



HALF YEARLY COMPLIANCE REPORT
(Period from 01.04.2017 to 30.09.2017)

OF

Ferro Alloys Plant, Joda
Tata Steel Limited

P.O- Joda, Dist. Keonjhar
Odisha- 758034

ENVIRONMENTAL CLEARANCE GRANTED
VIDE LETTER NO. - J-11011/03/2012-IA.II(I) DATED- 05th November 2015
ISSUED BY
GOVT. OF INDIA, MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, NEW DELHI.



9/c

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

Ref. No- FAPJ/ 5277 /2017

Date: 25-12-2017

Sub- Submission of six monthly compliance report on implementation of environmental safe guards of Ferro Alloys Plant, Joda for the period from April'17 to Sept'17.

Ref- Ministry of Environment & Forests Letter No.J-11011/03/2012-IA .II (I) dated 5th November 2015.

Dear Sir,

As per EIA Notification, We are herewith submitting six monthly compliance report in respect of stipulated environmental clearance condition of Ferro Alloys Plant, Joda for the period from April'17 to Sept'17.

We are also sending you softcopy of the report to your good office on mail: roez.bsr-mef@nic.in for your perusal.

We trust that measures taken towards environmental safe guards comply with the stipulated environmental clearance condition. We look forward to your further guidance which shall certainly help us in our endeavor for further improve upon our Environmental Management Practices.

Thanking you,

Yours faithfully,
For: TATA STEEL LTD

Head,
Ferro Manganese Plant

Encl: as above

Copy to MoEF, New Delhi

- “ “ CPCB, Zonal Office Kolkata
- “ “ OSPCB, Bhubaneswar
- “ “ Regional office, Keonjhar



TATA STEEL

Ferro Alloys & Minerals Division

Ferro Alloys Plant, Joda – 758034, Orissa, India

Tel : 09238100945, e-mail – head.office@tatasteel.com

Regd. Office : Bombay House, 24 Homi Mody Street, Mumbai – 400 001

Corporate Identity Number L27100MH1907PLC600260 . Website : www.tatasteel.com

A. SPECIFIC CONDITIONS:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.
 - **It will be strictly adhered after commissioning of plant. Presently we have been installed four nos. ambient air monitoring stations for monitoring air emission and the reports are submitted on monthly basis to SPCB, Odisha. Monitoring results for last six months i.e April'2017 to Sept'2017 is enclosed as Annexure-I**
- ii. Stack of adequate height & diameter with continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz, Electrostatic precipitator (ESP), bag house, bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm³ and installing energy efficient technology.
 - **There are four nos. of stacks in existing plant and all having adequate height and diameter. Online stack monitoring system installation has been completed. A At present four nos. of Gas cleaning plants are operational among two of them are in operation and two are kept for stand-by to ensure emission level within the norms prescribed by CPCB. Same facility will be provided to forthcoming project. Stack Monitoring results for last six months i.e April'2017 to Sept'2017 is enclosed as Annexure-II.**
- iii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826 (E) dated 16th November, 2009 shall be followed.
 - **Existing plant emissions are within the specified limit prescribed by national ambient air quality emission standards; also the same will be followed after commissioning of forthcoming Plant. Ambient Air quality Monitoring results for last six months April'2017 to Sept'2017 is enclosed as Annexure-I**
- iv. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should be followed. New standards for the sponge iron plant issued by the Ministry vide G.S.R. 414 (E) dated 30th May, 2008 should be followed.
 - **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. Monitoring results of Gaseous emission levels including secondary fugitive emissions from all the sources for last six months i.e April'2017 to Sept'2017 is enclosed as Annexure-I**

- v. water sprinkling arrangements as well as dry fog system to control fugitive emission shall be undertaken.
- **For dry fogging one Mobile water sprinkler cum mist canon is in operation. 9 Nos. of Water sprinkling system was installed at all critical location for existing plant same will be installed after project execution. (Include photographs as Annexure III)**
- vi. Tap hole emissions shall be taken to GCP system by providing proper hood and suction system.
- **Two nos. of Fume extraction system is in place for existing plant and same system will be provided to forthcoming project. (Include photographs as Annexure IV)**
- vii. Efforts should further be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources. Use of air cooled condensers shall be explored and closed circuit cooling system should be provided to reduce water consumption and water requirement shall be modified accordingly.
- **It will be complied. For Existing Plant close circuit cooling system is in operation & same will be followed for forthcoming plant.**
- viii. All the effluent should be treated and used for ash handling, dust suppression and green belt development. No effluent shall be discharged and 'zero' discharge shall be adopted. Sanitary sewage should be treated in septic tank followed by the soak pit.
- **Now the existing plant is a zero effluent discharge plant. STP is in operation for Sewage treatment, and the recycled water is being utilised for gardening purpose. Photograph is included in Annexure V)**
- ix. Regular monitoring of surface, sub-surface and ground water should be ensured and treated waste water should meet the norms prescribed by the State Pollution Control Board or described under the E (P) Act 1986 whichever are more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to the Ministry's Regional Office at Bhubaneswar, SPEB and CPCB.
- **Monitoring of ground water and surface water is been carry out on regular basis. Leachate study for effluent generated will be carried out soon. (details of monitoring results are given in Annexure VI)**

- x. Slag produced in Ferro Manganese (Fe-Mn) production should be used in manufacture of Silico Manganese (Si-Mn). All the other Ferro alloy slag should be used in the preparation of building materials.
- **Slag produced from existing FeMn plant are, Partly used in the process as a raw material for FeMn production and rest are sold to the Ferro Alloys Industry.**
- xi. Risk and Disaster Management Plan along with the mitigation measures should be prepared and a copy submitted to the Ministry's Regional Office at Bhubaneswar, SPCB and CPCB within 3 months of issue of environment clearance letter.
- **Risk and disaster management plan along with the mitigation measures was submitted vide Letter no. FAPJ/4249/2016, dtd. 01.02.2016 to the central Pollution control board, New Delhi, Vide letter no. FAP(J)/4250/2016, dtd. 01.02.2016, to the Ministry of Environment & Forest, Eastern Regional Office, Bhubaneswar and vide letter no. FAP(J)/4251/2016, dtd. 01.02.2016 to State Pollution Control Board, Bhubaneswar. Copy of the letter is enclosed as Annexure-VII.**
- xii. Green belt shall be developed in 33% of plant area. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.
- **Plantation programme is regularly done. Plant species are selected as per CPCB guidelines. In the Year 2017-18 till date total 1000 nos. of Plantation done & 2130 nos. of seeding distributed.**
- xiii. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants shall be implemented.
- **It will be followed.**
- xiv. At least 5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Chennai. Implementation of such program shall be ensured accordingly in a time bound manner.
- **It will be done. The details of expenditure towards CSR activity done along with details are given in Annexure XI.**
- xv. Provisions shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project
- **It has been complied. There is no labour camp within the Site.**

B. GENERAL CONDITIONS :

- i. The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and the State Government.
 - **It will be strictly followed. Once the expansion work starts conditions shall be adhered to.**
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
 - **No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).**
- iii. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, PM2.5, SO2 and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/CPCB once in six months.
 - **At present four ambient air quality monitoring stations are installed at the downward direction in consultation with the SPCB. . Ambient air quality report and stack emission reports are submitted monthly to Ministry including its Regional Office at Bhubaneswar and SPCB, Bhubaneswar. Monitoring results for last six months i.e April'2017 to Sept'2017 is enclosed as Annexure-I**
- iv. Industrial waste water shall be properly collected, treated so as to conform to the standard prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.
 - **It has been followed .Treated waste water is utilised for plantation/gardening purpose.**
- v. 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 levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).
 - **It has been strictly adhered. Acoustic enclosures are provided for DG sets. Monitoring results for last six months i. April'2017 to Sept'2017 is enclosed as Annexure-VIII**
- vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

- **Periodic medical check-ups were conducted yearly. Last medical check-up was done on December'2016 and 453 nos. of employees are examined including contractual employees. Records were maintained as per Orissa factory rule it is shown in Annexure IX.**
- vii. 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.
- **It will be followed.**
- viii. 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 social-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.
- **Complied to environmental protection measures and safeguards recommended in the EIA/EMP report. Social-economic development activities in the surrounding villages were carried out with Tata Steel Rural Development Society. Details of Expenditure made towards CSR activities are given in Annexure XI.**
- ix. Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.
- **It will be adhered.**
- x. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.

Already Complied. Intimation of obtaining Environmental Clearance is given to Zila Parishad vide letter No. FAPJ/4136/2015. Copy of Letter is given in Annexure-X.

- xi. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the

same periodically. It shall simultaneously be sent to the Regional Office of the MoEFCC at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

Status of compliance will be uploaded in the website along with the monitored data. It will be sent to regional office of MoEFCC at Bhubaneswar, SPCB, Bhubaneswar & regional office, Keonjhar.

The criteria pollutant levels PM 10, PM 2.5, SO2, NOX, CO, Ambient air parameters along with stack emission parameters are displayed at the company's main gate. Photograph is given in the Annexure XII.

- xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEFCC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of the Ministry at Bhubaneswar/CPCB/SPVCB shall monitor the stipulated conditions.

- **It has been complied.**

- xiii. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEFCC) at Bhubaneswar by e-mail.

- **The Environment statement in Form V was submitted for the year 2016-17 on 21st september'2017 vide letter no.- FAPJ/5181/2017 to SPCB, Bhubaneswar and Regional office, Keonjhar And the compliance of environmental conditions is uploaded on the website.**

- xiv. 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 SPCB and may also be seen at website of the Ministry of Environment, Forests and climate change (MoEFCC) at <http://envfor.nic.in>. This shall be advertised with in 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 should be forwarded to the Regional Office at Bhubaneswar.
- **Information regarding Environmental clearance issued is published on The Sambad Oriya newspaper of 13th November issue and in The Statesman English Newspaper of 12th November issue. Details of publication is given in Annexure XIV.**
- xv. 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.
- **It will be strictly followed.**


FERRG MANGANESE PLANT
TATA STEEL LTD
JODA

Annexure # 1
Ambient Air quality Report From 01-04-2017 To 30-09-2017



Mitra S. K. Private Limited

APP O - BARBIL, Ward No.6
Dist. Keonjhar, Odisha - 758036
CIN: U51909WB1998PTC023037
T : +91 94370 05615, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No. BBL/ENV/2083

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/05/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (µg/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.04.2017	69	39	5.9	20.8	<10.0	12.8	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.04.2017	58	31	5.5	18.8	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.04.2017	73	41	6.2	19.6	11.4	13.4	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.04.2017	78	44	7.5	25.8	11.8	14.6	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.04.2017	75	42	6.2	23.6	12.2	13.8	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.04.2017	59	33	5.8	19.3	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.04.2017	67	38	6.3	21.5	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.04.2017	75	43	6.6	23.2	12.2	14.2	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	69.3	38.9	6.3	21.6	10.8	12.4	0.24	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on ALPHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, 2014

Checked by:

For Mitra S. K. Private Limited
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Strachy Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

APP O - BARBIL, Ward No.6
Dist. Keonjhar, Odisha - 758036
CIN: U51909WB1998PTC023037
T : +91 94370 05615, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No. BBL/ENV/2084

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/05/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (µg/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.04.2017	74	41	7.2	25.6	11.4	15.2	0.26	<0.02	5.2	<1.0	<2.08	<0.4
2	06/07.04.2017	61	34	6.2	21.6	10.6	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.04.2017	69	39	6.6	22.6	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.04.2017	73	41	6.6	23.5	11.2	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.04.2017	78	43	7.3	25.2	10.6	18.4	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.04.2017	62	34	5.8	21.3	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.04.2017	68	41	5.4	22.5	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.04.2017	79	44	7.5	26.4	12.6	15.6	0.28	<0.02	4.8	<1.0	<2.08	<0.4
	Avg. Monthly	70.5	39.6	6.7	23.6	10.8	12.4	0.24	0.02	4.2	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on ALPHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, 2014

Checked by:

For Mitra S. K. Private Limited
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Strachy Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

ADP O. BARBIL Ward No.6
Dist. Keonjhar, Odisha - 758025
CIN: U51909WB1956PNC023027
T : +91 94370 09815, 94370 09820, 94370 75209
E : barbil@mitrask.com
W : www.mitrask.com



DATE: 02/05/2017

Ref. No.BBL/ENV/2085

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.04.2017	70	39	6.6	23.4	12.6	16.2	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.04.2017	61	33	5.6	20.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.04.2017	65	36	6.1	21.8	<10.0	12.8	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.04.2017	68	38	6.3	22.6	11.4	13.4	0.23	<0.02	4.2	<1.0	<2.08	<0.4
5	17/18.04.2017	73	41	6.8	24.5	12.6	16.4	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.04.2017	50	28	5.4	18.4	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.04.2017	64	35	5.8	22.3	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.04.2017	67	38	6.1	23.6	<10.0	10.2	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		64.8	36.0	6.1	22.1	10.8	12.4	0.22	0.02	4.1	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:



For Mitra S. K. Private Limited
Authorized Signatory

T: 91 33 2217249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shyachi Centre 15th Floor, 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

Mitra S. K. Private Limited

ADP O. BARBIL Ward No.6
Dist. Keonjhar, Odisha - 758025
CIN: U51909WB1956PNC023027
T : +91 94370 09815, 94370 09820, 94370 75209
E : barbil@mitrask.com
W : www.mitrask.com



DATE: 02/06/2017

Ref. No.BBL/ENV/2140

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.05.2017	70	39	6.9	17.9	<10.0	<10.0	0.16	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	65	33	6.3	20.2	10.2	15.2	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017	50	25	5.2	18.5	10.8	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.05.2017	45	27	4.6	16.3	<10.0	14.3	0.15	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.05.2017	41	20	5.1	15.2	11.6	16.9	0.13	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.05.2017	63	38	5.4	14.7	11.3	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/25.05.2017	43	23	4.3	20.3	<10.0	18.3	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.05.2017	62	35	6.9	19.6	10.4	14.2	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.05.2017	60	32	6.5	18.7	<10.0	<10.0	0.15	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		55.4	30.2	5.7	17.9	10.5	13.2	0.19	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by: Ananta Kumar Raha



For Mitra S. K. Private Limited
Authorized Signatory

T: 91 33 2217249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shyachi Centre 15th Floor, 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India

AMP O. BAREIL Ward No-6
Dist. Kancher. Odisha - 755036
CIN: US1909VVB1956PTC023037
T : +91 94370 09615, 94370 09620, 94370 78269
E : baril@mitrask.co.in
W : www.mitrask.com

DATE: 02/06/2017

Ref. No. BBL/ENV/2141

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.05.2017	73	40	6.5	22.7	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	65	37	6.9	19.3	11.2	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017	50	30	5.3	16.5	10.3	11.2	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.05.2017	45	27	4.6	14.7	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.05.2017	42	23	4.3	14.1	10.9	12.3	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.05.2017	55	21	5.9	20.3	<10.0	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/25.05.2017	67	35	6.6	16.5	12.3	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.05.2017	71	39	7.2	15.8	<10.0	12.9	0.16	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.05.2017	76	42	6.3	23.1	<10.0	<10.0	0.14	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	60.4	32.7	6.0	18.1	10.5	10.7	0.22	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

For Mitra S. K. Private Limited
Authorized Signatory

Checked by:-

Ananta Kumar Raha

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shraoch Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



AMP O. BAREIL Ward No-6
Dist. Kancher. Odisha - 755036
CIN: US1909VVB1956PTC023037
T : +91 94370 09615, 94370 09620, 94370 78269
E : baril@mitrask.co.in
W : www.mitrask.com

DATE: 02/06/2017

Ref. No. BBL/ENV/2142

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.05.2017	60	34	8.1	26.2	<10.0	14.3	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	72	39	7.5	25.3	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017	65	31	5.2	21.6	<10.0	<10.0	0.16	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.05.2017	52	26	4.9	18.5	12.3	16.2	0.13	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.05.2017	45	21	4.4	16.3	11.2	19.6	0.09	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.05.2017	60	32	5.1	20.5	10.6	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/25.05.2017	65	37	6.2	24.3	<10.0	12.5	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.05.2017	72	40	7.1	23.5	12.6	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.05.2017	63	36	5.6	20.3	<10.0	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	61.6	32.9	6.0	21.8	10.7	12.5	0.21	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

For Mitra S. K. Private Limited
Authorized Signatory

Checked by:-

Ananta Kumar Raha

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shraoch Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

ANP O, BAREIL Ward No-6
Dist. Keonjhar, Odisha - 758035
CIN: U51909WB1995PTC023037
T : +91 9437009815, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



DATE: 02/06/2017

Ref. No. BBL/ENV/2143

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.05.2017	68	35	6.9	21.6	<10.0	14.7	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.05.2017	63	30	6.5	23.2	<10.0	15.2	0.13	<0.02	<4.0	<1.0	<2.08	<0.4
3	08/09.05.2017	57	28	5.1	20.5	11.3	11.7	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
4	11/12.05.2017	52	25	5.3	19.4	12.3	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
5	15/16.05.2017	49	19	4.8	16.3	<10.0	12.6	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
6	18/19.05.2017	54	29	5.6	14.5	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
7	22/25.05.2017	63	37	6.3	21.5	11.9	<10.0	0.16	<0.02	<4.0	<1.0	<2.08	<0.4
8	25/26.05.2017	59	29	5.2	25.7	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
9	29/30.05.2017	60	33	5.9	18.7	<10.0	13.7	0.17	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	58.3	29.4	5.7	20.2	10.6	12.0	0.21	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

For Mitra S. K. Private Limited

Authorised Signatory

Checked by:-

Ananta Kumar Reddy

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shreechi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

ANP O, BAREIL Ward No-6
Dist. Keonjhar, Odisha - 758035
CIN: U51909WB1995PTC023037
T : +91 9437009815, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



DATE: 02/07/2017

Ref. No. BBL/ENV/2263

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	05/06.06.2017	78	40	4.7	26.4	18.2	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
2	08/09.06.2017	85	42	5.2	27.4	24.2	16.7	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	81	41	4.9	28.3	19.4	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	78	37	5.0	25.9	17.6	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
5	19/20.06.2017	48	26	4.8	21.2	13.4	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
6	22/23.06.2017	45	24	4.5	19.4	<10.0	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
7	26/27.06.2017	42	23	4.4	18.2	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	39	21	4.2	17.6	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	62.0	31.8	4.7	23.1	15.4	10.8	0.26	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

For Mitra S. K. Private Limited

Authorised Signatory

Checked by:-

BB

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shreechi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

ANP O BARBIL Ward No-6
Dist. Keonjhar, Odisha - 758036
CIN. U61809WB1966PTCO23037
T : +91 94370 09616 94370 09620, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No. BBL/ENV/2264

DATE: 02/07/2017

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	05/06.06.2017	92	47	5.6	24.1	18.7	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
2	08/09.06.2017	94	50	5.4	27.1	26.4	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	90	48	5.9	28.5	21.9	<10.0	0.33	<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	91	45	5.0	26.4	27.4	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
5	19/20.06.2017	56	30	4.8	23.2	16.5	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
6	22/23.06.2017	52	28	4.9	21.6	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
7	26/27.06.2017	49	26	4.6	19.8	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	44	23	4.2	18.7	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	71.0	37.1	5.1	23.7	17.6	10.0	0.26	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0008 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shree Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

ANP O BARBIL Ward No-6
Dist. Keonjhar, Odisha - 758036
CIN. U61809WB1966PTCO23037
T : +91 94370 09616 94370 09620, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No. BBL/ENV/2265

DATE: 02/07/2017

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	05/06.06.2017	92	47	5.7	24.3	23.7	<10.0	0.36	<0.02	<4.0	<1.0	<2.08	<0.4
2	08/09.06.2017	85	44	6.8	28.1	25.7	18.4	0.43	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	95	50	5.7	27.1	21.3	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	91	47	5.9	26.5	21.8	<10.0	0.35	<0.02	<4.0	<1.0	<2.08	<0.4
5	19/20.06.2017	54	28	5.4	22.2	18.2	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
6	22/23.06.2017	51	26	5.2	21.6	16.2	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
7	26/27.06.2017	48	24	5.6	22.4	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	46	23	5.1	20.6	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	70.3	36.1	5.7	24.1	18.4	11.5	0.30	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK /E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0008 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shree Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist. Keonjhar, Odisha - 752036
CIN. US1839A01556PTC023037
T : +91 94370 09815 94370 09820 94370 78265
E : barbil@mitrask.com
W : www.mitrask.com



Ref.No.BBL/ENV/2266

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/07/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	05/06.06.2017	68	36	5.4	23.9	18.3	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
2	08/09.06.2017	74	38	5.3	24.8	20.1	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	12/13.06.2017	82	43	5.6	27.5	23.3	<10.0	0.32	<0.02	<4.0	<1.0	<2.08	<0.4
4	15/16.06.2017	77	38	5.2	24.9	<10.0	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
5	19/20.06.2017	46	24	4.8	19.6	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
6	22/23.06.2017	41	22	4.6	18.4	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	26/27.06.2017	38	20	4.2	16.2	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/30.06.2017	38	19	4.4	15.8	<10.0	<10.0	0.17	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	58.0	30.0	4.9	21.4	13.0	12.0	0.25	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part 11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Authorised Signatory

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist. Keonjhar, Odisha - 752036
CIN. US19059WB1956PTC023037
T : +91 94370 09815 94370 09820 94370 75265
E : barbil@mitrask.com
W : www.mitrask.com



DATE: 02/08/2017

Ref.No.BBL/ENV/2329

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.07.2017	52	27	4.5	25.2	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.07.2017	58	31	5.9	27.8	<10.0	<10.0	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	64	35	6.2	29.6	14.7	11.7	0.33	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	48	25	4.9	21.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.07.2017	53	28	4.8	23.7	21.5	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.07.2017	46	23	4.5	21.2	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.07.2017	35	17	4.4	18.6	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	59	31	5.2	22.5	12.3	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	51.9	27.1	5.1	23.8	12.3	10.2	0.25	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part 11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Authorised Signatory

Mitra S. K. Private Limited

ADP O BARBIL Ward No.6
Dist: Keonjhar, Odisha - 756036
CIN: UB1909WB1956P1C023037
T: +91 94370 09616 94370 09620 94370 75269
E: barbil@mitrask.com
W: www.mitrask.com



Ref. No.BBL/ENV/2330

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/08/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.07.2017	57	30	5.8	24.1	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.07.2017	66	34	6.2	25.4	12.4	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	71	38	6.9	27.8	15.2	<10.0	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	54	29	5.4	24.6	<10.0	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.07.2017	58	31	6.1	25.3	<10.0	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.07.2017	51	27	5.5	23.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.07.2017	46	24	4.8	19.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	56	30	4.5	23.9	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	57.4	30.4	5.7	24.2	10.9	10.0	0.27	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff.2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Bussed on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0066 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Sirauchi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

ADP O BARBIL Ward No.6
Dist: Keonjhar, Odisha - 756036
CIN: UB1909WB1956P1C023037
T: +91 94370 09616 94370 09620 94370 75269
E: barbil@mitrask.com
W: www.mitrask.com



Ref. No.BBL/ENV/2331

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/08/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.07.2017	61	33	6.2	25.6	<10.0	<10.0	0.34	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.07.2017	67	36	6.8	27.4	12.7	<10.0	0.38	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	74	40	7.2	28.3	16.4	<10.0	0.42	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	59	32	5.8	25.8	<10.0	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.07.2017	66	35	6.4	23.9	13.2	<10.0	0.36	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.07.2017	58	31	5.5	23.2	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.07.2017	49	26	5.2	21.6	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	63	34	5.6	24.8	<10.0	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	62.1	33.4	6.1	25.1	11.5	10.0	0.32	0.02	4.0	1.0	2.08	0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff.2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Bussed on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited
Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0066 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Sirauchi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

AMP O, BARBIL, Ward No-6
Dist. Keonjhar, Odisha - 758035
CIN: U51909WB1956P1C023037
T : +91 94370 09816, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No. BBL/ENV/2332

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near 132 KV

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 02/08/2017

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	03/04.07.2017	54	28	5.2	23.2	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	06/07.07.2017	61	32	5.8	24.6	13.2	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
3	10/11.07.2017	66	35	6.2	25.5	15.6	<10.0	0.3	<0.02	<4.0	<1.0	<2.08	<0.4
4	13/14.07.2017	52	27	4.8	22.8	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
5	17/18.07.2017	57	31	5.4	23.6	10.8	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
6	20/21.07.2017	49	25	4.8	20.4	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
7	24/25.07.2017	43	22	4.4	19.8	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
8	27/28.07.2017	50	26	4.8	22.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	54.0	28.3	5.2	22.8	11.2	10.0	0.26	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 10th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory

T: 91 33 22172240 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

AMP O, BARBIL, Ward No-6
Dist. Keonjhar, Odisha - 758035
CIN: U51909WB1956P1C023037
T : +91 94370 09816, 94370 09820, 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com

DATE: 02/09/2017

Ref. No. BBL/ENV/2362

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Main Gate

AMBIENT AIR QUALITY MONITORING REPORT

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.08.2017	58	30	5.8	23.4	12.6	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.08.2017	39	19	4.8	19.2	10.4	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.08.2017	51	27	5.2	21.6	10.4	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
4	10/11.08.2017	47	23	5.0	20.8	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.08.2017	42	21	4.8	19.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
6	17/18.08.2017	36	17	4.5	18.6	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	54	29	5.4	22.5	11.2	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
8	24/25.08.2017	38	18	4.6	19.2	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
9	28/29.08.2017	44	21	4.8	21.2	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	2.08	0.4
	Avg. Monthly	45.4	22.8	5.0	20.7	10.5	10.0	0.21	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 10th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part-10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff. 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

For Mitra S. K. Private Limited

Authorised Signatory

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



Mitra S. K. Private Limited

AWP O BARBIL Ward No-6
 Dist. Keonjhar, Orissa - 755035
 CIN: U61909WB1966PTC023037
 T : +91 94370 08615 94370 09620 94370 75269
 E : barbil@mitrask.com
 W : www.mitrask.com

DATE: 02/09/2017

Ref. No: BBL/ENV/2363

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
 Address : FAP Joda Plant
 Location : Ore Stack Yard Area (Near Well Pump)

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.08.2017	64	34	6.2	24.2	13.2	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.08.2017	42	21	5.0	19.8	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.08.2017	57	30	5.4	23.2	11.8	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
4	10/11.08.2017	51	26	5.2	22.4	10.8	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.08.2017	40	19	4.8	20.3	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
6	17/18.08.2017	38	18	4.6	19.4	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	49	26	5.2	21.5	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
8	24/25.08.2017	54	28	5.6	22.3	11.4	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
9	28/29.08.2017	56	29	5.8	22.8	12.2	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	50.1	25.7	5.3	21.8	11.0	10.0	0.25	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

T: 91 33 22172249 / 4014 3008 / 2295 0008 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
 H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

AWP O BARBIL Ward No-6
 Dist. Keonjhar, Orissa - 755035
 CIN: U61909WB1966PTC023037
 T : +91 94370 08615 94370 09620 94370 75269
 E : barbil@mitrask.com
 W : www.mitrask.com

DATE: 02/09/2017

Ref. No: BBL/ENV/2364

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
 Address : FAP Joda Plant
 Location : Near Gate No-2

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	01/02.08.2017	67	35	6.8	27.2	13.2	<10.0	0.32	<0.02	5.2	<1.0	<2.08	<0.4
2	04/05.08.2017	48	25	5.4	22.4	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.08.2017	61	32	6.6	25.5	12.4	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
4	10/11.08.2017	57	31	5.8	23.3	11.8	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.08.2017	48	25	5.5	21.8	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
6	17/18.08.2017	45	23	5.2	21.4	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	56	24	5.8	22.2	11.4	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
8	24/25.08.2017	60	32	6.4	24.8	12.6	<10.0	0.25	<0.02	4.8	<1.0	<2.08	<0.4
9	28/29.08.2017	64	34	6.7	26.5	12.8	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	56.2	29.0	6.0	23.9	11.6	10.0	0.26	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB based on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff. :2014

Checked by:

T: 91 33 22172249 / 4014 3008 / 2295 0008 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
 H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist: Keonjhar, Odisha - 758036
CIN: US1909WD1962P1C023037
T: +91 94370 09815, 94370 09820, 94370 75269
E: barbil@mitrask.co.in
W: www.mitrask.com



DATE: 02/09/2017

Ref. No. BBL/ENV/2365

AMBIENT AIR QUALITY MONITORING REPORT

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near 132 KV

Sl. No.	Date of Monitoring	Concentration of Pollutants										Benzo(a) pyrene (ng/m ³)	
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)		Benzene (µg/m ³)
1	01/02.08.2017	60	32	6.1	25.4	10.8	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
2	04/05.08.2017	41	22	4.9	19.8	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
3	07/08.08.2017	54	28	5.8	23.2	10.4	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
4	10/11.08.2017	49	25	5.4	21.3	<10.0	<10.0	0.20	<0.02	<4.0	<1.0	<2.08	<0.4
5	14/15.08.2017	44	23	5.2	19.6	<10.0	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
6	17/18.08.2017	38	19	4.8	19.8	10.8	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	21/22.08.2017	56	29	5.8	24.8	10.8	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
8	24/25.08.2017	40	20	4.7	20.4	<10.0	<10.0	0.24	<0.02	4.6	<1.0	2.08	0.4
9	28/29.08.2017	47	24	5.6	22.2	<10.0	<10.0	0.22	<0.02	4.1	1.0	2.08	0.4
	Avg. Monthly	47.7	24.7	5.4	21.8	10.2	10.0	0.22	0.0	4.1	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shriyati Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist: Keonjhar, Odisha - 758036
CIN: US1909WD1962P1C023037
T: +91 94370 09815, 94370 09820, 94370 75269
E: barbil@mitrask.co.in
W: www.mitrask.com



Ref. No. BBL/ENV/2399

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Main Gate

Sl. No.	Date of Monitoring	Concentration of Pollutants										Benzo(a) pyrene (ng/m ³)	
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (µg/m ³)	As (ng/m ³)		Benzene (µg/m ³)
1	04/05.09.2017	48	24	4.5	25.2	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
2	07/08.09.2017	54	28	5.9	26.8	<10.0	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
3	11/12.09.2017	60	32	6.2	27.6	14.7	11.7	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
4	14/15.09.2017	44	22	4.9	21.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
5	18/19.09.2017	49	25	4.8	23.7	21.5	<10.0	0.22	<0.02	<4.0	<1.0	<2.08	<0.4
6	21/22.09.2017	42	21	4.5	21.2	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
7	25/26.09.2017	35	17	4.4	18.6	<10.0	<10.0	0.18	<0.02	<4.0	<1.0	<2.08	<0.4
8	28/29.09.2017	52	27	5.2	22.5	12.3	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	48.0	24.5	5.1	23.4	12.3	10.2	0.23	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
	Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/5/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDIR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No. TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O.: Shriyati Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist. Keonjhar Odisha - 758036
CIN: U61909WB1966PTCO23037
T : +91 94370 09615 94370 09620 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No.BBL/ENV/2400

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Ore Stack Yard Area (Near Well Pump)

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	04/05.09.2017	54	29	5.8	24.1	<10.0	<10.0	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
2	07/08.09.2017	63	34	6.2	25.4	12.4	10.8	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
3	11/12.09.2017	67	36	6.9	27.8	15.2	<10.0	0.32	<0.02	<4.0	<1.0	<2.08	<0.4
4	14/15.09.2017	51	28	5.4	24.6	<10.0	<10.0	0.27	<0.02	<4.0	<1.0	<2.08	<0.4
5	18/19.09.2017	55	30	6.1	25.3	<10.0	<10.0	0.29	<0.02	<4.0	<1.0	<2.08	<0.4
6	21/22.09.2017	48	25	5.5	23.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
7	25/26.09.2017	44	22	4.8	19.4	<10.0	<10.0	0.19	<0.02	<4.0	<1.0	<2.08	<0.4
8	28/29.09.2017	52	27	4.5	23.9	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		54.3	28.9	5.7	24.2	10.9	10.1	0.26	<0.02	<4.0	<1.0	<2.08	<0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O. : Shreech Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

AMP O BARBIL Ward No-6
Dist. Keonjhar Odisha - 758036
CIN: U61909WB1966PTCO23037
T : +91 94370 09615 94370 09620 94370 75269
E : barbil@mitrask.com
W : www.mitrask.com



Ref. No.BBL/ENV/2401

Name of Client : TATA Steel Ltd.
Address : FAP Joda Plant
Location : Near Gate No-2

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	04/05.09.2017	64	34	6.1	26.3	<10.0	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
2	07/08.09.2017	72	38	6.9	27.2	13.3	<10.0	0.36	<0.02	<4.0	<1.0	<2.08	<0.4
3	11/12.09.2017	75	40	7.4	27.8	15.4	<10.0	0.40	<0.02	<4.0	<1.0	<2.08	<0.4
4	14/15.09.2017	61	32	5.6	25.6	<10.0	<10.0	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
5	18/19.09.2017	66	35	6.6	26.8	11.2	<10.0	0.33	<0.02	<4.0	<1.0	<2.08	<0.4
6	21/22.09.2017	57	31	5.7	24.5	<10.0	<10.0	0.3	<0.02	<4.0	<1.0	<2.08	<0.4
7	25/26.09.2017	52	27	5.4	23.7	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
8	29/29.09.2017	62	33	6.2	25.3	<10.0	<10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
Avg. Monthly		63.6	33.8	6.2	25.9	11.2	10.0	0.31	<0.02	<4.0	<1.0	<2.08	<0.4
Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality		100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to		IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix L, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part-11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014

Checked by:

T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com
H. O. : Shreech Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
Authorised Signatory

Mitra S. K. Private Limited

ALP O BARBIL Ward No.6
 Dist Keonjhar, Odisha - 755035
 CIN U51909WB1956P1C002037
 T : +91 94370 0961E 94370 09620 94370 75209
 E : barbil@mitrask.com
 W : www.mitrask.com



Ref. No. BBL/ENV/2402

Name of Client : TATA Steel Ltd.
 Address : FAP Joda Plant
 Location : Near 132 KV

AMBIENT AIR QUALITY MONITORING REPORT

DATE: 03/10/2017

Sl. No.	Date of Monitoring	Concentration of Pollutants											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	CO (mg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	Benzo(a) pyrene (ng/m ³)
1	04/05.09.2017	55	28	5.3	24.2	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
2	07/08.09.2017	65	34	5.6	25.2	11.8	<10.0	0.28	<0.02	<4.0	<1.0	<2.08	<0.4
3	11/12.09.2017	68	36	6.0	25.8	14.2	<10.0	0.30	<0.02	<4.0	<1.0	<2.08	<0.4
4	14/15.09.2017	54	28	5.2	23.6	<10.0	<10.0	0.24	<0.02	<4.0	<1.0	<2.08	<0.4
5	18/19.09.2017	59	31	5.5	24.8	<10.0	<10.0	0.25	<0.02	<4.0	<1.0	<2.08	<0.4
6	21/22.09.2017	51	26	5.0	22.2	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
7	25/26.09.2017	44	23	4.6	20.3	<10.0	<10.0	0.21	<0.02	<4.0	<1.0	<2.08	<0.4
8	28/29.09.2017	54	28	4.9	23.2	<10.0	<10.0	0.23	<0.02	<4.0	<1.0	<2.08	<0.4
	Avg. Monthly	56.3	29.3	5.3	23.7	10.8	10.0	0.25	0.02	4.0	1.0	2.08	0.4
	Limit as per CPCB notification, New Delhi, 18th Nov, 2009, for Ambient air quality	100	60	80	80	400	180	2	1	20	6	5	1
Sampling and Analysis done according to	IS 5182: Part 23:2006 (Reaff. 2012)	Lab Sop No. TPM/MSK/E/S/CB ased on USEPA CFR 40, Part 50 Appendix I, 2016	IS 5182: Part 2:2001 (Reaff.2012)	IS 5182: Part 6:2006 (Reaff.2012)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-401)	Method of Air sampling, 3rd Edn. By James P. Lodge (Method-411)	IS 5182: Part 10:1999 (Reaff.2014) (NDR)	EPA-103.2 June,1999	EPA-103.2 - June,1999	Lab Sop No.TPM/MSK/E/4/L Based on APHA 22nd Edition 2012, 3114 C	IS:5182 (Part 11): 2006 Reaff, 2012	IS:5182 (Part-12): 2004 Reaff, :2014	

Checked by:

T: 91 33 22172249 / 4014 3000 / 2285 8005 / 2285 0007 F: 91 33 2265 0006 E: info@mitrask.com W: www.mitrask.com
 H. O.: Shivraji Centre (5th Floor), 74B Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India



For Mitra S. K. Private Limited
 Authority Signatory

Annexure- II

Stack Emission Monitoring Report from 01-04-2017 To 30-09-2017

Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815,94370 09820,94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No. BBL/ENV/2097

DATE:02/05/2017

ANALYSIS REPORT OF FLUE GAS				
Name of the industry:		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		08.04.2017		
Date of Analysis :		09.04.2017		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	62	63
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	14.64	14.89
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	128.8	133.5
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7, Issue dt. 12/03/1996	84.3	87.6
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	25	31

Checked by :



For Mitra S. K. Private Limited

Authorised Signatory

Mitra S. K. Private Limited

At/P.O. BARBIL, Ward No-6
Dist : Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09615, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No. BBL/ENV/2145

DATE:02/06/2017

ANALYSIS REPORT OF FLUE GAS				
Name of the industry:		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		29.05.2017		
Date of Analysis :		30.05.2017		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	67	70
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.2	16.97
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	109.7	119.3
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7, Issue dt. 12/03/1996	75.6	81.2
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	27	33

Checked by :

Ananta Kumar Ratha

For Mitra S. K. Private Limited

Authorised Signatory



Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09615, 94370 09620, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No. BBL/ENV/2271

DATE:02/07/2017

ANALYSIS REPORT OF FLUE GAS

Name of the industry:	Ferro Alloys Plant - Joda. Tata Steel Ltd			
Date of Monitoring :	21.06.2017			
Date of Analysis :	23.06.2017			
Stack Connected	Reduction Arc Furnace - I & II			
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	70	73
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	12.28	16.00
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	102.5	121.3
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7 , Issue dt. 12/03/1996	71.4	84.6
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	29	36

Checked by :

For Mitra S. K. Private Limited

Authorised Signatory



Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No. BBL/ENV/2342

DATE: 02/08/2017

ANALYSIS REPORT OF FLUE GAS

Name of the industry:	Ferro Alloys Plant - Joda. Tata Steel Ltd			
Date of Monitoring :	10.07.2017			
Date of Analysis :	12.07.2017			
Stack Connected	Reduction Arc Furnace - I & II			
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	59	61
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	12.29	16.20
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	106.5	125.5
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7, Issue dt. 12/03/1996	85.6	91.7
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	33	37

Checked by :

For Mitra S. K. Private Limited

Authorised Signatory



Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037
T : +91 94370 09815, 94370 09820, 94370 75289
E : barbil@mitrask.co.in
W : www.mitrask.com



Date: 02/09/2017

Ref. No. BBL/ENV/2369

ANALYSIS REPORT OF FLUE GAS

Name of the industry:		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		28.08.2017		
Date of Analysis :		30.08.2017		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	60	62
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	15.80	15.87
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	86.2	97.6
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7, Issue dt. 12/03/1996	81.3	90.5
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	35	32

Checked by:-

For Mitra S. K. Private Limited

Authorised Signatory



Mitra S. K. Private Limited

A/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No. BBL/ENV/2407

Date: 03/10/2017

ANALYSIS REPORT OF FLUE GAS				
Name of the industry:		Ferro Alloys Plant - Joda. Tata Steel Ltd		
Date of Monitoring :		25.09.2017		
Date of Analysis :		27.09.2017		
Stack Connected		Reduction Arc Furnace - I & II		
Sl.No.	Parameters	Method of Testing	Furnace - I	Furnace - II
1.	Temperature of emission (°C)	USEPA Part 2 - 25/09/1996	63	71
2.	Velocity of gas (m/sec.)	USEPA Part 2 - 25/09/1996	16.70	17.89
3.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA Part 6 - 25/09/1996	81.5	95.8
4.	Concentration of Nitrogen dioxide (mg/Nm ³)	USEPA Part 7, Issue dt. 12/03/1996	77.2	89.3
5.	Concentration of particulate Matters (mg/Nm ³)	USEPA Part 5 - 16/08/1996	33	36

Checked by:-



For Mitra S.K. Private Limited
Authorised Signatory

Annexure-III



Mobile High Velocity Water Sprinkler cum Mist Canon



Dry Fogging System for Fugitive dust suppression

Annexure-IV

Fume Extraction System



Fume Extraction System For existing Plant

Annexure - V



Sewage Treatment Plant Installed at FAP, Joda

Annexure - VI

Ground water Analysis Report

Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T: +91 94370 09815, 94370 09820, 94370 75269
E: barbil@mitrask.co.in
W: www.mitrask.com



Ref. No. BBL/ENV/2092

Date: 02/05/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 12/04/2017 at FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	13.3	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	6.63	5.5 - 9.0
6	Temperature °C	27.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH ₃) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	<2.0	30
13	COD in mg/l	<4.0	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr ⁶⁺) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	0.06	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.12	2.0
26	Dissolved Oxygen in mg/l	6.2	---
27	Dissolved phosphates (as PO ₄) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	0.16	2.0
31	Iron (as Fe) in mg/l	1.92	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO ₃) in mg/l	<0.05	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW1-Test Well at Upstream of Sludge Pit

Checked by: -



For Mitra S. K. Private Limited

Authorised Signatory

Mitra S. K. Private Limited

AdP O BARBIL Ward No-6
Dist Keonjhar Odisha 750036
CIN: U61909WB1998P10023037

T : +91 94370 09615 94370 09620 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com




Ref. No.BBL/ENV/2091

DATE: 02/05/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water Level Monitoring" reading taken by our representative at M/s. FAP Joda Plant; P.O: Joda, Dist: Keonjhar, Odisha, in the Presence of a representative of and on account of M/s.Tata Steel Ltd.,has been analysed with the following results:-

Date of Monitoring	Location	Water Level (Below Ground level, in mtrs)
12.04.2017	Bore Well at Canteen	6.7
12.04.2017	Bore Well at Furnace	7.1

Checked by:- 



For Mitra S. K. Private Limited


Authorised Signatory

H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India
T: 91 33 22172249 / 4014 3000 / 2265 0008 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com

Mitra S. K. Private Limited

ASFO - BARBIL Ward No.6
Dist. Keonjhar, Odisha 756035
CIN: U51909WB1956PT0023037
T: +91 94370 09815, 94370 09820, 94370 75269
E: barbil@mitrask.co.in
W: www.mitrask.com



Ref. No.BBL/ENV/2089

DATE: 02/05/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 12/04/2017 at M/s. FAP Joda Plant; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

MICROBIOLOGICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991

Sl No.	Test Parameters	Norms as per IS:10500-1991	Results
1	Total Coliform Organism MPN/100ml	10 (MAX)	<2.0
2	Faecal Coliforms	Absent	Absent
3	E. Coli	Absent	Absent

CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991

Sl No.	Test Parameters	Norms as per IS: 10500-1991		Results
		Desirable Limit	Permissible Limit	
		5	25	<1.0
1	Colour (Hazen Unit)	Unobjectionable	--	Unobjectionable
2	Odour	Agreeable	--	Agreeable
3	Taste	5	10	<1.0
4	Turbidity in NTU	6.5 - 8.5	No Relaxation	7.52
5	pH value (26°C)	300	600	60.0
6	Total Hardness(as CaCO ₃) in mg/l	0.3	1	<0.05
7	Iron (as Fe) in mg/l	250	1000	8.2
8	Chloride (as Cl) in mg/l	1	1.5	<0.1
9	Fluoride (as F) in mg/l	0.2(Min.)	---	<0.1
10	Residual Free Chlorine in mg/l	500	2000	100
11	Total Dissolved Solids in mg/l	75	200	16.2
12	Calcium (as Ca) in mg/l	30	100	2.74
13	Magnesium (as Mg) in mg/l	0.05	1.5	<0.02
14	Copper (asCu) in mg/l	0.1	0.3	<0.02
15	Manganese (as Mn) in mg/l	200	400	<1.0
16	Sulphate (as SO ₄) in mg/l	45	100	<0.4
17	Nitrate (as NO ₃) in mg/l	0.001	0.002	<0.001
18	Phenolic Compounds (as C ₆ H ₅ OH) in mg/l	0.001	No Relaxation	<0.001
19	Mercury (as Hg) in mg/l	0.01	No Relaxation	<0.001
20	Cadmium (as Cd) in mg/l	0.01	No Relaxation	<0.005
21	Selenium (as Se) in mg/l	0.05	No Relaxation	<0.01
22	Arsenic (as As) in mg/l	0.05	No Relaxation	<0.01
23	Cyanide (as CN) in mg/l	0.05	No Relaxation	<0.005
24	Lead (as Pb) in mg/l	5	15	<0.02
25	Zinc (as Zn) in mg/l	0.2	1	<0.02
26	Anionic Detergents (as MBAS) in mg/l	0.1	No Relaxation	<0.01
27	Chromium (as Cr ⁺⁶) in mg/l	---	---	<0.01
28	Mineral Oil mg/l	200	600	28.32
29	Alkalinity (as CaCO ₃) in mg/l	0.03	0.2	<0.01
30	Aluminium (as Al) in mg/l	1	5	<0.5
31	Boron (as B) in mg/l	---	---	<0.0001
32	PAH mg/l	---	---	<0.00001
33	Pesticide mg/l	---	---	<0.00001

SAMPLING LOCATION :- Bore well at Canteen

Checked by:-

For Mitra S. K. Private Limited

 Authorised Signatory

H. O., Shirachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India
 T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com

Mitra S. K. Private Limited

A/P O BARBIL Ward No-6
Dist: Keonjhar, Odisha 758035
CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75259
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No.BBL/ENV/2337

DATE: 02/08/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 28/07/2017 at M/s. FAP Joda Plant ; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of M/s. Tata Steel Ltd., has been analyzed with the following results:-

MICROBIOLOGICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991

Sl No.	Test Parameters	Norms as per IS:10500-1991	Results
1	Total Coliform Organism MPN/100ml	10 (MAX)	<2.0
2	Faecal Coliforms	Absent	Absent
3	E. Coli	Absent	Absent

CHEMICAL ANALYSIS OF WATER AS PER IS: 10500 - 1991

Sl No.	Test Parameters	Norms as per IS: 10500-1991		Results
		Desirable Limit	Permissible Limit	
1	Colour (Hazen Unit)	5	25	<1.0
2	Odour	Unobjectionable	--	Unobjectionable
3	Taste	Agreeable	--	Agreeable
4	Turbidity in NTU	5	10	<1.0
5	pH value (26°C)	6.5 - 8.5	No Relaxation	6.55
6	Total Hardness(as CaCO ₃) in mg/l	300	600	64.0
7	Iron (as Fe) in mg/l	0.3	1	<0.05
8	Chloride (as Cl) in mg/l	250	1000	16.4
9	Fluoride (as F) in mg/l	1	1.5	<0.1
10	Residual Free Chlorine in mg/l	0.2(Min.)	---	<0.1
11	Total Dissolved Solids in mg/l	500	2000	120
12	Calcium (as Ca) in mg/l	75	200	12.2
13	Magnesium (as Mg) in mg/l	30	100	3.67
14	Copper (asCu) in mg/l	0.05	1.5	<0.02
15	Manganese (as Mn) in mg/l	0.1	0.3	<0.02
16	Sulphate (as SO ₄) in mg/l	200	400	<1.0
17	Nitrate (as NO ₃) in mg/l	45	100	<0.4
18	Phenolic Compounds (as C ₆ H ₅ OH) in mg/l	0.001	0.002	<0.001
19	Mercury (as Hg) in mg/l	0.001	No Relaxation	<0.001
20	Cadmium (as Cd) in mg/l	0.01	No Relaxation	<0.001
21	Selenium (as Se) in mg/l	0.01	No Relaxation	<0.005
22	Arsenic (as As) in mg/l	0.05	No Relaxation	<0.01
23	Cyanide (as CN) in mg/l	0.05	No Relaxation	<0.01
24	Lead (as Pb) in mg/l	0.05	No Relaxation	<0.005
25	Zinc (as Zn) in mg/l	5	15	0.14
26	Anionic Detergents (as MBAS) in mg/l	0.2	1	<0.02
27	Chromium (as Cr ⁺⁶) in mg/l	0.1	No Relaxation	<0.01
28	Mineral Oil mg/l	---	---	<0.01
29	Alkalinity (as CaCO ₃) in mg/l	200	600	35.8
30	Aluminium (as Al) in mg/l	0.03	0.2	<0.01
31	Boron (as B) in mg/l	1	5	<0.5
32	PAH mg/l	---	---	<0.0001
33	Pesticide mg/l	---	---	<0.00001

SAMPLING LOCATION :- Bore well at Furnace

For Mitra S. K. Private Limited

Checked by:-

Authorised Signatory



H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: barbil@mitrask.com W: www.mitrask.com

Mitra S. K. Private Limited

A/P: O. BARBIL Ward No-6
Dist. Keonjhar, Odisha - 758035
CIN: U51909WB1966PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
E : barbil@mitrask.co.in
W : www.mitrask.com



Ref. No.BBL/ENV/2338

DATE: 02/08/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water Level Monitoring " reading taken by our representative at **M/s. FAP Joda Plant; P.O: Joda, Dist: Keonjhar, Odisha**, in the Presence of a representative of and on account of **M/s.Tata Steel Ltd.**,has been analysed with the following results:-

Date of Monitoring	Location	Water Level (Below Ground level, in mtrs)
28.07.2017	Bore Well at Canteen	4.4
28.07.2017	Bore Well at Furnace	5.2

Checked by:-

For Mitra S. K. Private Limited

Authorised Signatory

H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700 016, West Bengal, India
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E:info@mitrask.com W: www.mitrask.com



Mitra S. K. Private Limited

At/P.O.: BARBIL Ward No-6
Dist.: Keonjhar, Odisha - 758035
CIN: U51909WB1956PTC023037

T: +91 94370 09815, 94370 09820, 94370 75269
E: barbil@mitrask.co.in
W: www.mitrask.com



Ref. No.BBL/ENV/2339

Date: 02/08/2017

CERTIFICATE OF ANALYSIS

This is to certify that a sample of "Ground Water" drawn by our representative on 28/07/2017 at **FAP Joda Plant** ; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of **M/s. Tata Steel Ltd.**, has been analyzed with the following results:-

Sl. No.	Test Parameters	Data Recorded from Current Analysis	Limit as per CPCB Inland Surface water
1	Colour (Hazen Unit)	<1.0	5
2	Odour	Unobjectionable	Unobjectionable
3	Suspended solids in mg/l	22.7	100
4	Particulate Size of Suspended solids mg/l	Passes through 850 µm IS Sieve	850 µm IS Sieve
5	pH (at 26°C)	7.10	5.5 - 9.0
6	Temperature °C	25.0	---
7	Oil & Grease in mg/l	<1.4	10
8	Total residual Chlorine in mg/l	<0.1	1.0
9	Ammonical Nitrogen (as N) in mg/l	<0.1	50
10	Total kjeldahl nitrogen (as N) in mg/l	<0.3	100
11	Free Ammonia (as NH ₃) in mg/l	<0.1	5
12	BOD 3 days at 27 °C in mg/l	<2.0	30
13	COD in mg/l	<4.0	250
14	Arsenic (as As) in mg/l	<0.01	0.2
15	Mercury (as Hg) in mg/l	<0.001	0.01
16	Lead (as Pb) in mg/l	<0.005	0.1
17	Cadmium (as Cd) in mg/l	<0.001	2.0
18	Total Chromium (as Cr) in mg/l	<0.01	2.0
19	Hexavalent Chromium (as Cr ⁶⁺) in mg/l	<0.01	0.1
20	Copper (as Cu) in mg/l	<0.02	3.0
21	Zinc (as Zn) in mg/l	0.09	5.0
22	Selenium (as Se) in mg/l	<0.005	0.05
23	Nickel (as Ni) in mg/l	<0.02	3.0
24	Cyanides (as CN) in mg/l	<0.01	0.2
25	Fluorides (as F) in mg/l	0.18	2.0
26	Dissolved Oxygen in mg/l	6.4	---
27	Dissolved phosphates(as PO ₄) in mg/l	<0.05	5.0
28	Sulphide (as S) in mg/l	<0.1	2.0
29	Phenolic Compounds in mg/l	<0.001	1.0
30	Manganese (as Mn) in mg/l	0.27	2.0
31	Iron (as Fe) in mg/l	2.1	3.0
32	Vanadium (as V) in mg/l	<0.2	0.2
33	Nitrates (as NO ₃) in mg/l	<0.05	10.0
34	Bio-assay	All fish survival after 96 hours in 100% effluent	90% survival in 100% effluent

Sampling Location: - TW1-Test Well at Upstream of Sludge Pit

Checked by:

For Mitra S. K. Private Limited


Authorised Signatory



H. O.: Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India
T: 91 33 22172249 / 4014 3000 / 2265 0006 / 2265 0007 F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com

Annexure - VII
Risk & Disaster Mitigation Plan submission covering Letter

Risk & Disaster Management Plan Submitted to OSCPCB, Bhubaneswar



Ref. No. FAPJ/ 6251 /2016 Dated : 01.02.2016

To
The Chairman
Orissa Pollution Control Board
Paribesh Bhawan
A/118, Nilkantha Nagar
Unit-VIII, Bhubaneswar - 751012

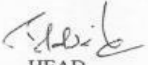
Sub : Submission of Risk & Disaster Management Plan along with the mitigation measures
for expansion of Ferro Manganese Plant, Joda.

Sir,

It may kindly be aware that with reference to Environment Clearance issued for expansion of Ferro Manganese Plant, Joda, vide F. No. J-11011/03/2012-IA.II (I) dated 5th November, 2015, there is a specific condition mentioned in clause (xi) for submission of Risk & Disaster Management Plan along with the mitigation measures.


As such, we hereby enclose the Risk & Disaster Management Plan along with the mitigation measures for expansion of Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA, Silico Manganese Plant of 0.06 MTPA and Manganese Sinter Plant of 0.05 MTPA.
Thanking you,

Yours faithfully,
For TATA STEEL Ltd.


HEAD
FERRO ALLOYS PLANT, JODA

Encl : as above.

Received
24/2/16



TATA STEEL LIMITED
Ferro Alloys Plant, Joda-756034, Dist. Keonjhar, Odisha, India
Tel. : 09238100945, e-mail : headoffice.fapj@tatasteel.com
Registered Office : Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India
Tel. 91 22 66658282, Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

Risk & Disaster Management Plan Submitted to MOEF, Regional Office, Bhubaneswar



Ref. No. FAPJ/ 4250 /2016

Dated : 01.02.2016

To
The Additional Principal Chief Conservator of Forests(C)
Ministry of Environment & Forests
Regional office (EZ)
A/3, Chandersekharpur,
Bhubaneswar - 751023

Sub : Submission of Risk & Disaster Management Plan along with the mitigation measures
for expansion of Ferro Manganese Plant, Joda.

Sir,

It may kindly be aware that with reference to Environment Clearance issued for expansion of Ferro Manganese Plant, Joda, vide F. No. J-11011/03/2012-IA.II (I) dated 5th November, 2015, there is a specific condition mentioned in clause (xi) for submission of Risk & Disaster Management Plan along with the mitigation measures.

As such, we hereby enclose the Risk & Disaster Management Plan along with the mitigation measures for expansion of Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA, Silico Manganese Plant of 0.06 MTPA and Manganese Sinter Plant of 0.05 MTPA.
Thanking you,

Yours faithfully,
For TATA STEEL Ltd.

HEAD
FERRO ALLOYS PLANT, JODA

Encl : as above.



TATA STEEL LIMITED

Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India
Tel. : 09238100945, e-mail : headoffice.fapj@tatasteel.com
Registered Office : Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India
Tel. 91 22 66658282, Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

Annexure VIII
Noise Monitoring Report from 01-10-2016 to 31-10-2017

Mitra S. K. Private Limited



At/P.O.: BARBIL Ward No-6
 Dist.: Keonjhar, Odisha - 758035
 CIN: U51909WB1956PTC023037

T : +91 94370 09815, 94370 09820, 94370 75269
 E : barbil@mitrask.co.in
 W : www.mitrask.com

Ref. No. BBL/ENV/2095

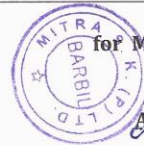
Date: 02/05/2017

NOISE LEVEL MONITORING REPORT

This is to certify that a sample of "Noise Level" reading taken by our representative on 14/04/2017 at **FAP Joda Plant**; P.O: Joda, Dist: Keonjhar, Odisha in the Presence of a representative of and on account of **M/s. Tata Steel Ltd.**, has been analyzed with the following results:-

SL. NO.	Sampling Location	Results dB (A)	
		Maximum	Minimum
1.	In front of Store	64.3	48.2
2.	JCB 40X 1 mtr distance	74.4	63.2
3.	Near Weight Bridge	73.1	52.1
4.	Loader 2 mtr distance	91.6	82.4
5.	Crusher Area	88.5	83.2
6.	Near Back Gate	71.3	42.4
7.	Breaking Yard(During Work)	73.2	51.2
8.	Plot No. 4B	65.6	41.3
9.	Area Furnace Ground Floor	91.8	61.2
10.	Area Furnace Floor	93.4	68.2
11.	Pit Site Area	60.7	50.1
12.	Near Cooling Tower	77.2	63.8
13.	Pump House (Inside)	95.2	87.5
14.	Telphar Floor	80.2	58.9
15.	GCP Floor(1mtr away from blower)	78.4	70.7
16.	ACS Area	75.3	67.4
17.	CMDS Area	79.7	75.2
18.	Office Area	61.2	42.6
19.	Quality Control Analysis Lab	60.1	45.3
20.	Laboratory Crusher Room(During Work)	68.5	62.1
21.	Canteen Kitchen	65.6	43.2
22.	Near Main Gate	68.3	48.5
23.	D.G. Room	79.4	63.4
24.	Locomotive During Operation	70.5	61.2
Noise Standard For Auto Mobiles, Equipment's & Work Zone		In dBA	
i.	Passenger or commercial vehicles up to 4tonns	71.3	
ii.	Passenger or commercial vehicles above 4tonns and up to 12 tons	82.1	
iii.	Passenger or commercial vehicles exceeding 12tonns	84.6	
iv.	Work Zone Standard	79.8	

Checked by:-



for Mitra S. K. Private Limited

Authorised Signatory

Annexure IX

Periodic Medical Examination Records

[FORM NO. 31-A
Health Record
(Pre-employment/ Periodical)
[Prescribed under Rule 62-J]

Date: 4/11/16 Ref No: JCO/7/4461/16

- Name of the Factory : Ferro Alloys Plant. Joda Tata steel
- Name of the employee: sakundala patra
- Employee Distinguishing No: Housekeeping
- Age of the employee : 44 years
Identification Mark : Black mole top of right eye
Nature of the Job : C2V2U
- Date of Employment: 03-02-2004
- Length of the service in years:
- General Survey :
Health : Good / Fair / Poor ✓
Height : 147 Cms
Weight : 49 Kg.
8. Blood Group: AB+ve
- Eye Vision : Normal / Abnormal
Use of glass : Yes / No
- Hearing : Normal / Abnormal
- Respiratory system and Chest Measurement :
Inspiration: 94
Expiration: 90
Respiration Rate:
Remarks, if any
12. Cardio Vascular System :
Pulse rate: 70/min
B.P: 130/80
Heart Sound: m
Remarks, if any
13. Abdomen Tenderness: Yes / No
14. Nervous System
History of Fits: Yes / No
Epilepsy: Yes / No
Remarks on Mental Health Compens mentis
15. Locomoter System : Normal / Abnormal
16. Skin Condition : Normal / Abnormal
Remarks on any skin Disease Noticed:

- 17. Hernias : Present / Absent ✓
- 18. Hydrocele : Present / Absent ✗ (no)

19. Present Complain, if any

20. Summery of findings :

- Heart disease : *hm*
- Hypertension: ~~hm~~ *no*
- Diabetes : *no* *74*
- T.B : *no*
- Epilepsy *no*
- Poisoning : *no*
- Others *hm*
- Occupational disease, if any *no*

21. Recommendation, if any for any further investigation

ଅଧିକାରୀଙ୍କ ଦ୍ୱାରା
Signature of the Employee

[Signature]
Signature of the Medical Officer
sr. Medical Officer,
RISCO HOSPITAL, JODHPUR

Annexure X

Intimation Letter of EC to Zila Parishad



Ref: FAPJ/ 4136 /2015
Date : 9th Nov, 2015

To
President
Zilla Parishad
Keonjhar

Sub: Intimation of obtaining Environmental Clearance under EIA Notification-2006 for the expansion of Ferro Alloys Plant of TATA STEEL Ltd., Joda, Keonjhar District.

Dear Sir/ Madam,

*Received
Xerox copy
of Environmental
clearance*

*Rhm
12-11-15
P.A. to President
Zilla Parishad
Keonjhar*

We would like to inform you that Ministry of Environment Forests & Climate Change (MOEF&CC), Govt. Of India has granted Environmental Clearance for the expansion of capacity of our existing Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA with 0.05 MTPA Sinter Plant & addition of 2*18 MVA SAF for 0.06 MTPA Slico Manganese production at our Ferro Alloys Plant, Joda, Odisha vide letter No. F. No. J-11011/03/2012- IA II (I) dt 05.11.2015.

We therefore request your good-self to kindly acknowledge the receipt of above letter.

Yours Faithfully
F: Tata Steel Limited

HEAD
FERRO ALLOYS PLANT, JODA

Enclosed:

1. Xerox copy of Environmental Clearance

TATA STEEL LIMITED

Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India
Tel. : 09238100945, e-mail : headoffice.fapj@tatasteel.com
Registered Office : Bombay House, 24, Homi Mody Street, Fort, Mumbai-400001, India
Tel. 91 22 66658282, Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

Intimation Letter of EC to Chairman, Joda Municipality



Ref: FAPJ/ 4135 /2015
Date : 9th Nov, 2015

To
Chairman
Joda Municipality
Joda.

Sub: Intimation of obtaining Environmental Clearance under EIA Notification-2006 for the expansion of Ferro Alloys Plant of TATA STEEL Ltd., Joda, Keonjhar District.

Dear Sir/ Madam,

We would like to inform you that Ministry of Environment Forests & Climate Change (MOEF&CC), Govt. Of India has granted Environmental Clearance for the expansion of capacity of our existing Ferro Manganese Plant from 0.0504 MTPA to 0.06 MTPA with 0.05 MTPA Sinter Plant & addition of 2*18 MVA SAF for 0.06 MTPA Slico Manganese production at our Ferro Alloys Plant, Joda, Odisha vide letter No. F. No. J-11011/03/2012- IA II (I) dt 05.11.2015.

We therefore request your good-self to kindly acknowledge the receipt of above letter.

Yours Faithfully
F: Tata Steel Limited

HEAD
FERRO ALLOYS PLANT, JODA



Enclosed:

1. Xerox copy of Environmental Clearance

TATA STEEL LIMITED

Ferro Alloys Plant, Joda-758034, Dist. Keonjhar, Odisha, India
Tel. : 09238100945, e-mail : headoffice.fapj@tatasteel.com
Registered Office : Bombay House, 24, Horni Mody Street, Fort, Mumbai-400001, India
Tel. 91 22 66658282, Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260, Website : www.tatasteel.com

Annexure XI

Details of CSR funds allocated and released Expenditure against CSR Activities

Details of CSR funds allocated and released Expenditure against CSR Activities				
Period	Year wise expenditure Planning in (Rs Cr.)	Actual Expenditure for C.S.R in Rs Cr.	Name Of the CSR activities	Wheather Completed or Not
2010-11	8.50 Cr	8.40 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Road resurfacing inside Joda municipality from ransal ghati to Banspani	Completed
2011-12	26.00 Cr	26.07 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Keonjhar Bus stand	Completed
2012-13	21.00 Cr	21.17 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Construction of khandband Joribar Road	Completed
2013-14	15.00 Cr	15.21 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Road resurfacing inside Joda municipality	Completed
2014-15	24.00 Cr	24.98 Cr.	Health,Education,Livelihood,Rural Infastructure,Major Project:Municipalty Drinking water Project	Completed
2015-16	19.00 Cr	18.97 Cr	Health,Education,Livelihood,Rural Infastructure,Major Project:Kalyan Mandap at Joda	Completed
2016-17	18.86 Cr	13.20 Cr	Health,Education,Livelihood,Rural Infastructure,Major Project:Sona river bank protection near Women's college.	Completed


MFAD
FERRO MANGANESE PLANT
TATA STEEL LTD
JODA

Annexure XII
Environmental Parameter Display board at Main Gate



Annexure XIII

Covering Letter of Form V, Environment statement submission



TATA STEEL LTD.
FERRO MANGANESE PLANT, JODA

Ref. No. FAPJ/ 5781 /2017

Dated : 21/09/2017

The Member Secretary
Odisha Pollution Control Board
A/118, Nilakantha Nagar
Bhubaneswar

Sub: Submission of Environmental Statement.


Sir,

We are submitting one set of Annual Environmental Statement in respect of M/s Ferro Manganese Plant, Joda for the year ending 31st March, 2017.

This is for your kind perusal.

Thanking you,

Yours faithfully,
For : TATA STEEL LTD.


HEAD
FERRO MANGANESE PLANT,
JODA

Encl : as above.

Copy to -Regional Officer, OPCB, At-Baniapatt, College Road, Keonjhar - with enclosure.

TATA STEEL LTD.
Ferro Alloys & Minerals Division
Ferro Manganese Plant, Joda
Joda - 758034, Odisha, India
Tel : 09238100945, e-mail - head.office@tatasteel.com
Regd. Office : Bombay House, 24 Homi Mody Street, Mumbai - 400 001



Annexure XIV

Details of Publication on the Newspapers



Published on The Statesman of 12th November 2015 Issue



ନେଇ ସାଧାରଣରେ ଚର୍ଚ୍ଚା ଚାଲିଛି । ପଢ଼ୁଥିବା ପୁସ୍ତକେ ବ୍ୟାପକ କରି ୧୫.୯
 ଟିକେଟ୍ ହରାଇ ୧୩୯ ରନ୍ କରିଥିଲା ।

ଫେରୋ ଆଲୟେଜ୍ ପ୍ଲାଟ୍
ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍,
ଯୋଡ଼ା, ଜିଲ୍ଲା-କେନ୍ଦୁଝର, ଓଡ଼ିଶା

**TATA
TATA STEEL**

ସର୍ବସାଧାରଣ ବିଜ୍ଞପ୍ତି

ଭାରତ ସରକାରଙ୍କ ପରିଚେଶ, ଜଙ୍ଗଲ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ (ଏମ୍ପାଉର-ଏମ୍
 ଆଣ୍ଡ୍ ସିସି), (ଆର-ଏ ଚିଭିଜନ), ନୂଆଦିଲ୍ଲୀ ପକ୍ଷରୁ ଜାରି କରାଯାଇଥିବା ବିଟି ସଂଖ୍ୟା
 J-11011/03/2012-IA II(I), ତା ୫.୧୧.୨୦୧୫ତରିଖ ଅନୁସାରେ ଓଡ଼ିଶାର
 କେନ୍ଦୁଝର ଜିଲ୍ଲାର ଯୋଡ଼ାଠାରେ ଅବସ୍ଥିତ ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍‌ର ଫେରୋ ଆଲୟେଜ୍
 ପ୍ଲାଟ୍ ମନ୍ତ୍ରାଳୟ ଫେରୋ ମାଙ୍ଗାନିଜ୍ ରପ୍ତାନ ଅମଳା ବାର୍ଷିକ ୦.୦୫୦୪ ନିୟୁତ
 ଟନ୍‌ରୁ ୦.୦୬ ଟନ୍‌କୁ ବୃଦ୍ଧି ଓ ଏହାସହିତ ଯୋଡ଼ାଠାରେ ଥିବା ଫେରୋ ଆଲୟେଜ୍
 ପ୍ଲାଟ୍‌ରେ ବାର୍ଷିକ ୦.୦୬ ନିୟୁତ ଟନ୍ ଅମଳା ଓମ୍‌ରୁ ସିଲିକୋ-ମାଙ୍ଗାନିଜ୍ ପ୍ଲାଟ୍ ଓ ବାର୍ଷିକ
 ୦.୦୫ ନିୟୁତ ଟନ୍ ଅମଳା ସମ୍ପନ୍ନ ମାଙ୍ଗାନିଜ୍ ସିଣ୍ଡର ପ୍ଲାଟ୍ ପାଇଁ ପରିଚେଶ ମନ୍ତ୍ରାଳୟ
 ପ୍ରଦାନ କରିଛନ୍ତି ।

ପରିଚେଶ ମନ୍ତ୍ରାଳୟ ନିଜର ଓଡ଼ିଶାର ଭୂବିଦ୍ୟୁତ୍ ଉତ୍ପାଦନା ପ୍ରତ୍ୟାକ୍ଷ ନିୟନ୍ତ୍ରଣ
 ବୋର୍ଡ୍ ନିକଟରେ ଉପଲବ୍ଧ ଏବଂ ଭାରତ ସରକାରଙ୍କ ପରିଚେଶ, ଜଙ୍ଗଲ ଓ
 ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ ଷ୍ଟେସାଇଟ୍ <http://envfor.nic.in> ରେ ମଧ୍ୟ
 ଦେଖାଯାଇପାରିବ ।

ପଙ୍କଜ କୁମାର ସଚିକା,
 ମହା ପ୍ରବନ୍ଧକ (ଅପରେସନ୍ସ)
 ଏମ୍ପା ଆଣ୍ଡ୍ ଏମ୍ପି, ଟାଟା ଷ୍ଟିଲ ଲିମିଟେଡ୍

Published on Sambad of 13th November 2015 Issue
