HALF YEARLY COMPLIANCE REPORT

(Period from 01.10.2018 to 31.03.2019)

OF

Ferro Alloys Plant, Bamnipal

Tata Steel Limited

P.O- Bamnipal, Dist. Keonjhar

Odisha- 758082

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

Ref. No. : FAP(B)/HEAD/317/19 Date: 17-05-2019

To
Director(s)
Ministry of Environment and Forests
Eastern Regional Office,
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'2018 to Mar'2019

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'2018 to Mar'2019 as per EIA Notification, 2006.

We have sent the soft copy of the report to your good office on email: roez.bsr-mef@nic.in for your ready reference.

We trust that the measures taken towards environmental safe guards 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 (FA Production)
FAP, Bamnipal
M/s Tata Steel Ltd.

Encl: As above
CC to: Member Secretary, SPCB, Odisha, Bhubaneswar-751012.
CPCB, Zonal Office Kolkata

TATA STEEL LTD
Ferro Alloys Plant, Bamnipal-758082, Dist.Keonjhar,Odisha,India
Tel : 09238118601,9238118603
Regd. Office : Bombay House, 24 Homi Mody Street, Mumbai – 400 001
Tel. 91 22 66658282, FAX 91 22 666577724
Corporate Identity No - L27100MH1907PLC000260, Website : www.tatasteel.com

COMPLIANCE STATUS PERIOD: OCTOBER'18 to MARCH'19 FOR

ENVIRONMENTAL CLEARANCE OF
FERRO ALLOYS PLANT, BAMNIPAL OF TATA STEEL LIMITED
VIDE MOEF's LETTER NO. No.: J-11011/10/2007-IA. II (I), Dated 07.05.2007

A. SPECIFIC CONDITIONS

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.

Status of Compliance:

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.

Status of Compliance:

The proposed expansion project construction not yet started. Monthly stack monitoring report of existing plant is submitted to OSPCB, BBSR and RO, OSPCB, Keonjhar, Orissa, every month. Monthly stack analysis report is attached as Annexure-III From Oct'18 to Mar'19.
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/ Nm^3.

		Oct'18	Nov'18	Dec'18	Jan'19	Feb'19	Mar'19
	Standard (mg/Nm^3)	Avg. during the month (mg/Nm^3)	Avg. during the month (mg/Nm^3)	Avg. during the month (mg/Nm^3)	Avg. during the month (mg/Nm^3)	Avg. during the month (mg/Nm^3)	Avg. during the month (mg/Nm^3)
PM	100	11.6	11.5	11.11	11.24	12.1	11.4

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/Nm^3. Further, specific measures like water sprinkling around the coal stockpiles and asphalting or concreting of the roads shall be done to control fugitive emissions.

Status of Compliance:

The Proposed CPP project construction not yet started. However for the existing control of ferro-chrome plant for the dust and fugitive emission, the 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 has been installed at dust generating sources like conveyor belt, skip hoist, pellet screen, vibrating feeder. In existing plant control measures for checking fugitive emissions from all the vulnerable sources have been installed.

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.

Status of Compliance:

The proposed expansion project construction not yet started. In existing plant we have three air quality monitoring stations (Two in the work zone, one in residential area). Monitoring of the ambient air quality was being conducted twice in a week as per CPCB guidelines. Likewise monthly monitoring is done in 3 buffer zone locations. PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, NH_3, C_6H_6, BaP, Ni, Pb, As parameters in the air quality is monitored as per Gazette Notification 826(E), dated 16.11.2009. The data on ambient air quality of core zone as well as buffer zone for the period Oct'18 to Mar'19 is attached as Annexure-I. The ambient air quality analysis report is submitted to OSPCB, BBSR and RO, OSPCB Keonjhar, Orissa every month.

v) Total requirement of the water from Remal Dam and Kusei River shall not exceed 4416 m^3/day and 7584 m^3/day respectively as per the permission accorded by the Department of Water Resources, Govt. of Orissa. All the 3640 m^3/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.

Status of Compliance:

The proposed expansion project is yet to be started. The water requirement for existing plant has not increased, and is well below the above permissible limit and we have adopted 'Zero' discharge.

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 off. 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 off 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 preprocessors.

Status of Compliance:

The proposed project construction not yet started. However for the existing plant 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.

Status of Compliance:

SAF hard slag is used for civil construction. Rainwater harvesting structure was constructed using SAF hard slag replacing granite boulders. CPP project and plant expansion not yet started.

viii) The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.

Status of Compliance:

Rain water harvesting pond has been developed and feasibility test has been undergone for ground water recharging and strengthening rain water harvesting.

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.

Status of Compliance:

It will be adhered. Green belt will be developed in 40 ha area in lieu of 39.72 ha forest land proposed to be acquired for the said project. However 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.

Status of Compliance:

Periodic medical check-ups were conducted yearly. Last medical check-up was done on December'2018 and 713 nos. of employees are examined including contractual employees.

xi) Recommendations made in the CREP guidelines issued for Ferro chrome plants shall be implemented.

Status of Compliance:
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.

Status of Compliance:
The construction for the proposed project has not started yet. 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.

Status of Compliance:
The construction for the proposed expansion project has not started yet. Comments/observations of the Chief Wildlife Warden/State Forest Department will be made available and will be implemented in time.

B. GENERAL CONDITIONS:

i. The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OSPCB) and the State Government.

Status of Compliance:
It has been complied.

ii. No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests.

Status of Compliance:
It will be followed.

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 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.

Status of Compliance:

The proposed expansion project construction not yet started. For existing plant there are three air quality monitoring stations (two in the work zone, one in residential area). Monitoring of the air quality has been conducted twice in a week as per CPCB guidelines. Likewise monthly monitoring has been done in 3 buffer zone locations. The air quality analysis report submitted to OSPCB BBSR and Regional Office, OSPCB, Keonjhar, Orissa every month. Air quality analysis report is attached as Annexure-I.

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.

Status of Compliance:

The proposed expansion project construction not yet started. 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 ventury 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 (nighttime).

Status of Compliance:

It has been strictly adhered. Monitoring results for last six months i. Oct'2018 to Apr'2019 is enclosed as Annexure-II

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.

Status of Compliance:

The proposed expansion project construction not yet started. For existing ferro-chrome plant 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 TSRDS team (CSR team). Total

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.

Status of Compliance:

The proposed expansion project construction not yet started.it will be strictly adhered.

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.

Status of Compliance:

The proposed expansion project construction not yet started. A six monthly compliance report and the monitored data along with statistical interpretation have been submitted to MoEF Bhubaneswar & CPCB/OSPCB.

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.

Status of Compliance:

The proposed expansion project construction not yet started. The project proponent had been informed to the public in two local newspapers (The Samaja, The Indian Express) that 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.

Status of Compliance:

The proposed expansion project construction not yet started.

ANNEXURE-I
AAQ REPORT

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007
Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
E-mail :visiontek@vcspl.org ,visiontekin@yahoo.co.in, visiontekin@gmail.com, Visit us at: www.vcspl.org
Committed For Better Environment

18/R-8990

AAQ MONITORING REPORT FOR THE MONTH OF OCTOBER-2018

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
01.10.2018	45.4	21.4	4.4	10.6	5.2	0.21	19.8	<0.001	<0.002	<0.01	<0.001	<0.001
04.10.2018	48.7	22.1	4.1	9.5	5.1	0.22	18.6	<0.001	<0.002	<0.01	<0.001	<0.001
08.10.2018	46.4	20.6	4.3	9.7	4.6	0.24	22.5	<0.001	<0.002	<0.01	<0.001	<0.001
11.10.2018	49.5	21.6	4.2	9.8	4.5	0.24	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
15.10.2018	36.7	20.2	4.3	10.2	4.3	0.23	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
17.10.2018	40.8	20.3	4.1	9.5	5.1	0.21	26.8	<0.001	<0.002	<0.01	<0.001	<0.001
22.10.2018	41.3	22.3	4.4	9.1	5.6	0.24	24.8	<0.001	<0.002	<0.01	<0.001	<0.001
25.10.2018	44.8	19.7	4.2	9.4	5.1	0.25	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
29.10.2018	42.7	21.6	4.1	9.6	5.6	0.23	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	44.03	21.09	4.23	9.71	5.01	0.23	22.72	<0.001	<0.002	<0.01	<0.001	<0.001
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 :SO_2< 4 µg/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³ , Pb<0.001 µg/m³, As < 0.001 ng/m³.

Date: 01/11/2018

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
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OHSAS 18001 : 2007
Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
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Committed For Better Environment

18/R-8991

AAQ MONITORING REPORT FOR THE MONTH OF OCTOBER-2018

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
01.10.2018	49.5	20.8	4.2	< 9.0	4.5	0.16	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
04.10.2018	45.7	20.7	4.1	< 9.0	4.1	0.14	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
08.10.2018	45.5	21.5	4.0	< 9.0	4.5	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
11.10.2018	44.7	22.8	4.2	< 9.0	4.3	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
15.10.2018	42.6	21.8	<4.0	< 9.0	4.2	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
17.10.2018	42.9	20.7	<4.0	< 9.0	4.0	0.17	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
22.10.2018	47.8	20.6	<4.0	< 9.0	4.2	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
25.10.2018	41.4	20.5	<4.0	<9.0	4.1	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
29.10.2018	40.8	21.7	<4.0	<9.0	4.2	0.16	<20.0	<0.002	<0.01	<0.001	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	41.72	21.23	4.13	<9.0	4.23	0.17	<20.0	<0.002	<0.01	<0.001	<0.001	<0.001
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 :SO_2< 4 µg/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³ , Pb<0.001 µg/m³, As < 0.001 ng/m³.

Date: 01/11/2018

For Visiontek Consultancy Services Pvt. Ltd.

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Committed For Better Environment
ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: /181R-8998

AAQ MONITORING REPORT FOR THE MONTH OF OCTOBER-2018

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)
01.10.2018	44.5	22.4	4.3	13.5	8.6	0.3	24.6	<0.001	<0.002	<0.01	<0.001	<0.001
04.10.2018	41.8	22.8	4.2	13.6	8.5	0.29	23.6	<0.001	<0.002	<0.01	<0.001	<0.001
08.10.2018	42.2	23.8	4.4	12.9	7.8	0.49	24.7	<0.001	<0.002	<0.01	<0.001	<0.001
11.10.2018	40.8	24.1	4.8	12.8	7.5	0.31	23.8	<0.001	<0.002	<0.01	<0.001	<0.001
15.10.2018	41.4	18.6	4.8	12.9	7.6	0.32	22.6	<0.001	<0.002	<0.01	<0.001	<0.001
17.10.2018	41.8	19.8	4.9	12.6	7.3	0.31	24.6	<0.001	<0.002	<0.01	<0.001	<0.001
22.10.2018	42.6	21.2	5.0	11.8	6.8	0.30	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
25.10.2018	41.9	22.0	4.9	12.9	6.7	0.32	21.5	<0.001	<0.002	<0.01	<0.001	<0.001
29.10.2018	42.2	20.6	4.7	12.6	6.5	0.33	22.8	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	**42.13**	**21.70**	**4.67**	**<9.0**	**7.48**	**0.33**	**<20.0**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.001**
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 :SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, CO-<0.1 mg/m^3, NH_3 <20 µg/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 µg/m^3, As < 0.001 ng/m^3.

Date: 01/11/18

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Env/ab/18/R-9663

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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)
01.11.2018	49.2	24.6	4.6	9.5	5.3	0.26	20.6	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	50.2	25.4	4.5	9.8	5.4	0.32	20.5	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	51.2	26.4	4.8	9.9	5.6	0.35	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	51.6	25.3	4.6	10.2	5.8	0.34	21.8	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	51.9	24.8	4.8	10.5	5.4	0.36	21.2	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	51.2	23.4	4.9	10.4	5.9	0.34	22.6	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	52.3	24.6	4.4	10.3	5.2	0.35	22.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	53.4	25.6	4.7	10.1	5.1	0.32	24.6	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	54.6	26.4	4.3	10.5	5.2	0.35	25.4	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	**51.73**	**25.17**	**4.62**	**10.13**	**5.43**	**0.33**	**22.31**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**
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 :SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, CO-<0.1 mg/m^3, NH_3 <20 µg/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3, Pb<0.001 µg/m^3, As < 0.001 ng/m^3.

Date: 01.12.18

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007
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Ref.: Envlab/18/R-9664

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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)
01.11.2018	49.8	24.6	4.3	9.2	4.9	0.21	21.1	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	50.2	24.5	4.6	9.1	4.8	0.22	22.1	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	51.3	25.6	4.5	9.3	4.7	0.24	21.9	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	52.4	25.4	4.2	9.5	4.6	0.19	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	52.4	25.4	4.0	9.4	4.5	0.24	22.4	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	52.3	26.5	4.1	9.6	4.8	0.23	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	54.6	24.8	4.2	9.5	4.7	0.25	21.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	52.8	25.3	4.3	9.6	4.9	0.24	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	54.6	24.6	4.4	9.2	4.7	0.23	21.6	<0.002	<0.01	<0.001	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	52.27	25.19	4.29	9.38	4.73	0.23	22.32	<0.001	<0.002	<0.01	<0.001	<0.001
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 : SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3, Pb<0.001 ng/m^3, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

Visiontek Consultancy Services Pvt. Ltd.
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Ref.: Envlab/18/R-9665

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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)
01.11.2018	46.5	24.6	4.9	9.2	7.6	0.31	20.3	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	45.8	25.6	4.8	9.3	6.5	0.29	21.5	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	45.7	24.3	4.7	9.4	5.9	0.35	22.3	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	46.9	25.4	4.8	9.5	5.4	0.34	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	45.8	24.6	4.9	9.8	5.6	0.35	22.3	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	49.8	24.6	4.5	10.2	5.8	0.24	24.5	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	48.7	25.4	4.7	10.3	5.7	0.38	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	49.5	26.5	4.5	10.4	5.8	0.34	24.1	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	50.2	25.4	4.8	10.2	5.9	0.39	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	47.66	25.16	4.73	9.81	6.02	0.33	22.62	<0.001	<0.002	<0.01	<0.001	<0.001
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 : SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3, Pb<0.001 ng/m^3, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

Visiontek Consultancy Services Pvt. Ltd.
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Ref.: Envlab/18/R-9666

AMBIENT AIR QUALITY MONITORING REPORT FOR NOVEMBER-2018 (BUFFER ZONE)

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar**
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer
3. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
	BZ-1: Rugudipunga Village											
17.11.2018	32.6	13.4	<4.0	9.5	<4.0	0.13	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
Monitoring Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
	BZ-2:Samarpeta Village											
17.11.2018	33.6	14.6	4.3	9.4	<4.0	0.11	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
Monitoring Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
	BZ-3:Near Rashol Village											
17.11.2018	33.5	16.9	<4.0	9.4	<4.0	0.15	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	4	--	100	60	80	80	4	--
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob &Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Gas Chromatography	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob &Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Gas Chromatography

BDL Values : SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

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Ref.: Envlab/18/R-9663

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
01.11.2018	49.2	24.6	4.6	9.5	5.3	0.26	20.6	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	50.2	25.4	4.5	9.8	5.4	0.32	20.5	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	51.2	26.4	4.8	9.9	5.6	0.35	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	51.6	25.3	4.6	10.2	5.8	0.34	21.8	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	51.9	24.8	4.8	10.5	5.4	0.36	21.2	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	51.2	23.4	4.9	10.4	5.9	0.34	22.6	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	52.3	24.6	4.4	10.3	5.2	0.35	22.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	53.4	25.6	4.7	10.1	5.1	0.32	24.6	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	54.6	26.4	4.3	10.5	5.2	0.35	25.4	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	51.73	25.17	4.62	10.13	5.43	0.33	22.31	<0.001	<0.002	<0.01	<0.001	<0.001
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 : SO_2< 4 µg/m³, NO_X< 9 µg/m³, O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

Visiontek Consultancy Services Pvt. Ltd.
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Ref.: Envlabs/18/R-9663

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
01.11.2018	49.2	24.6	4.6	9.5	5.3	0.26	20.6	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	50.2	25.4	4.5	9.8	5.4	0.32	20.5	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	51.2	26.4	4.8	9.9	5.6	0.35	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	51.6	25.3	4.6	10.2	5.8	0.34	21.8	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	51.9	24.8	4.8	10.5	5.4	0.36	21.2	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	51.2	23.4	4.9	10.4	5.9	0.34	22.6	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	52.3	24.6	4.4	10.3	5.2	0.35	22.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	53.4	25.6	4.7	10.1	5.1	0.32	24.6	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	54.6	26.4	4.3	10.5	5.2	0.35	25.4	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	51.73	25.17	4.62	10.13	5.43	0.33	22.31	<0.001	<0.002	<0.01	<0.001	<0.001
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 : SO_2< 4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 µg/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

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Ref.: Envlabs/18/R-9664

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
01.11.2018	49.8	24.6	4.3	9.2	4.9	0.21	21.1	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	50.2	24.5	4.6	9.1	4.8	0.22	22.1	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	51.3	25.6	4.5	9.3	4.7	0.24	21.9	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	52.4	25.4	4.2	9.5	4.6	0.19	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	52.4	25.4	4.0	9.4	4.5	0.24	22.4	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	52.3	26.5	4.1	9.6	4.8	0.23	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	54.6	24.8	4.2	9.5	4.7	0.25	21.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	52.8	25.3	4.3	9.6	4.9	0.24	23.4	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	54.6	24.6	4.4	9.2	4.7	0.23	21.6	<0.002	<0.01	<0.001	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	52.27	25.19	4.29	9.38	4.73	0.23	22.32	<0.001	<0.002	<0.01	<0.001	<0.001
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 : SO_2< 4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 µg/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

Date: 01.12.2018

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007
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E-mail : visiontekm@yahoo.co.in, visiontek@gmail.com, Visit us at: www.vcspl.org
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Ref: Enwlab/18/R-966

Date: 01.12.2018

AAQ MONITORING REPORT FOR THE MONTH OF NOVEMBER-2018

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)
01.11.2018	46.5	24.6	4.9	9.2	7.6	0.31	20.3	<0.001	<0.002	<0.01	<0.001	<0.001
05.11.2018	45.8	25.6	4.8	9.3	6.5	0.29	21.5	<0.001	<0.002	<0.01	<0.001	<0.001
08.11.2018	45.7	24.3	4.7	9.4	5.9	0.35	22.3	<0.001	<0.002	<0.01	<0.001	<0.001
12.11.2018	46.9	25.4	4.8	9.5	5.4	0.34	21.6	<0.001	<0.002	<0.01	<0.001	<0.001
15.11.2018	45.8	24.6	4.9	9.8	5.6	0.35	22.3	<0.001	<0.002	<0.01	<0.001	<0.001
19.11.2018	49.8	24.6	4.5	10.2	5.8	0.24	24.5	<0.001	<0.002	<0.01	<0.001	<0.001
22.11.2018	48.7	25.4	4.7	10.3	5.7	0.38	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
26.11.2018	49.5	26.5	4.5	10.4	5.8	0.34	24.1	<0.001	<0.002	<0.01	<0.001	<0.001
29.11.2018	50.2	25.4	4.8	10.2	5.9	0.39	23.5	<0.001	<0.002	<0.01	<0.001	<0.001
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	47.66	25.16	4.73	9.81	6.02	0.33	22.62	<0.001	<0.002	<0.01	<0.001	<0.001
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 :SO_2< 4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
ISO 9001 : 2008
ISO 14001 : 2004
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Ref: nvlab/19/R-396

Date: 01/02/19

AAQ MONITORING REPORT FOR THE MONTH OF JANUARY -2019

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)
01.01.2019	56.4	32.5	5.9	10.3	5.8	0.41	21.2	BDL	BDL	BDL	BDL	BDL
03.01.2019	58.2	26.7	5.0	11.2	5.7	0.23	20.6	BDL	BDL	BDL	BDL	BDL
07.01.2019	54.6	29.5	5.2	10.5	5.6	0.35	21.3	BDL	BDL	BDL	BDL	BDL
10.01.2019	59.8	27.5	5.1	11.1	5.7	0.37	22.5	BDL	BDL	BDL	BDL	BDL
14.01.2019	57.5	26.5	5.3	10.2	5.6	0.39	21.4	BDL	BDL	BDL	BDL	BDL
17.01.2019	56.4	27.5	5.2	11.3	5.4	0.35	22.3	BDL	BDL	BDL	BDL	BDL
21.01.2019	55.2	25.6	5.0	11.0	5.6	0.34	21.2	BDL	BDL	BDL	BDL	BDL
24.01.2019	55.3	28.7	5.4	10.5	5.4	0.36	22.5	BDL	BDL	BDL	BDL	BDL
28.01.2019	54.2	27.8	5.2	11.2	5.6	0.42	21.2	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	**100**	**60**	**80**	**80**	**180**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**
Monthly Average	**56.40**	**28.03**	**5.26**	**10.81**	**5.60**	**0.36**	**21.58**	**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 :SO_2< 4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
Plot No-M-226&23, Chandika Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017905
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Ref: Envts/19/R-397

Date: 01/02/19

AAQ MONITORING REPORT FOR THE MONTH OF JANUARY-2019

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)
01.01.2019	56.5	27.5	4.9	11.2	5.2	0.31	22.5	BDL	BDL	BDL	BDL	BDL
03.01.2019	55.4	24.5	4.8	10.9	5.1	0.32	22.4	BDL	BDL	BDL	BDL	BDL
07.01.2019	56.7	26.5	4.7	10.8	5.2	0.30	22.6	BDL	BDL	BDL	BDL	BDL
10.01.2019	57.8	27.8	4.6	11.2	5.3	0.21	22.8	BDL	BDL	BDL	BDL	BDL
14.01.2019	56.5	26.5	4.5	10.5	5.1	0.31	22.4	BDL	BDL	BDL	BDL	BDL
17.01.2019	57.8	27.5	4.8	10.4	5.2	0.34	22.6	BDL	BDL	BDL	BDL	BDL
21.01.2019	56.8	26.8	4.7	10.2	5.4	0.32	22.5	BDL	BDL	BDL	BDL	BDL
24.01.2019	57.5	27.5	4.9	10.4	5.0	0.32	23.4	BDL	BDL	BDL	BDL	BDL
28.01.2019	56.8	26.5	4.8	10.2	5.2	0.31	22.5	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	56.87	26.79	4.74	10.64	5.19	0.30	22.63	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 :SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
Plot No-M-226&23, Chandika Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 91-674-6451781, 7752017
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Ref: Envts/19/R-398

Date:

AAQ MONITORING REPORT FOR THE MONTH OF JANUARY-2019

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)
01.01.2019	50.2	29.5	5.2	9.9	6.1	0.41	22.3	BDL	BDL	BDL	BDL	BDL
03.01.2019	51.2	28.7	5.3	9.8	5.9	0.42	21.2	BDL	BDL	BDL	BDL	BDL
07.01.2019	52.3	29.8	5.1	9.9	5.9	0.43	22.3	BDL	BDL	BDL	BDL	BDL
10.01.2019	52.4	28.7	5.2	10.2	6.3	0.41	21.3	BDL	BDL	BDL	BDL	BDL
14.01.2019	54.6	29.8	5.4	10.2	5.8	0.23	22.4	BDL	BDL	BDL	BDL	BDL
17.01.2019	52.3	28.5	5.3	10.4	6.2	0.42	22.3	BDL	BDL	BDL	BDL	BDL
21.01.2019	54.0	29.7	5.2	10.3	6.4	0.37	22.5	BDL	BDL	BDL	BDL	BDL
24.01.2019	54.3	28.5	5.1	10.5	6.2	0.39	22.3	BDL	BDL	BDL	BDL	BDL
28.01.2019	55.6	29.7	5.0	9.8	6.3	0.35	22.4	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	52.99	29.21	5.20	10.11	6.12	0.38	22.11	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 :SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

Visiontek Consultancy Services Pvt. Ltd.
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ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/19/R-1438 Date: 02.04.19

AAQ MONITORING REPORT FOR THE MONTH OF MARCH-2019

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
04.03.2019	49.9	30.2	6.6	12.2	7.1	0.48	21.9	BDL	BDL	BDL	BDL	BDL
07.03.2019	50.8	28.8	5.9	12.4	7.4	0.42	21.2	BDL	BDL	BDL	BDL	BDL
11.03.2019	52.8	29.1	5.8	12.8	6.9	0.44	22.4	BDL	BDL	BDL	BDL	BDL
14.03.2019	53.0	29.2	4.2	11.6	7.0	0.41	23.1	BDL	BDL	BDL	BDL	BDL
18.03.2019	53.2	28.9	6.1	12.4	6.8	0.48	22.8	BDL	BDL	BDL	BDL	BDL
21.03.2019	52.6	29.4	6.2	12.2	7.2	0.42	23.6	BDL	BDL	BDL	BDL	BDL
25.03.2019	51.8	30.6	5.7	11.8	7.22	0.40	22.4	BDL	BDL	BDL	BDL	BDL
28.03.2019	53.4	29.1	5.4	11.4	7.46	0.44	23.4	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	52.19	29.41	5.74	12.10	7.14	0.44	22.6	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 :SO_2< 4 µg/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
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Ref.: Envlab/19/R-1439 Date: 02.04.19

AAQ MONITORING REPORT FOR THE MONTH OF MARCH-2019

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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)
04.03.2019	56.2	28.8	4.6	11.2	5.4	0.38	22.4	BDL	BDL	BDL	BDL	BDL
07.03.2019	54.6	26.6	5.1	11.6	5.6	0.32	22.6	BDL	BDL	BDL	BDL	BDL
11.03.2019	50.8	25.8	4.6	12.1	5.8	0.33	23.1	BDL	BDL	BDL	BDL	BDL
14.03.2019	50.2	25.6	4.4	11.8	6.1	0.38	23.4	BDL	BDL	BDL	BDL	BDL
18.03.2019	54.4	26.6	4.2	11.2	6.2	0.36	21.2	BDL	BDL	BDL	BDL	BDL
21.03.2019	52.2	27.2	4.9	12.4	6.4	0.41	22.8	BDL	BDL	BDL	BDL	BDL
25.03.2019	51.8	27.8	4.8	11.6	5.2	0.44	23.2	BDL	BDL	BDL	BDL	BDL
28.03.2019	52.2	28.4	4.7	12.4	5.6	0.42	24.1	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	52.80	27.10	4.66	11.79	5.79	0.38	22.85	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 :SO_2< 4 µg/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, CO-<0.1 mg/m³, NH_3 <20 µg/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Ni<0.01 ng/m³, Pb<0.001 µg/m³, As < 0.001 ng/m³.

For Visiontek Consultancy Services Pvt. Ltd.

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ISO 9001
ISO 14001
OHSAS 18001

Ref.: Env/Rsh/19/R-1440

Date: 02.04

AAQ MONITORING REPORT FOR THE MONTH OF MARCH-2019

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)
04.03.2019	54.2	26.8	6.4	10.8	6.1	0.49	22.9	BDL	BDL	BDL	BDL	BDL
07.03.2019	53.8	29.2	6.2	10.1	6.2	0.44	23.1	BDL	BDL	BDL	BDL	BDL
11.03.2019	53.1	30.2	6.0	10.6	6.4	0.42	22.6	BDL	BDL	BDL	BDL	BDL
14.03.2019	52.6	31.4	6.32	10.4	6.2	0.40	21.8	BDL	BDL	BDL	BDL	BDL
18.03.2019	50.9	32.4	6.41	10.2	6.1	0.38	21.2	BDL	BDL	BDL	BDL	BDL
21.03.2019	50.2	32.6	6.28	10.1	5.9	0.40	23.4	BDL	BDL	BDL	BDL	BDL
25.03.2019	52.9	30.8	6.22	9.9	6.0	0.39	22.5	BDL	BDL	BDL	BDL	BDL
28.03.2019	53.4	31.1	5.94	9.82	6.2	0.36	23.2	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	05	01	20	1.0	06
Monthly Average	**52.64**	**30.56**	**6.22**	**10.24**	**6.14**	**0.41**	**22.59**	**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 :SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
E-mail : visiontekin@yahoo.co.in, visiontekin@gmail.com, Visit us at: www.vcspl.org

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)

Ref.: Env/Rsh/19/R-1441

Date: 02.

AMBIENT AIR QUALITY MONITORING REPORT FOR MARCH-2019 (BUFFER ZONE)

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar**
2. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer
3. Sample collected by : VCSPL Representative in presence of TATA Representative

Monitoring Date	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)
	BZ-1: Rugudipunga Village											
20.03.2019	38.2	22.4	BDL	9.2	BDL	0.42	BDL	BDL	BDL	BDL	BDL	BDL
Monitoring Date	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)
	BZ-2:Samarpeta Village											
20.03.2019	36.6	23.8	4.6	10.2	BDL	0.34	BDL	BDL	BDL	BDL	BDL	BDL
Monitoring Date	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)
	BZ-3:Near Rashol Village											
20.03.2019	40.1	25.4	BDL	10.6	BDL	0.38	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	--	100	60	80	80	4	--
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob &Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Gas Chromatography	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob &Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Gas Chromatography

BDL Values :SO_2< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3.

For Visiontek Consultancy Services Pvt. Ltd.

Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
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ANNEXURE-II
Noise Report

Visiontek Consultancy Services Pvt. Ltd.
(An Enviro Engineering Consulting Cell)
ISO 9001 : 2
ISO 14001 : 20
OHSAS 18001 : 20

Ref.: Envlab6/19 / R-1446 Date: 02.04

NOISE MONITORING REPORT- MARCH-2019

1.Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar**
2.Recorded by : VCSPL Representative in presence of TATA Representative

Sl No	Date	Name of Location	Unit	Day Time	Night Time
A.Site of the plant: Jigging Plant					
1	13-03-2019	Flexo Belt Area (Ground Floor)	dB(A)	78.2	70.8
2		Jaw crusher		76.6	71.1
3		Cone crusher		72.8	70.6
4		Vibrating screen area		78.8	72.8
5		Flexo belt Top Area		88.2	78.8
6		Near Conveyor Belt-1		84.4	81.1
7		Near Conveyor Belt-2		82.7	79.8
8		Apron Feeder Area		71.4	70.2
9		Control room		70.2	66.8
10		Jig area		69.9	61.8
11		Jig rejects dewatering screen area		71.4	64.8
12		Conveyer belt-iii		78.2	71.2
13		Dewatering Spiral Classifier Area		81.2	78.2
B. Site of the Plant: ARC Furnace					
1	13-03-2019	Compressor room	dB(A)	80.1	72.8
2		CO gas Compressor		85.4	78.8
3		Tapping Floor(4M)		79.8	70.2
4		Furnace floor (8m)		74.2	66.8
5		Hydraulic system floor (15m)		68.8	61.2
6		Feeding ring area (21m)		72.8	66.2
7		Control Room		68.9	61.8
8		Day bin Area		70.2	62.8
9		Cast House Area		68.6	61.4
C.Site of the plant: GFPS Area					
1	13-03-2019	Compressor & pump house	dB(A)	98.0	91.8
2		Ball mill area		88.0	82.2
3		Skip area		91.1	88.8
4		Plate feeder area		90.6	86.4
5		Burner floor		88.2	81.2
6		Sala floor		87.4	80.2
7		Palletizing Area		82.8	78.8
8		Control Room		78.8	72.4
9		Drum Filter Area		84.2	78.8
10		Vaccum Pump		90.6	81.1
11		Blower Room		91.1	84.8
CPCB STANDARD				**75**	**70**

For Visiontek Consultancy Services Pvt.Ltd.

Plot No.-M-22&23, Chandaka Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel. : 7752017905
E-mail : visiontekin@yahoo.co.in, visiontekin@gmail.com, Visit us at: www.vcspl.org

ANNEXURE-III
Stack Analysis Report

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/181 R-8994 Date: 01/11/18

STATIONARY EMISSION MONITORING REPORT FOR OCTOBER-2018

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar .**
2. Date of Sampling : 23.10.2018
3. Sampling Location : **ST-I Stack attached to Arc Furnace**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 24.10.2018 to 28.10.2018

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-I	
Stack Temperature	^0C	32.0	--
Velocity of Flue Gas	m/sec	7.09	--
Concentration of Particulate Matter as PM	mg/Nm^3	11.6	**50**
Sulphur dioxide as SO_2	mg/Nm^3	2.12	**600**
Oxides of Nitrogen as NO_x	mg/Nm^3	13.2	**300**
Carbon Monoxide as CO	mg/Nm^3	94.8	--

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

*For **Visiontek Consultancy Services Pvt. Ltd.***

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Enulab/18/R - 8995

Date: 01/11/18

STATIONARY EMISSION MONITORING REPORT FOR OCTOBER-2018

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Date of Sampling : 25.10.2018
3. Sampling Location : **ST-II Stack attached to GFPS**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 26.10.2018 to 30.10.2018

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-II	
Stack Temperature	^0C	53.0	--
Velocity of Flue Gas	m/sec	9.72	--
Concentration of Particulate Matter as PM	mg/Nm^3	12.0	**75.0**
Sulphur dioxide as SO_2	mg/Nm^3	2.1	--
Oxides of Nitrogen as NO_x	mg/Nm^3	7.9	**1988.5**
Carbon Monoxide as CO	mg/Nm^3	8.2	**150.0**

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

*For **Visiontek Consultancy Services Pvt. Ltd.***

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-9667

Date: 01.12.2018

STATIONARY EMISSION MONITORING REPORT FOR NOVEMBER-2018

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar .**
2. Date of Sampling : 14.11.2018
3. Sampling Location : **ST-I Stack attached to Arc Furnace**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 15.11.2018 to 18.11.2018

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-I	
Stack Temperature	^0C	32.0	--
Velocity of Flue Gas	m/sec	7.09	--
Concentration of Particulate Matter as PM	mg/Nm^3	11.6	50
Sulphur dioxide as SO_2	mg/Nm^3	2.12	600
Oxides of Nitrogen as NO_x	mg/Nm^3	13.2	300
Carbon Monoxide as CO	mg/Nm^3	94.8	--

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/18/R-9668

Date: 01.12.2018

STATIONARY EMISSION MONITORING REPORT FOR NOVEMBER-2018

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Date of Sampling : 14.11.2018
3. Sampling Location : **ST-II Stack attached to GFPS**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 15.11.2018 to 18.11.2018

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-II	
Stack Temperature	^0C	53.0	--
Velocity of Flue Gas	m/sec	9.72	--
Concentration of Particulate Matter as PM	mg/Nm^3	12.0	75.0
Sulphur dioxide as SO_2	mg/Nm^3	2.1	--
Oxides of Nitrogen as NO_x	mg/Nm^3	7.9	1988.5
Carbon Monoxide as CO	mg/Nm^3	8.2	150.0

CONSULTANCY SERVICES PVT. LTD. NOIDA

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/19/R-400

Date: 01/02/19

STATIONARY EMISSION MONITORING REPORT FOR JANUARY-2019

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar .**
2. Date of Sampling : 15.01.2019
3. Sampling Location : **ST-I Stack attached to Arc Furnace**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 16.01.2019 To 19.01.2019

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-I	
Stack Temperature	^0C	32.0	--
Velocity of Flue Gas	m/sec	4.06	--
Concentration of Particulate Matter as PM	mg/Nm^3	32.8	**50**
Sulphur dioxide as SO_2	mg/Nm^3	10.2	**600**
Oxides of Nitrogen as NO_x	mg/Nm^3	15.6	**300**
Carbon Monoxide as CO	mg/Nm^3	82.0	--

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: Envlab/19/R-401 Date: 01/02/19.

STATIONARY EMISSION MONITORING REPORT FOR JANUARY-2019

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Date of Sampling : 15.01.2019
3. Sampling Location : **ST-II Stack attached to GFPS**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 16.01.2019 to 19.01.2019

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-II	
Stack Temperature	^0C	35.0	--
Velocity of Flue Gas	m/sec	10.37	--
Concentration of Particulate Matter as PM	mg/Nm^3	23	**75.0**
Sulphur dioxide as SO_2	mg/Nm^3	8.9	--
Oxides of Nitrogen as NO_x	mg/Nm^3	7.56	**1988.5**
Carbon Monoxide as CO	mg/Nm^3	9.3	**150.0**

VISIONTEK CONSULTANCY SERVICES PVT LTD

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref: Envlab/19/R- 1448(I)

Date: 02.04.2019

STATIONARY EMISSION MONITORING REPORT FOR MARCH-2019

1. Name of Industry : **Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar .**
2. Date of Sampling : 21.03.2019
3. Sampling Location : **ST-I Stack attached to Arc Furnace**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 22.03.2019 TO 26.03.2019

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-I	
Stack Temperature	^0C	42.0	--
Velocity of Flue Gas	m/sec	5.6	--
Concentration of Particulate Matter as PM	mg/Nm^3	40.8	**50**
Sulphur dioxide as SO_2	mg/Nm^3	12.8	**600**
Oxides of Nitrogen as NO_x	mg/Nm^3	16.4	**300**
Carbon Monoxide as CO	mg/Nm^3	74.0	--

VISIONTEK CONSULTANCY SERVICES PVT. LTD. NOIDA

For Visiontek Consultancy Services Pvt. Ltd.

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001 : 2008
ISO 14001 : 2004
OHSAS 18001 : 2007

Ref.: ENV105/19/R-1449(I)

Date: 02.04.2019

STATIONARY EMISSION MONITORING REPORT FOR MARCH-2019

1. Name of Industry : **M/s Ferro Alloys Plant Bamnipal, (M/s TATA Steel Limited); Keonjhar.**
2. Date of Sampling : 21.03.2019
3. Sampling Location : **ST-II Stack attached to GFPS**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative
6. Date of Analysis : 22.03.2019 TO 26.03.2019

Parameters	Unit of Measurement	Analysis Results	Standard MoEF & CPCB
		ST-II	
Stack Temperature	^0C	38.8	--
Velocity of Flue Gas	m/sec	10.2	--
Concentration of Particulate Matter as PM	mg/Nm^3	21.8	**75.0**
Sulphur dioxide as SO_2	mg/Nm^3	8.1	--
Oxides of Nitrogen as NO_x	mg/Nm^3	7.34	**1988.5**
Carbon Monoxide as CO	mg/Nm^3	9.12	**150.0**

CONSULTANCY SERVICES ODISHA

For Visiontek Consultancy Services Pvt. Ltd.

ANNEXURE-IV

Details of CSR funds allocated and released Expenditure against CSR Activities

Details of CSR funds allocated and released Expenditure against CSR Activities				
Period	**expenditure Planning for a year in (Rs Cr.)**	**Actual Expenditure for C.S.R till date in Rs Cr.**	**Name Of the CSR activities**	**Wheather Completed or Not**
2018-19	5.09 Cr	4.19Cr	Health Camp,Static clinic,mobile medical facility,Construction of Deep borre well at different village, School Improvement Project (1000 Schools and Hans Foundation),Women Empowerment Programmes,Construction of Kalyan Mandap at devgaon, community center	Completed

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