrial wastewater is being collected in settling pond. After two stages of settlement the overflow water is being recycled completely without discharging outside. The waste water generated from venturi scrubber is being treated in the thickener and the sludge is being conveyed to an impervious lined pond in the form of slurry for settlement. The overflow water of the sludge pond is being recycled back to the process without discharging outside. | | Date: 30/05/2025 |
| 5 | Noise Monitoring & Prevention | The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise level should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (night-time). |
| **PPs Submission:** Complied<br>The overall noise levels in and around the plant area is being maintained within the standards (85 dBA) by providing noise control measures such as acoustic hoods, silencers, enclosures etc. on all sources of noise generation. | | Date: 30/05/2025 |
| 6 | Corporate Environmental Responsibility | The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. |
| **PPs Submission:** Complied<br>The socio-economic, development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. are being taken care of by our TSF team (CSR team). | | Date: 30/05/2025 |
| 7 | MISCELLANEOUS | As mentioned in the EIA/EMP, Rs.25.44 Crores and Rs.3.26 Crores shall be earmarked towards capital cost and recurring cost/annum to control pollution and shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose. |
| **PPs Submission:** Complied<br>The proposed expansion project construction not yet started and it is realized that the construction of proposed project activity have not been carried out during the validity period (as per the EIA notification J-11011/10/2007-IA II(I) dated 07.05.2007) thus we shall obtain fresh approval from the ministry as per the provision EPA 1986 if the management envisages to undertake the said expansion in future and Will strictly adhere the EIA/EMP report. | | Date: 30/05/2025 |
| 8 | Statutory compliance | The Regional Office of this Ministry at Bhubaneswar/CPCB/OSPCB shall monitor the stipulated conditions. A six-monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly. |
| **PPs Submission:** Complied<br>The half yearly EC compliance report along with monitored data is being submitted on Parivesh portal. | | Date: 30/05/2025 |
| 9 | MISCELLANEOUS | The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of |

| | | |
|---|---|---|
| | | the clearance letter are available with the OSPCB/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office at Bhubaneswar. |

| | |
|---|---|
| **PPs Submission:** Complied<br>News was published in two local newspapers (The Samaja, The Indian Express) about the grant of EC. These two newspapers are widely circulated in the region of locality concerned in the vernacular language, a copy of the same forwarded to the Regional Office at Bhubaneswar. | Date: 30/05/2025 |

| | | |
|---|---|---|
| 10 | MISCELLANEOUS | Project authorities 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 and the date of commencing the land development work |

| | |
|---|---|
| **PPs Submission:** Complied<br>The proposed expansion project construction not yet started and it is realized that the construction of proposed project activity has not been carried out during the validity period (as per the EIA notification J-11011/10/2007-IA II(I) dated 07.05.2007) thus we shall obtain fresh approval from the ministry as per the provision EPA 1986 if the management envisages to undertake the said expansion in future | Date: 30/05/2025 |

## Visit Remarks

| | |
|---|---|
| **Last Site Visit Report Date:** | N/A |
| **Additional Remarks:** | |

**Note:** This acknowledgement is as per the details submitted by project proponent. In no way is this document to be considered as conclusion on any action on the compliance of the project. This is strictly for the project proponent's reference purpose.

# Half -Yearly Compliance Report

**On**

**Name of the Project**: Ferro Alloys Plant, Bamnipal of M/s Tata Steel Limited

## Environmental Clearance Conditions

(MoEF LETTER NO. - J-11011/10/2007-A.II(I), DATED- 07th May 2017, ISSUED BY GOVT. OF INDIA, MINISTRY OF ENVIRONMENT &FOREST, NEW DELHI)

## Period: Oct'2024 to Mar'2025

## Submitted By:

**Ferro Alloys Plant, Bamnipal**
Of M/s Tata Steel Limited
P.O- Bamnipal, Dist. Keonjhar
Odisha- 758082

## SPECIFIC CONDITION:

| Sl. No. | Specific Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| I | The gaseous emissions from various process units shall confirm to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. | **Complied.** Existing plant emission level is within the permissible limit. Guidelines/codes of practice issued by CPCB are followed. Monthly reports are sent to SPCB, Bhubaneswar and Regional office, Keonjhar. |
| II | Continuous stack monitoring facilities for all the major stacks and adequate air pollution control systems shall be provided to keep emission levels below 50 mg/Nm3 and reports submitted to the OSPCB & CPCB. | **Complied.** As per the OSPCB consent order the prescribed emission standard for stack attached to Arc furnace and GFPS is only for PM i.e. 100 mg/ Nm3. Monthly reports are sent to SPCB, Bhubaneswar and Regional office, Keonjhar. |
| III | In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fume and dust extraction system with bag filters shall be provided at the transfer and discharge points to control fugitive emissions. Pneumatic ash conveying system and storage silos shall be used for dust transfer to silos. ESP shall be provided to the Captive Power Plant (CPP) to control air emissions to 100mg/Nm3. Further, specific measures like water sprinkling around the coal stockpiles and asphalting or concreting of the roads shall be done to control fugitive emissions. | **Complied**. However, for the control of dust and fugitive emission from the existing ferro-chrome plant, dust extraction system with bag filters have been provided at GFPS (Grinding, Filtering, pelletizing and sintering) transfer and discharge points to control fugitive emissions. Water spraying arrangement in haul road and auto water sprinkling system installed at raw material store yard and weigh bridge area. DFDS (Dry Fog Dust Suppression) System and 3 Nos high velocity mist canon has been installed at dust generating sources like conveyor belt, skip hoist, pellet screen, vibrating feeder. Control measures have also been installed in existing plant for checking fugitive emissions from all the vulnerable sources. |
| IV | Secondary fugitive emissions shall be controlled within the prescribed limits, regularly monitored and records maintained. Guideline / Code of practice issued by the CPCB in this regard shall be followed. | **Complied.** Suitable dust control measures have been provided to control the secondary fugitive emissions within the prescribed limits. Regular monitoring of work zone AAQ is being carried out and the report is being submitted to OSPCB on monthly basis. |

| Sl. No. | Specific Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| V | Total requirement of the water from Remal Dam and Kusei River shall not exceed 4416 m3/day and 7584 m3/day respectively as per the permission accorded by the Department of Water Resources, Govt. of Orissa. All the 3640 m3/day treated effluent shall be used for dust suppression and green belt development after treatment for total suspended solids (TSS) and pH. Domestic wastewater shall be treated in Sewage Treatment Plant (STP). No waste water shall be discharged outside the factory premises and 'Zero' discharge shall be adopted. | **Complied.**<br>The water requirement for existing plant is 1750 KLD, and is well below the above permissible limit. Also Zero Effluent Discharge concept has been adopted for the plant. |
| VI | All the solid waste including process slag, SAF flue dust, raw material fines, product fines, ash, raw water treatment slurry and ETP sludge shall be properly disposed of. Fly ash and granulated slag shall be provided to the cement manufacturing units for further use. Hexavalent Chromium present in the slag shall be converted to trivalent chromium. Ferro-chrome shall be stored in secured landfill as per the CPCB guidelines. Bottom ash shall be disposed of in a suitably designed landfill as per CPCB guide line to prevent leaching to the sub-oil and underground aquifer. STP sludge after drying shall be used as fertilizer for green belt development. Used oil shall be sold to recyclers and pre-processors. | **Complied.**<br>we are complying with the OSPCB norms for the disposal of all solid wastes. |
| VII | SAF slag shall not be dumped but reused as per the alternate action plan submitted to the Ministry. Product fines and flue dust shall not be dumped anywhere but reused in the process. | **Complied.**<br>SAF hard slag is used for Back filling and land levelling activities in Tata Steel Kalinganagar Projects and Road Making from Duburi to Chandikhol NHAI Projects. CPP project. |
| VIII | The company shall develop rainwater harvesting structures to harvest the rainwater for utilization in the lean season besides recharging the ground water table. | **Complied.**<br>Rainwater harvesting pond has been developed and feasibility test has been undergone for ground water recharging and strengthening rainwater harvesting. |

| Sl. No. | Specific Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| IX | Out of total 71.719 ha. Green belt shall be developed in 40 ha within and around the plant premises as per the CPCB guidelines in consultation with DFO besides compensatory afforestation in 39.72 ha in lieu of forest land acquired. | **Complied.** Green belt has been developed within and around the existing ferro-chrome plant premises. |
| X | Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. | **Complied.** Periodic medical check-ups are conducted yearly and the records are being maintained as per Factories Act. |
| XI | Recommendations made in the CREP guidelines issued for Ferro chrome plants shall be implemented. | **Complied.** CREP (Corporate Responsibility for Environmental Protection) recommendations have been implemented. |
| XII | No construction activities at the 39.72 ha forest land shall start without prior approval under Forest (Conservation) Act, 1980 and subsequent amendments. | **Complied.** Before starting the construction activity at 39.72 forest lands (proposed to be acquired for the project), prior approval will be taken. |
| XIII | Comments/observations of the Chief Wildlife Warden/State Forest Department shall be obtained regarding impact of the proposed expansion plant on the Rebana RF, Daitari RF, Tamka RF, Mahagiri RF which are located around the project site and all the recommendations should be implemented in time bound manner. | **Complied.** Comments/observations of the Chief Wildlife Warden/State Forest Department will be made available and will be implemented in time. |

## B. General Conditions

| Sl. No. | General Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| I | The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OSPCB) and the State Government. | **Complied.** All the stipulations made by the Odisha Pollution Control Board and the State Government are strictly followed for existing facility. |
| II | No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests. | **Complied.** No expansion or modifications in the plant is carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC). |
| III | At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO2 and NOx are | **Complied.** The monitoring of the air quality has been conducted twice in a week in core zone as per CPCB guidelines and monthly monitoring is being |

| Sl. No. | General Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| | anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the OSPCB/CPCB once in six months. | done at 3 locations in buffer zone. The air quality analysis report is submitted to OSPCB on monthly basis. |
| IV | Industrial wastewater shall 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 form time to time. The treated wastewater shall be utilized for plantation purpose. | **Complied.**<br>For existing process industrial wastewater is being collected in settling pond. After two stages of settlement the overflow water is being recycled completely without discharging outside. The waste water generated from venturi scrubber is being treated in the thickener and the sludge is being conveyed to an impervious lined pond in the form of slurry for settlement. The overflow water of the sludge pond is being recycled back to the process without discharging outside. |
| V | The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise level should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (night-time). | **Complied.**<br>The overall noise levels in and around the plant area is being maintained within the standards (85 dBA) by providing noise control measures such as acoustic hoods, silencers, enclosures etc. on all sources of noise generation. |
| VI | The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. | **Complied.**<br>The socio-economic, development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. are being taken care of by our TSF team (CSR team). |
| VII | As mentioned in the EIA/EMP, Rs.25.44 Crores and Rs.3.26 Crores shall be earmarked towards capital cost and recurring cost/annum to control pollution and shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose. | **Being Complied.**<br>The proposed expansion project construction not yet started and it is realized that the construction of proposed project activity have not been carried out during the validity period (as per the EIA notification J-11011/10/2007-IA II(I) dated 07.05.2007) thus we shall obtain fresh approval from the ministry as per the provision EPA 1986 if the management envisages to undertake the said expansion in future and Will strictly adhere the EIA/EMP report. |

| Sl. No. | General Condition | Compliance Status (Oct'2024 to Mar'2025) |
|---|---|---|
| VIII | The Regional Office of this Ministry at Bhubaneswar/CPCB/OSPCB shall monitor the stipulated conditions. A six-monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly. | **Complied.**<br>The half yearly EC compliance report along with monitored data is being submitted on Parivesh portal. |
| IX | The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the OSPCB/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office at Bhubaneswar. | **Complied.**<br>News was published in two local newspapers (The Samaja, The Indian Express) about the grant of EC. These two newspapers are widely circulated in the region of locality concerned in the vernacular language, a copy of the same forwarded to the Regional Office at Bhubaneswar. |
| X | Project authorities 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 and the date of commencing the land development work. | **Complied.**<br>The proposed expansion project construction not yet started and it is realized that the construction of proposed project activity has not been carried out during the validity period (as per the EIA notification J-11011/10/2007-IA II(I) dated 07.05.2007) thus we shall obtain fresh approval from the ministry as per the provision EPA 1986 if the management envisages to undertake the said expansion in future |

**Ref : Envlab/24-25/TR- 11608** **Date :06.11.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF OCT 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.10.2024 | 63.4 | 31.5 | 10.2 | 17.5 | 9.6 | 0.75 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 07.10.2024 | 58.1 | 29.4 | 9.8 | 19.6 | 10.2 | 0.74 | 24.5 | BDL | BDL | BDL | BDL | BDL |
| 10.10.2024 | 65.8 | 33.1 | 11.6 | 21.7 | 8.6 | 0.82 | 21.8 | BDL | BDL | BDL | BDL | BDL |
| 14.10.2024 | 60.7 | 29.6 | 10.2 | 20.6 | 11.2 | 0.76 | 25.6 | BDL | BDL | BDL | BDL | BDL |
| 17.10.2024 | 62.5 | 30.7 | 10.7 | 18.6 | 9.7 | 0.72 | 24.8 | BDL | BDL | BDL | BDL | BDL |
| 21.10.2024 | 63.9 | 31.7 | 9.5 | 17.6 | 10.6 | 0.77 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| 24.10.2024 | 64.7 | 30.5 | 12.3 | 22.3 | 8.7 | 0.81 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 28.10.2024 | 58.6 | 28.7 | 11.7 | 17.5 | 11.3 | 0.79 | 24.1 | BDL | BDL | BDL | BDL | BDL |
| 31.10.2024 | 65.2 | 32.3 | 9.7 | 21.9 | 10.8 | 0.73 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 62.5 | 30.8 | 10.6 | 19.7 | 10.1 | 0.77 | 24.5 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Gaeke method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-11609** **Date : 06.11.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF OCT 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.10.2024 | 61.2 | 29.4 | 10.2 | 19.6 | 11.3 | 0.65 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 07.10.2024 | 54.3 | 26.1 | 11.3 | 21.6 | 9.7 | 0.61 | 23.9 | BDL | BDL | BDL | BDL | BDL |
| 10.10.2024 | 62.9 | 30.2 | 9.8 | 23.4 | 10.6 | 0.75 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 14.10.2024 | 63.7 | 30.6 | 9.4 | 17.5 | 8.4 | 0.74 | 23.8 | BDL | BDL | BDL | BDL | BDL |
| 17.10.2024 | 60.7 | 29.1 | 10.6 | 16.4 | 10.3 | 0.73 | 24.6 | BDL | BDL | BDL | BDL | BDL |
| 21.10.2024 | 63.7 | 30.6 | 9.5 | 18.6 | 8.6 | 0.58 | 21.8 | BDL | BDL | BDL | BDL | BDL |
| 24.10.2024 | 58.4 | 28.3 | 11.2 | 19.1 | 11.6 | 0.61 | 22.6 | BDL | BDL | BDL | BDL | BDL |
| 28.10.2024 | 52.8 | 25.3 | 8.6 | 20.8 | 10.9 | 0.62 | 21.9 | BDL | BDL | BDL | BDL | BDL |
| 31.10.2024 | 59.1 | 28.4 | 9.1 | 16.3 | 12.7 | 0.71 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 59.6 | 28.7 | 9.9 | 19.3 | 10.5 | 0.66 | 23.3 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-11610** **Date : 06.11.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF OCT 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.10.2024 | 59.1 | 29.6 | 11.2 | 16.3 | 7.3 | 0.72 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 07.10.2024 | 61.7 | 30.9 | 9.6 | 19.4 | 8.6 | 0.64 | 25.3 | BDL | BDL | BDL | BDL | BDL |
| 10.10.2024 | 63.1 | 31.5 | 10.3 | 17.2 | 10.4 | 0.76 | 21.9 | BDL | BDL | BDL | BDL | BDL |
| 14.10.2024 | 60.7 | 30.4 | 10.8 | 21.6 | 9.1 | 0.79 | 23.5 | BDL | BDL | BDL | BDL | BDL |
| 17.10.2024 | 62.8 | 31.2 | 9.6 | 18.7 | 8.4 | 0.82 | 24.6 | BDL | BDL | BDL | BDL | BDL |
| 21.10.2024 | 55.3 | 27.7 | 9.2 | 20.4 | 11.6 | 0.68 | 22.7 | BDL | BDL | BDL | BDL | BDL |
| 24.10.2024 | 54.7 | 27.4 | 11.6 | 17.2 | 9.4 | 0.64 | 23.1 | BDL | BDL | BDL | BDL | BDL |
| 28.10.2024 | 59.1 | 29.6 | 10.2 | 15.9 | 7.6 | 0.71 | 21.4 | BDL | BDL | BDL | BDL | BDL |
| 31.10.2024 | 57.3 | 28.5 | 9.5 | 16.4 | 10.5 | 0.63 | 21.7 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 59.3 | 29.6 | 10.2 | 18.1 | 9.2 | 0.71 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-13103** **Date :03.12.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF NOV 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 04.11.2024 | 61.2 | 31.8 | 9.6 | 19.6 | 10.2 | 0.84 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 07.11.2024 | 65.7 | 34.1 | 11.7 | 21.8 | 7.8 | 0.82 | 23.9 | BDL | BDL | BDL | BDL | BDL |
| 11.11.2024 | 63.1 | 32.8 | 9.6 | 17.5 | 9.3 | 0.86 | 24.6 | BDL | BDL | BDL | BDL | BDL |
| 14.11.2024 | 62.7 | 32.6 | 10.8 | 23.4 | 8.4 | 0.75 | 22.8 | BDL | BDL | BDL | BDL | BDL |
| 18.11.2024 | 64.8 | 33.7 | 12.6 | 22.1 | 10.6 | 0.81 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 21.11.2024 | 57.9 | 30.1 | 11.2 | 23.6 | 10.5 | 0.83 | 26.1 | BDL | BDL | BDL | BDL | BDL |
| 25.11.2024 | 60.5 | 31.5 | 9.7 | 21.5 | 8.1 | 0.75 | 23.4 | BDL | BDL | BDL | BDL | BDL |
| 28.11.2024 | 56.7 | 29.5 | 10.8 | 23.7 | 9.7 | 0.77 | 24.6 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 61.6 | 32 | 10.8 | 21.7 | 9.3 | 0.8 | 24.6 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Gaeke method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-13104** **Date :03.12.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF NOV 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 04.11.2024 | 60.5 | 30.3 | 11.2 | 20.6 | 9.3 | 0.75 | 23.6 | BDL | BDL | BDL | BDL | BDL |
| 07.11.2024 | 61.9 | 31.2 | 9.6 | 23.5 | 8.4 | 0.76 | 21.5 | BDL | BDL | BDL | BDL | BDL |
| 11.11.2024 | 63.7 | 31.8 | 11.3 | 21.7 | 8.3 | 0.84 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 14.11.2024 | 64.5 | 32.3 | 10.8 | 17.2 | 10.2 | 0.82 | 22.6 | BDL | BDL | BDL | BDL | BDL |
| 18.11.2024 | 58.6 | 29.3 | 9.7 | 16.9 | 9.1 | 0.74 | 23.5 | BDL | BDL | BDL | BDL | BDL |
| 21.11.2024 | 59.8 | 29.9 | 8.6 | 18.2 | 7.8 | 0.77 | 21.8 | BDL | BDL | BDL | BDL | BDL |
| 25.11.2024 | 62.1 | 31.1 | 9.4 | 15.5 | 8.6 | 0.65 | 24.9 | BDL | BDL | BDL | BDL | BDL |
| 28.11.2024 | 61.7 | 30.5 | 10.2 | 22.2 | 10.1 | 0.69 | 26.1 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 61.6 | 30.8 | 10.1 | 19.5 | 9 | 0.75 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-13105** **Date : 03.12.2024**

## AAQ MONITORING REPORT FOR THE MONTH OF NOV 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 04.11.2024 | 58.6 | 28.1 | 10.2 | 15.6 | 8.1 | 0.75 | 23.6 | BDL | BDL | BDL | BDL | BDL |
| 07.11.2024 | 62.3 | 29.9 | 13.6 | 18.6 | 7.6 | 0.74 | 21.5 | BDL | BDL | BDL | BDL | BDL |
| 11.11.2024 | 56.9 | 27.3 | 11.2 | 15.2 | 8.3 | 0.78 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| 14.11.2024 | 59.1 | 28.4 | 9.8 | 17.6 | 9.4 | 0.75 | 21.9 | BDL | BDL | BDL | BDL | BDL |
| 18.11.2024 | 60.7 | 29.1 | 8.5 | 14.3 | 10.6 | 0.56 | 23.4 | BDL | BDL | BDL | BDL | BDL |
| 21.11.2024 | 58.1 | 27.8 | 10.2 | 13.9 | 8.7 | 0.58 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 25.11.2024 | 56.3 | 27 | 8.4 | 20.6 | 11.3 | 0.59 | 22.8 | BDL | BDL | BDL | BDL | BDL |
| 28.11.2024 | 55.2 | 26.5 | 9.3 | 17.8 | 9.6 | 0.62 | 24.1 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 58.4 | 28 | 10.2 | 16.7 | 9.2 | 0.67 | 22.7 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-13780** **Date : 04.01.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF DEC 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.12.2024 | 65.2 | 33.9 | 10.2 | 21.3 | 8.6 | 0.78 | 26.4 | BDL | BDL | BDL | BDL | BDL |
| 05.12.2024 | 67.5 | 36.2 | 12.3 | 18.6 | 9.1 | 0.85 | 23.8 | BDL | BDL | BDL | BDL | BDL |
| 09.12.2024 | 66.4 | 35.1 | 11.3 | 24.5 | 9.3 | 0.86 | 22.4 | BDL | BDL | BDL | BDL | BDL |
| 12.12.2024 | 68.1 | 34.8 | 8.6 | 22.7 | 10.5 | 0.75 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| 16.12.2024 | 69.4 | 35.9 | 12.3 | 26.5 | 8.7 | 0.82 | 24.9 | BDL | BDL | BDL | BDL | BDL |
| 19.12.2024 | 64.2 | 33.7 | 13.7 | 24.4 | 10.4 | 0.73 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 23.12.2024 | 65.3 | 34.4 | 12.8 | 21.9 | 9.8 | 0.84 | 27.1 | BDL | BDL | BDL | BDL | BDL |
| 26.12.2024 | 67.2 | 35.1 | 9.6 | 23.3 | 8.4 | 0.79 | 23.9 | BDL | BDL | BDL | BDL | BDL |
| 30.12.2024 | 68.5 | 36.3 | 10.4 | 25.2 | 9.3 | 0.77 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 66.8 | 35 | 11.2 | 23.2 | 9.3 | 0.8 | 25.2 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Gaeke method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-13781** **Date : 04.01.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF DEC 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.12.2024 | 62.3 | 33.2 | 10.6 | 19.6 | 8.6 | 0.56. | 22.4 | BDL | BDL | BDL | BDL | BDL |
| 05.12.2024 | 59.8 | 30.6 | 9.7 | 21.3 | 10.2 | 0.58 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 09.12.2024 | 57.2 | 29.5 | 10.2 | 18.5 | 7.6 | 0.64 | 25.3 | BDL | BDL | BDL | BDL | BDL |
| 12.12.2024 | 53.4 | 27.6 | 8.6 | 19.6 | 8.4 | 0.61 | 24.8 | BDL | BDL | BDL | BDL | BDL |
| 16.12.2024 | 55.9 | 30.3 | 11.5 | 17.5 | 9.2 | 0.52 | 23.5 | BDL | BDL | BDL | BDL | BDL |
| 19.12.2024 | 57.1 | 31.6 | 9.2 | 14.7 | 8.6 | 0.59 | 21.5 | BDL | BDL | BDL | BDL | BDL |
| 23.12.2024 | 54.2 | 29.8 | 8.3 | 13.8 | 9.4 | 0.67 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| 26.12.2024 | 57.5 | 31.2 | 9.5 | 18.2 | 7.5 | 0.63 | 23.4 | BDL | BDL | BDL | BDL | BDL |
| 30.12.2024 | 54.1 | 30.1 | 10.4 | 16.2 | 8.3 | 0.54 | 21.7 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 57.2 | 30.5 | 9.8 | 17.7 | 8.6 | 0.59 | 23 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By*

*Reviewed By*

**Ref : Envlab/24-25/TR-13782** **Date : 04.01.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF DEC 2024

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.12.2024 | 63.7 | 33.7 | 12.3 | 23.2 | 11.2 | 0.75 | 29.6 | BDL | BDL | BDL | BDL | BDL |
| 05.12.2024 | 66.2 | 35.1 | 10.6 | 19.6 | 8.6 | 0.76 | 27.4 | BDL | BDL | BDL | BDL | BDL |
| 09.12.2024 | 64.7 | 36.2 | 14.2 | 22.4 | 13.7 | 0.82 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| 12.12.2024 | 68.1 | 34.9 | 10.8 | 18.6 | 11.2 | 0.84 | 30.2 | BDL | BDL | BDL | BDL | BDL |
| 16.12.2024 | 66.8 | 33.8 | 12.7 | 23.5 | 10.9 | 0.69 | 29.7 | BDL | BDL | BDL | BDL | BDL |
| 19.12.2024 | 69.2 | 35.7 | 14.9 | 24.8 | 9.6 | 0.73 | 27.4 | BDL | BDL | BDL | BDL | BDL |
| 23.12.2024 | 63.7 | 33.8 | 10.6 | 26.7 | 8.7 | 0.77 | 25.3 | BDL | BDL | BDL | BDL | BDL |
| 26.12.2024 | 65.1 | 35.1 | 11.7 | 20.7 | 10.3 | 0.74 | 26.4 | BDL | BDL | BDL | BDL | BDL |
| 30.12.2024 | 62.3 | 33 | 9.7 | 23.5 | 9.1 | 0.78 | 25.1 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 65.5 | 34.6 | 11.9 | 22.6 | 10.4 | 0.76 | 27.4 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 µg/m³, $PM_{2.5}$ <10 µg/m³ $SO_2$< 4 µg/m³, $NO_X$< 6 µg/m³, $O_3$<4 µg/m³, $NH_3$<20 µg/m³, Ni<2.5 ng/m³, As < 1 ng/m³, $C_6H_6$<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO-<0.1 mg/m³,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-15685** **Date :04.02.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF JAN 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.01.2025 | 68.4 | 35.8 | 12.3 | 23.6 | 9.1 | 0.84 | 27.1 | BDL | BDL | BDL | BDL | BDL |
| 06.01.2025 | 66.3 | 33.6 | 10.6 | 21.5 | 8.6 | 0.86 | 25.6 | BDL | BDL | BDL | BDL | BDL |
| 09.01.2025 | 67.6 | 32.5 | 12.3 | 22.6 | 7.6 | 0.85 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 13.01.2025 | 62.8 | 31.4 | 9.6 | 18.6 | 7.3 | 0.89 | 27.1 | BDL | BDL | BDL | BDL | BDL |
| 16.01.2025 | 69.1 | 36.8 | 11.8 | 20.6 | 9.4 | 0.82 | 23.9 | BDL | BDL | BDL | BDL | BDL |
| 20.01.2025 | 66.3 | 38.7 | 12.3 | 17.9 | 10.3 | 0.83 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| 23.01.2025 | 64.7 | 32.5 | 10.9 | 23.6 | 9.8 | 0.81 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| 27.01.2025 | 65.4 | 33.2 | 9.7 | 25.1 | 9.9 | 0.88 | 21.5 | BDL | BDL | BDL | BDL | BDL |
| 30.01.2025 | 66.2 | 31.9 | 11.3 | 24.6 | 10.6 | 0.83 | 26.8 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 66.3 | 34 | 11.2 | 22.1 | 9.2 | 0.85 | 25.2 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Gaeke method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$, $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$.
***BDL:*** *Below detection limit*

*Prepared By*

*Reviewed By*

**Ref : Envlab/24-25/TR-15686** **Date : 04.02.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF JAN 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.01.2025 | 63.4 | 33.2 | 11.6 | 18.6 | 8.6 | 0.59 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 06.01.2025 | 60.4 | 30.6 | 9.8 | 20.6 | 7.6 | 0.56 | 23.8 | BDL | BDL | BDL | BDL | BDL |
| 09.01.2025 | 61.2 | 39.5 | 10.6 | 17.9 | 7.4 | 0.58 | 24.5 | BDL | BDL | BDL | BDL | BDL |
| 13.01.2025 | 55.3 | 27.5 | 11.5 | 21.3 | 9.5 | 0.64 | 21.3 | BDL | BDL | BDL | BDL | BDL |
| 16.01.2025 | 56.9 | 30.3 | 10.6 | 18.6 | 9.3 | 0.63 | 25.2 | BDL | BDL | BDL | BDL | BDL |
| 20.01.2025 | 54.1 | 31.6 | 9.9 | 16.4 | 10.5 | 0.58 | 22.6 | BDL | BDL | BDL | BDL | BDL |
| 23.01.2025 | 59.3 | 29.8 | 10.3 | 15.9 | 9.9 | 0.61 | 23.8 | BDL | BDL | BDL | BDL | BDL |
| 27.01.2025 | 60.7 | 31.2 | 9.4 | 16.2 | 8.6 | 0.66 | 21.7 | BDL | BDL | BDL | BDL | BDL |
| 30.01.2025 | 62.3 | 30.1 | 11.2 | 14.2 | 7.6 | 0.64 | 23.5 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 59.3 | 31.5 | 10.4 | 17.7 | 8.7 | 0.61 | 23.1 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indophenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-15687** **Date : 04.02.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF JAN 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 02.01.2025 | 65.2 | 34.2 | 12.3 | 22.6 | 8.6 | 0.79 | 28.6 | BDL | BDL | BDL | BDL | BDL |
| 06.01.2025 | 64.9 | 32.9 | 13.9 | 21.6 | 9.4 | 0.85 | 24.9 | BDL | BDL | BDL | BDL | BDL |
| 09.01.2025 | 66.8 | 32.1 | 11.2 | 20.3 | 10.2 | 0.86 | 27.6 | BDL | BDL | BDL | BDL | BDL |
| 13.01.2025 | 69.1 | 34.4 | 10.6 | 22.7 | 7.6 | 0.74 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| 16.01.2025 | 65.4 | 33.6 | 13.5 | 18.6 | 8.6 | 0.77 | 26.7 | BDL | BDL | BDL | BDL | BDL |
| 20.01.2025 | 67.1 | 38.2 | 12.7 | 23.3 | 9.5 | 0.73 | 25.3 | BDL | BDL | BDL | BDL | BDL |
| 23.01.2025 | 66.2 | 33.3 | 10.9 | 19.6 | 10.3 | 0.82 | 24.9 | BDL | BDL | BDL | BDL | BDL |
| 27.01.2025 | 64.5 | 34.6 | 12.8 | 20.7 | 7.8 | 0.79 | 26.8 | BDL | BDL | BDL | BDL | BDL |
| 30.01.2025 | 65.1 | 32.9 | 10.3 | 22.1 | 8.3 | 0.77 | 27.3 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 66 | 34.1 | 12.3 | 21.2 | 8.9 | 0.79 | 26.4 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-17085** **Date :04.03.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF FEB 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.02.2025 | 69.1 | 36.2 | 11.6 | 21.4 | 8.6 | 0.87 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 06.02.2025 | 65.4 | 33.1 | 12.8 | 23.8 | 9.4 | 0.85 | 29.1 | BDL | BDL | BDL | BDL | BDL |
| 10.02.2025 | 67.4 | 32.5 | 9.7 | 20.1 | 8.2 | 0.81 | 26.7 | BDL | BDL | BDL | BDL | BDL |
| 13.02.2025 | 65.2 | 31.8 | 10.6 | 24.5 | 7.6 | 0.82 | 24.8 | BDL | BDL | BDL | BDL | BDL |
| 17.02.2025 | 66.8 | 35.6 | 13.8 | 23.7 | 10.2 | 0.86 | 26.5 | BDL | BDL | BDL | BDL | BDL |
| 20.02.2025 | 64.2 | 33.4 | 12.9 | 19.7 | 9.4 | 0.85 | 29.3 | BDL | BDL | BDL | BDL | BDL |
| 24.02.2025 | 66.1 | 35.1 | 10.6 | 22.4 | 8.7 | 0.79 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 27.02.2025 | 63.7 | 34.7 | 11.4 | 23.1 | **9.2** | 0.88 | 22.6 | BDL | BDL | BDL | BDL | BDL |
| **NAAQ Standard** | **100** | **60** | **80** | **80** | **180** | **4** | **400** | **5** | **1** | **20** | **1** | **6** |
| **Monthly Average** | **65.9** | **34.1** | **11.7** | **22.3** | **8.9** | **0.84** | **26.3** | BDL | BDL | BDL | BDL | BDL |
| **Testing method** | **Gravimetric** | **Gravimetric** | **Improved West and Gaeke method** | **Modified Jacob & Hochheiser (Na-Arsenite)** | **Chemical Method** | **NDIR Spectroscopy** | **Indophenol blue method** | **Absorption & Desorption followed by GC analysis** | **Solvent extraction followed by Gas Chromatography analysis** | **AAS method after sampling** | **AAS method after sampling** | **AAS method after sampling** |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR-17086** **Date : 04.03.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF FEB 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.02.2025 | 64.1 | 33.6 | 10.5 | 20.3 | 7.3 | 0.63 | 22.3 | BDL | BDL | BDL | BDL | BDL |
| 06.02.2025 | 62.3 | 31.5 | 10.2 | 18.7 | 8.2 | 0.52 | 21.8 | BDL | BDL | BDL | BDL | BDL |
| 10.02.2025 | 59.7 | 28.8 | 12.3 | 19.3 | 7.9 | 0.58 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 13.02.2025 | 56.4 | 28.1 | 9.7 | 18.3 | 8.4 | 0.61 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| 17.02.2025 | 59.3 | 31.6 | 11.7 | 19.5 | 9.3 | 0.57 | 26.7 | BDL | BDL | BDL | BDL | BDL |
| 20.02.2025 | 60.7 | 35.4 | 9.4 | 17.3 | 8.4 | 0.59 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| 24.02.2025 | 55.8 | 28.1 | 11.6 | 16.8 | 7.2 | 0.58 | 22.4 | BDL | BDL | BDL | BDL | BDL |
| 27.02.2025 | 64.5 | 33.2 | 10.6 | 18.4 | 8.1 | 0.62 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 60.4 | 31.3 | 10.8 | 18.6 | 8.1 | 0.59 | 23.4 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indophenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 $\mu g/m^3$, $PM_{2.5}$ <10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/24-25/TR- 17087** **Date : 04.03.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF FEB 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.02.2025 | 66.1 | 33.8 | 13.6 | 22.3 | 9.2 | 0.76 | 27.4 | BDL | BDL | BDL | BDL | BDL |
| 06.02.2025 | 63.8 | 31.7 | 10.5 | 19.8 | 8.7 | 0.81 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 10.02.2025 | 64.1 | 30.9 | 9.8 | 16.5 | 7.6 | 0.76 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 13.02.2025 | 67.3 | 33.6 | 11.6 | 20.6 | 8.3 | 0.88 | 29.6 | BDL | BDL | BDL | BDL | BDL |
| 17.02.2025 | 66.4 | 38.7 | 10.8 | 19.3 | 7.6 | 0.84 | 27.4 | BDL | BDL | BDL | BDL | BDL |
| 20.02.2025 | 65.9 | 35.2 | 13.7 | 24.1 | 9.4 | 0.79 | 26.3 | BDL | BDL | BDL | BDL | BDL |
| 24.02.2025 | 62.7 | 31.5 | 13.4 | 17.6 | 8.5 | 0.82 | 28.2 | BDL | BDL | BDL | BDL | BDL |
| 27.02.2025 | 65.6 | 33.7 | 11.6 | 18.1 | 9.4 | 0.84 | 29.1 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 65.2 | 33.6 | 11.8 | 19.8 | 8.6 | 0.81 | 27.5 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$ <20 µg/m³, $PM_{2.5}$ <10 µg/m³ $SO_2$< 4 µg/m³, $NO_X$< 6 µg/m³, $O_3$<4 µg/m³, $NH_3$<20 µg/m³, $N_1$<2.5 ng/m³, As < 1 ng/m³, $C_6H_6$<4 µg/m³, BaP<0.5 ng/m³, Pb<0.02 µg/m³, CO-<0.1 mg/m³,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/25-26/TR-00249** **Date :04.04.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF MAR 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID: AAQMS-1 (Near Admin Building).**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.03.2025 | 67.4 | 35.9 | 12.7 | 20.5 | 9.6 | 0.85 | 23.6 | BDL | BDL | BDL | BDL | BDL |
| 06.03.2025 | 70.3 | 36.4 | 10.6 | 19.6 | 9.4 | 0.86 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 10.03.2025 | 65.9 | 34.2 | 13.2 | 23.5 | 8.5 | 0.88 | 29.1 | BDL | BDL | BDL | BDL | BDL |
| 13.03.2025 | 64.3 | 32.7 | 11.6 | 21.7 | 7.6 | 0.89 | 26.7 | BDL | BDL | BDL | BDL | BDL |
| 17.03.2025 | 68.9 | 35.6 | 10.8 | 20.9 | 9.4 | 0.75 | 25.2 | BDL | BDL | BDL | BDL | BDL |
| 20.03.2025 | 62.2 | 32.3 | 13.7 | 18.5 | 10.2 | 0.84 | 21.9 | BDL | BDL | BDL | BDL | BDL |
| 24.03.2025 | 67.8 | 35.7 | 11.5 | 25.4 | 8.5 | 0.83 | 23.7 | BDL | BDL | BDL | BDL | BDL |
| 27.03.2025 | 64.1 | 33.3 | 10.2 | 19.6 | 8.4 | 0.88 | 28.4 | BDL | BDL | BDL | BDL | BDL |
| 31.03.2025 | 68.3 | 35.5 | 12.5 | 17.4 | 9.3 | 0.82 | 26.2 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 66.6 | 34.6 | 11.9 | 20.8 | 9 | 0.84 | 25.6 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Gaeke method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$, $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 ng/$m^3$, As < 1 ng/$m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 ng/$m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 mg/$m^3$.
***BDL:*** *Below detection limit*

*Prepared By*

*Reviewed By*

**Ref : Envlab/25-26/TR- 00250** **Date :04.04.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF MAR 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-2 (Near Kusei Club)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.03.2025 | 62.9 | 30.9 | 10.3 | 19.3 | 8.6 | 0.61 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 06.03.2025 | 65.1 | 32.2 | 9.8 | 20.2 | 8.4 | 0.59 | 22.9 | BDL | BDL | BDL | BDL | BDL |
| 10.03.2025 | 58.7 | 28.9 | 11.5 | 19.1 | 8.2 | 0.58 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 13.03.2025 | 60.2 | 30.3 | 12.6 | 17.5 | 10.1 | 0.66 | 24.9 | BDL | BDL | BDL | BDL | BDL |
| 17.03.2025 | 58.7 | 26.7 | 9.6 | 17.6 | 8.4 | 0.64 | 25.8 | BDL | BDL | BDL | BDL | BDL |
| 20.03.2025 | 54.1 | 31.2 | 8.7 | 19.1 | 7.9 | 0.59 | 22.6 | BDL | BDL | BDL | BDL | BDL |
| 24.03.2025 | 62.7 | 33.4 | 10.4 | 18.4 | 8.5 | 0.58 | 25.4 | BDL | BDL | BDL | BDL | BDL |
| 27.03.2025 | 64.8 | 32.8 | 11.3 | 17.7 | 7.7 | 0.63 | 21.6 | BDL | BDL | BDL | BDL | BDL |
| 31.03.2025 | 65.9 | 32.3 | 12.2 | 16.2 | 7.2 | 0.59 | 21.4 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 61.5 | 30.9 | 10.7 | 18.3 | 8.3 | 0.61 | 23.5 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indophenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_x$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO-<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By* *Reviewed By*

**Ref : Envlab/25-26/TR- 00251** **Date :04.04.2025**

## AAQ MONITORING REPORT FOR THE MONTH OF MAR 2025

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Sampling Location : **Monitoring Station ID:AAQMS-3 (Near Helipad)**
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of TATA representative.

| Date | PARAMETERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $PM_{10}$ ($\mu g/m^3$) | $PM_{2.5}$ ($\mu g/m^3$) | $SO_2$ ($\mu g/m^3$) | $NO_x$ ($\mu g/m^3$) | $O_3$ ($\mu g/m^3$) | CO ($mg/m^3$) | $NH_3$ ($\mu g/m^3$) | $C_6H_6$ ($\mu g/m^3$) | BaP ($ng/m^3$) | Ni ($ng/m^3$) | Pb ($\mu g/m^3$) | As ($ng/m^3$) |
| 03.03.2025 | 64.3 | 32.6 | 11.9 | 23.6 | 10.3 | 0.84 | 29.4 | BDL | BDL | BDL | BDL | BDL |
| 06.03.2025 | 65.1 | 33.9 | 13.6 | 18.5 | 8.6 | 0.76 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 10.03.2025 | 66.7 | 35.1 | 10.8 | 23.7 | 10.4 | 0.81 | 29.4 | BDL | BDL | BDL | BDL | BDL |
| 13.03.2025 | 70.1 | 36.5 | 12.6 | 19.8 | 9.7 | 0.82 | 27.6 | BDL | BDL | BDL | BDL | BDL |
| 17.03.2025 | 64.8 | 32.8 | 13.7 | 20.7 | 7.6 | 0.74 | 28.4 | BDL | BDL | BDL | BDL | BDL |
| 20.03.2025 | 62.1 | 32.9 | 10.1 | 22.7 | 9.1 | 0.81 | 25.7 | BDL | BDL | BDL | BDL | BDL |
| 24.03.2025 | 67.8 | 35.4 | 13.2 | 18.5 | 8.5 | 0.76 | 26.4 | BDL | BDL | BDL | BDL | BDL |
| 27.03.2025 | 68.1 | 34.6 | 12.7 | 21.1 | 10.4 | 0.79 | 28.7 | BDL | BDL | BDL | BDL | BDL |
| 31.03.2025 | 63.7 | 33.2 | 11.8 | 20.7 | 7.6 | 0.88 | 29.1 | BDL | BDL | BDL | BDL | BDL |
| NAAQ Standard | 100 | 60 | 80 | 80 | 180 | 4 | 400 | 5 | 1 | 20 | 1 | 6 |
| Monthly Average | 65.9 | 34.1 | 12.3 | 21 | 9.1 | 0.8 | 27.8 | BDL | BDL | BDL | BDL | BDL |
| Testing method | Gravimetric | Gravimetric | Improved West and Geake method | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method | NDIR Spectroscopy | Indo phenol blue method | Absorption & Desorption followed by GC analysis | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling | AAS method after sampling | AAS method after sampling |

***BDL Values***: $PM_{10}$<20 $\mu g/m^3$, $PM_{2.5}$<10 $\mu g/m^3$ $SO_2$< 4 $\mu g/m^3$, $NO_X$< 6 $\mu g/m^3$, $O_3$<4 $\mu g/m^3$, $NH_3$<20 $\mu g/m^3$, Ni<2.5 $ng/m^3$, As < 1 $ng/m^3$, $C_6H_6$<4 $\mu g/m^3$, BaP<0.5 $ng/m^3$, Pb<0.02 $\mu g/m^3$, CO -<0.1 $mg/m^3$,
***BDL:*** *Below detection limit*

*Prepared By*

*Reviewed By*