



Ref: FAPJ/70/2023

Date: - 30/05/2023

**To
The Director (S)
Eastern Region Office
Ministry of Environment, Forest and Climate Change
Government of India, A/3, Chandrasekhar.
Bhubaneswar – 751023**

Sub: Submission of Half yearly Environmental Compliance Report for FAP from 1st October '2022 to 31 March '2023.

Respected Sir

I am herewith submitting the environmental compliance report for the period of **1st October '2022 to 31 March '2023.**

The details of status of compliance both General and Specific stipulated conditions and remarks, with information regarding Air Quality, Water quality, CSR Activities Expenditure Incurred for Environment Management, Total Chromite Presence in Surface, drinking and Ground Water, Monthly Energy Consumption in Kw hour is given in Annexure I-VI.

Thanking you

For Tata Steel Mining Limited
Yours faithfully

**Alok Kumar Panda
Plant Head**

Encl: as above

TATA STEEL MINING LIMITED

(Formerly known as T S Alloys Limited)

Registered Office Plot No N3/24 IRC Village Nayapalli Bhubneshwar Odisha Pin 751015 Ph +91 674 2551045

Works Anantapur PO Dhurusia Athagarh District Cuttack Odisha Pin 754029 Tel +91 671 6534413

CIN U27109OR2004PLC009683 Website www.tsalloys.com

Online Submission Confirmation

PARIVESH
परिवेश

Ministry of Environment, Forest and Climate Change
Government of India
mmtsalloystd@tatasteel.com Logout

Proposal No.: IA/OR/IND/4594/2010
Category: Industrial Projects - 1
Proposal Name: Proposed Ferro Alloy plant & Captive Power Plant
MoEF File No.: J-11011/372/2009-IA.II(I)

Compliance Letter/Report

Year of Compliance: -All Years-
Date of Compliance: Select
Remarks:
Upload Compliance Letter/Report: Choose File No file chosen (.pdf only)

SUBMIT

Sno.	Proposal No.	Uploaded copy of Compliance report	Remarks	Uploaded Date	Delete
1	IA/OR/IND/4594/2010	0531202379051658HalfYearlyComplianceReportOct-2022toMar-2023.pdf	Six Monthly EC Compliance for the period Oct 2022 to Mar 2023	31/05/2023	

Windows taskbar: Type here to search, 33°C Haze, 13:09, 31-05-2023

Half Yearly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}



Ferro Alloys Plant
Tata Steel Mining Ltd., Jajpur

Ref. EC File No.








J-11011/372/2009-IA.II(I), Dated: 30.09.2010

J-11011/372/2009-IA.II(I), Dated: 21.09.2012

For Submission to :

Ministry of Environment, Forest & Climate Change (MoEF&CC)

SEQUENCE OF DOCUMENTS

-  **Compliance to the stipulated conditions of Environmental Clearance**
-  **Annexure – 1 (Air Quality Monitoring Report within Plant Premises)**
-  **Annexure – 2 (Air Quality Monitoring Report of Buffer Zone)**
-  **Annexure – 3 (TCLP Test Report of Slag)**
-  **Annexure – 4 (On-site Emergency Plan)**
-  **Annexure – 5 (Noise Level Monitoring Report)**
-  **Annexure – 6 (Form - 31A)**

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

EC File No. J-11011/372/2009-IA.II(I) dated 30.09.2010

S.No.	Specific Conditions	Compliances										
1.	No charcoal shall be used as fuel. Pet coke shall be used as fuel instead of charcoal from unknown sources.	No Charcoal is used, instead Met Coke is used for Ferro Chrome manufacture.										
2.	Continuous monitoring facilities for all the stacks and sufficient air pollution control equipments viz. fume extraction system with bag filters, ID fan and stack of adequate height to submerged arc furnace shall be provided to control emissions below 50 mg/Nm ³ .	Regular monitoring of all the stacks is being carried out to restrict emissions below 50 mg/Nm ³ . Monitoring report is attached as Annexure - 1.										
3.	The National Ambient Air Quality Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16 th November, 2009 shall be followed.	Regular Monitoring results indicate that the AAQ results are very much within the NAAQS limit during the operation along with the pollution control equipment. Ambient Air Quality results for last six months attached as Annexure - 2.										
4.	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 shall be followed.	<p>The following control measures are implemented to keep a check on secondary fugitive emission :-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Source of Secondary emissions</th> <th style="text-align: center;">Control measures adopted</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Vehicular Movement on road</td> <td>Concreting of internal roads and additional mobile water sprinkler are engaged within the premises for fugitive dust suppression.</td> </tr> <tr> <td style="text-align: center;">Furnace fume tapping</td> <td>Tapping fumes are sucked by a Hood and collection system which is routed through GCP.</td> </tr> <tr> <td style="text-align: center;">Feeding Points</td> <td>Water fogging system installed at feeding points.</td> </tr> <tr> <td style="text-align: center;">Conveyor System</td> <td>At all the conveyor nodes, intermittent water sprinkling is practiced.</td> </tr> </tbody> </table>	Source of Secondary emissions	Control measures adopted	Vehicular Movement on road	Concreting of internal roads and additional mobile water sprinkler are engaged within the premises for fugitive dust suppression.	Furnace fume tapping	Tapping fumes are sucked by a Hood and collection system which is routed through GCP.	Feeding Points	Water fogging system installed at feeding points.	Conveyor System	At all the conveyor nodes, intermittent water sprinkling is practiced.
Source of Secondary emissions	Control measures adopted											
Vehicular Movement on road	Concreting of internal roads and additional mobile water sprinkler are engaged within the premises for fugitive dust suppression.											
Furnace fume tapping	Tapping fumes are sucked by a Hood and collection system which is routed through GCP.											
Feeding Points	Water fogging system installed at feeding points.											
Conveyor System	At all the conveyor nodes, intermittent water sprinkling is practiced.											
5.	Prior permission for the drawl of 9,155 KLD water from competent authority shall be obtained. Efforts shall be made to make use of rain water harvested. If needed, capacity of the reservoir should be enhanced to meet the	960 KLD water is used in Submerged Arc Furnace as per present configuration. Additional water requirement for Power Plant will be processed after obtaining fresh EC.										

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

	maximum water requirement. Only balance water requirement should be met from other sources.	
6.	Regular monitoring of influent and effluent surface, sub-surface and ground water shall be ensured and treated wastewater shall meet the norms prescribed by the State Pollution Control Board or described under the E(P) Act whichever are more stringent. Leachate study for the effluent generated and analysis should also be regularly carried out and report submitted to the Ministry's Regional Office at Bhubaneswar, SPCB and CPCB.	No wastewater generation from operation of the Plant.
7.	'Zero' effluent discharge shall be strictly followed and no wastewater should be discharged outside the premises.	The Water Circuit of the Plant adheres to "Zero Liquid Discharge" principle.
8.	All the Ferro alloy slag shall be used for land filling inside the plant or used as building material only after passing through Toxic Chemical Leachability Potential (TCLP) test. Otherwise, hazardous substances shall be recovered from the slag and output waste and be disposed in secured landfill as per CPCB guidelines.	TCLP Test report is attached as Annexure - 3.
9.	Slag produced in Ferro Manganese (Fe-Mn) production shall be used in manufacture Silico Manganese (Si-Mn).	Not Applicable. The unit is not producing Manganese (Mn) Alloys.
10.	No Ferro Chrome shall be manufactured without prior approval from the Ministry of Environment & Forests.	Amended EC for production of Ferro Chrome apart from producing Ferro Alloys (Ferro Manganese, Silico Manganese and Ferro Silicon) within approved production capacity has been obtained from MoEF vide File No. J-11011/372/2009-IA,II(I) on dated 21.09.2012.
11.	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, OSPB and CPCB within 3 months of issue of environment clearance letter.	Complied. Emergency Plan is attached as Annexure - 4.
12.	As proposed, green belt shall be developed in at least 33 % of the project area. Selection of the plant species shall be as per the CPCB guidelines in consultation with the DFO.	At present, greenbelt is developed over an area of 5.9 Acres of land. And to comply with greenbelt over 33% of Project area, further greenbelt will be developed over an area of 13.9 Acres within a period of two years. Also, additional area of 3.4 Ac has been developed as greenbelt in a separate plot

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

		acquired by the Company.
13.	At least 5 % of the total cost of the project should be earmarked towards the corporate social responsibility and item- wise details along with time bound action plan (need based) should be prepared and submitted to the Ministry's Regional Office at Bhubaneswar. Implementation of such program shall be ensured accordingly in a time bound manner.	Tata Steel Mining Ltd. has acquired the Plant through NCLT under the IBC code and is engaging with Tata Steel Foundation(TSF) for implementing CSR activities as per Corporate guidelines.
14.	The company shall provide housing for 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.	Complied during construction phase.
S.No.	General Conditions	Compliances
1.	The project authorities must strictly adhere to the stipulations made by the Orissa State Pollution Control Board and the State Government.	All the stipulations made by the Odisha Pollution Control Board and the State Government are being strictly followed.
2.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Acknowledged and status quo is being and will be maintained.
3	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	As of now, 5 Nos. of ambient air quality stations are installed and operational. Ambient Air Quality report is attached as Annexure - 1.
4	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM ₁₀ , SO ₂ , NO _x 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.	Ambient Air Quality report is attached as Annexure - 2.
5	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended	No wastewater generation. Surface run-off will be treated in ETP (which is under construction) and reused in plantation.

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

	form time to time. The treated wastewater shall be utilized for plantation purpose.	
6	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70dBA (nighttime).	<p>Following measures are implemented to restrict noise levels within prescribed limits:-</p> <ul style="list-style-type: none"> • Acoustic enclosures have been provided for DG Sets. • Regular maintenance of noise generating machineries is being carried out. • Use of vibration dampeners for all the equipment. <p>Ambient Noise Level report for this period is attached as Annexure - 5.</p>
7	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories act	Done as per the statute along with record keeping. A copy of Form 31A attached as in Annexure - 6 . It is being done as per the Factories' Act in every 3rd Quarter of a Financial Year.
8	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Rainwater harvesting measures are in place to utilize the harvested water in lean seasons.
9	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programs, educational programs, drinking water supply and health care etc.	<p>All the stipulated conditions of the Environmental Clearance is being complied to safeguard the immediate surrounding environment.</p> <p>The Management also adheres to compliance in respect of EP Act, Air Act and Water Act, IF Act, Labour Laws as on date.</p>
10	Requisite amount 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 and Forests 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.	Annual recurring cost for maintenance of Pollution control equipments to the tune of 1.5 Cr/annum is being spent towards environmental protection measures.
11	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	Complied

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

	received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	
12	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 MOEF at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM ₁₀ , SO ₂ , NO _x (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.	Since the acquisition of Plant, the conditions stipulated in EC are being complied and submitted as per statute at SPCB and Regional Office of the MOEF at Bhubaneswar.
13	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 MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Bhubaneswar/CPCB/SPCB shall monitor the stipulated conditions.	Six Monthly compliance report of stipulated environmental conditions is being submitted periodically at the Regional Office of MoEF at Bhubaneswar.
14	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 MOEF at Bhubaneswar by e-mail.	The last Environmental Statement (Form-V) was submitted to SPCB & RO of MoEF&CC as per EC condition & EP Rule 1986.
15	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 and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the	Complied

Six-Monthly Compliance Report of stipulated conditions of Environmental Clearance

{Period: October 2022 - March 2023}

	vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bhubaneswar.	
16	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied

EC File No. J-11011/372/2009-IA,II(I) dated 21.09.2012

S.No.	Specific Conditions	Compliances
1.	The company shall comply with all the conditions stipulated while according environmental clearance vide Ministry's letter of even number dated 30 th September, 2010.	Conditions stipulated in previous EC File No. J-11011/372/2009-IA,II(I) dated 30/09/2010 are being complied.
2.	The company shall recover ferro chrome from ferro chrome slag. The remaining slag shall be disposed of in the waste disposal site after carrying TCLP Test.	Slag is being disposed to authorized slag processing industries. TCLP report is attached as Annexure-3 .
3.	The ground water quality monitoring around the disposal site shall be regularly monitored and the results of the monitored data shall be submitted to the SPCB and to the RO of the Ministry.	Ground water quality monitoring around the disposal site is being carried out regularly and result is being submitted to SPCB and RO, MoEF, Bhubaneswar.
4.	The trucks carrying the slag shall be covered with tarpaulin.	Tarpaulin covered transportation of slag is being carried out.

ANNEXURE - 1

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/S05
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October - 2022
Sampling Location : Roof Top of ADM Building) (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
03.10.2022	60.8	31.9	7.1	18.6	0.22	15.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.10.2022	69.4	36.2	6.9	26.5	0.44	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.10.2022	52.3	30.5	6.1	19.7	0.52	14.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.10.2022	57.1	28.2	7.8	24.8	0.17	13.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.10.2022	48.7	23.4	6.5	16.3	0.29	12.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.10.2022	65.2	33.5	7.4	28.4	0.37	19.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.10.2022	44.8	21.6	6.8	17.2	0.32	15.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.10.2022	66.4	38.4	7.9	32.1	0.49	27.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
31.10.2022	56.9	35.4	7.6	29.7	0.30	21.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	57.95	31.01	7.12	23.70	0.35	17.80	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4J une,1999	EPA - IO3.4J ne,1999	EPA - IO3.4J ne,1999	IS:5182(Part- 11):2006 Reaff,2012	IS:5182(Part- 12):2004 Reaff, 2014

S. K. Singh
Report Prepared by:



For Mitra S. K. Private Limited

A. W. Rasth
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



T : (0674) 2362916, 2360917
F : (0674) 2362918

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/506
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October – 2022
Samplng Location : GCP Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Ph (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
03.10.2022	72.5	37.4	7.5	32.1	0.49	27.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.10.2022	63.1	31.8	6.9	27.4	0.58	22.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.10.2022	66.7	33.2	6.7	29.2	0.61	25.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.10.2022	70.8	32.1	6.9	24.6	0.52	20.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.10.2022	55.2	22.7	7.2	18.9	0.41	12.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.10.2022	52.7	24.9	7.1	24.1	0.59	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.10.2022	61.7	29.8	6.5	23.4	0.52	19.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.10.2022	75.6	38.4	7.9	32.1	0.45	28.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
31.10.2022	59.4	27.8	6.6	21.9	0.42	17.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	64.18	30.90	7.03	25.96	0.51	21.91	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :200 1 (Reaff. 2012	IS 5182 : Part 6 :200 6 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,: 2014

S. K. Kamps
Report Prepared by:



For Mitra S. K. Private Limited

A. W. Rasth
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/507
Date : 11.11.2022
Sample Description : Ambient Air Quality
Mouth of Sampling : October – 2022
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
03.10.2022	78.4	39.2	8.4	34.6	0.75	30.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.10.2022	84.1	41.6	7.1	18.9	0.61	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.10.2022	67.8	32.4	6.8	26.4	0.59	22.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.10.2022	73.6	35.4	7.8	31.6	0.66	28.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.10.2022	69.2	33.7	6.7	27.3	0.54	23.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.10.2022	80.4	40.1	8.1	36.4	0.78	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.10.2022	70.6	32.4	7.7	26.2	0.47	22.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.10.2022	88.5	48.7	8.6	25.6	0.88	16.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
31.10.2022	61.3	31.2	6.2	23.7	0.52	18.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	74.88	37.19	7.49	27.85	0.64	23.83	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff 2012	IS 5182: Part 24:201 9	IS 5182: Part 2:200 1 (Reaff. 2012	IS 5182: Part 6:200 6 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Kang
Report Prepared by:



For Mitra S. K. Private Limited

A. U. R. Singh
Authorized Signatory

N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/508
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October – 2022
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Ph (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
03.10.2022	63.9	33.6	6.5	20.9	0.43	14.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.10.2022	72.6	35.8	7.2	31.6	0.57	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.10.2022	54.9	29.9	6.1	20.8	0.66	16.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.10.2022	59.8	27.4	6.4	23.8	0.51	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.10.2022	65.6	32.6	7.7	27.5	0.89	19.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.10.2022	52.3	24.9	6.2	20.3	0.52	15.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.10.2022	74.5	37.2	8.1	34.2	0.69	27.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.10.2022	50.1	24.5	6.7	21.8	0.52	17.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
31.10.2022	68.7	30.5	7.2	26.3	0.73	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	62.49	30.71	6.90	25.24	0.61	19.92	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :200 1 (Reaff. 2012	IS 5182 : Part 6 :200 6 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,: 2014

S. K. Singh
 Report Prepared by:



For Mitra S. K. Private Limited

A. W. Rath
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/510
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October – 2022
Sampling Location : Briquette Plant
(Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Ph (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
03.10.2022	66.4	32.5	6.8	23.2	0.48	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.10.2022	77.6	41.9	6.1	19.8	0.58	16.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.10.2022	80.2	44.5	8.9	40.2	0.75	37.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.10.2022	62.3	33.8	7.4	29.7	0.61	22.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.10.2022	72.8	40.2	7.2	34.8	0.52	28.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.10.2022	85.9	42.3	6.7	35.7	0.44	30.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.10.2022	78.4	43.9	8.4	29.4	0.62	15.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.10.2022	70.6	32.4	7.1	26.8	0.53	23.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
31.10.2022	69.2	36.2	6.8	25.4	0.63	19.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	73.71	38.63	7.27	29.44	0.57	23.73	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2:200 1 (Reaff. 2012)	IS 5182: Part 6:200 6 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Kango
Report Prepared by:



For Mitra S. K. Private Limited

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/510
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October – 2022

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	25.10.2022	56.4	32.1	6.9	27.4	0.56	22.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	25.10.2022	52.6	29.4	6.4	22.3	0.49	18.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	26.10.2022	49.7	24.7	7.2	20.1	0.62	15.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	26.10.2022	44.2	20.8	6.1	18.7	0.40	12.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :200 6 (Reaff .2012)	IS 5182 : Part 10 :199 9 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

S. K. Singh
 Report Prepared by:



For Mitra S. K. Private Limited

A. U. Rath
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Mitra S. K. Private Limited

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[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/511
Date : 11.11.2022
Sample No. : MSKGL/ED/2022-23/10/00500
Sample Description : Flue Gas Monitoring
Date of Sampling : 28.10.2022
Time of Sampling : 02:50 PM

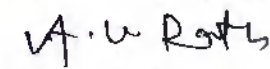
ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-1
2.	Emission due to	----
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Stack from Ground level	15 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : NA	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1.	Temperature of Emission (°C)	331 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	749 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	14.81 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	144219.67 IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	10.1 IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	5.6 IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	34.0 IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	49.0 IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	38.0 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : NA		
F. Remarks : Nil		

Report Prepared by: 



For Mitra S. K. Private Limited


Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/512
Date : 11.11.2022
Sample No. : MSKGL/ED/2022-23/10/00501
Sample Description : Flue Gas Monitoring
Date of Sampling : 28.10.2022
Time of Sampling : 12:20 PM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-2	
2.	Emission due to	----	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Stack from Ground level	15 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used : NA	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission			
		Result	Method
1.	Temperature of Emission (°C)	59	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	749	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	9.97	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	96584.60	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	10.3	IS 5182 (Part 10)-1999,RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	5.3	IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	32.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	44.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	40.0	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : NA			
F. Remarks : Nil			

Report Prepared by: *S. Kang*



For Mitra S. K. Private Limited

A. V. Rath
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
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[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/513
Date : 11.11.2022
Sample No. : MSKGL/ED/2022-23/10/00502
Sample Description : Flue Gas Monitoring
Date of Sampling : 28.10.2022
Time of Sampling : 11:40 AM

ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-3
2.	Emission due to	---
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Stack from Ground level	15 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : NA	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1.	Temperature of Emission (°C)	72 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	751 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	6.29 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	58852.2 IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	9.9 IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	5.2 IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	28.6 IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	36.2 IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	31.6 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : NA		
F. Remarks : Nil		

Report Prepared by:



For Mitra S. K. Private Limited

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/514
Date : 11.11.2022
Sample No. : MSKGL/ED/2022-23/10/01890
Sample Description : Fugitive Air

Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	29.10.2022	397	104
2.	Central Store	29.10.2022	287	94
3.	Product Handling Yard	28.10.2022	424	152
4.	Furnace Area	28.10.2022	487	194
5.	Briquette Plant	28.10.2022	545	213

S. K. Kamra
Report Prepared by:



For Mitra S. K. Private Limited

A. V. Raha
Authorized Signatory

Mitra S. K. Private Limited

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IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/205
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November - 2022
Sampling Location : Roof Top of ADM Building) (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NOx (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.11.2022	79.2	35.4	7.4	30.1	0.66	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
04.11.2022	70.5	30.6	6.9	24.7	0.74	18.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
07.11.2022	76.2	38.9	7.7	34.8	0.58	30.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.11.2022	82.4	42.4	8.4	40.1	0.71	34.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
14.11.2022	74.8	32.8	8.1	21.8	0.69	16.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.11.2022	68.1	29.7	7.2	20.1	0.80	14.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
21.11.2022	72.9	33.6	6.5	26.4	0.69	22.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.11.2022	84.7	45.7	7.4	42.1	0.58	38.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
28.11.2022	66.5	27.4	7.8	19.6	0.70	12.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	75.03	35.17	7.49	28.85	0.68	23.54	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4Junc, 1999	EPA - IO3.4June, 1999	EPA - IO3.4June, 1999	IS:5182(Part-11):2006 Reaff. 2012	IS:5182(Part-12):2004 Reaff. 2014

S. Kang
Report Prepared by:

For Mitra S. K. Private Limited

A. W. Rout
Authorized Signatory



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/206
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November – 2022
Sampling Location : GCP Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.11.2022	80.5	42.1	8.5	38.1	0.75	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
04.11.2022	78.4	38.6	8.2	32.4	0.69	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
07.11.2022	86.1	46.7	7.3	43.2	0.84	39.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.11.2022	73.4	34.1	8.6	29.8	0.72	20.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
14.11.2022	76.9	32.8	9.1	25.6	0.66	19.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.11.2022	84.6	40.2	7.6	33.4	0.79	27.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
21.11.2022	92.4	48.7	6.8	44.6	0.80	40.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.11.2022	88.3	36.8	6.6	31.8	0.77	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
28.11.2022	77.1	30.9	7.4	22.1	0.67	17.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	81.97	38.98	7.79	33.44	0.74	27.25	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	I	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	I	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Singh
Report Prepared by:



For Mitra S. K. Private Limited

A. V. Rout
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[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/207
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November – 2022
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (µg/m ³)
02.11.2022	92.5	52.1	9.4	48.5	0.87	45.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
04.11.2022	96.7	56.4	9.2	52.1	0.91	49.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
07.11.2022	88.4	48.9	8.8	42.6	0.80	37.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.11.2022	79.1	38.7	7.4	34.5	0.76	31.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
14.11.2022	82.4	40.1	6.9	32.7	0.95	28.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.11.2022	76.6	34.7	9.0	28.5	0.82	22.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
21.11.2022	90.2	42.3	8.4	38.9	0.75	34.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.11.2022	85.6	44.6	8.2	41.6	0.92	38.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
28.11.2022	83.5	46.3	7.6	42.5	0.71	40.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	86.11	44.90	8.32	40.21	0.83	36.45	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/208
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November – 2022
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.11.2022	77.4	39.7	7.8	36.5	0.66	30.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
04.11.2022	86.1	46.2	8.9	43.8	0.76	39.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
07.11.2022	72.3	33.4	9.1	30.4	0.81	21.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.11.2022	82.4	40.1	8.4	36.7	0.84	33.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
14.11.2022	88.9	49.8	9.5	45.2	0.72	42.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.11.2022	74.3	37.3	6.9	31.8	0.69	26.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
21.11.2022	68.7	29.8	7.4	22.6	0.62	18.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.11.2022	67.1	26.4	6.5	20.8	0.59	14.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
28.11.2022	84.3	47.9	8.1	45.1	0.62	40.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	77.94	38.95	8.06	34.76	0.70	29.65	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4J une, 1999	EPA - IO3.4J ue, 1999	EPA - IO3.4J ue, 1999	IS:5182(Part- 11):2006 Reaff,2012	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/210
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November – 2022
Sampling Location : Briquette Plant
(Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.11.2022	97.4	59.7	9.8	55.6	1.01	52.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
04.11.2022	90.6	52.1	9.4	50.2	0.94	46.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
07.11.2022	92.4	50.6	8.9	46.8	0.87	40.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
10.11.2022	89.1	47.5	8.6	41.3	0.69	33.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
14.11.2022	95.4	55.4	9.0	52.1	0.82	48.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
17.11.2022	87.1	49.2	9.2	44.6	0.97	39.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
21.11.2022	93.8	54.7	8.8	49.8	0.66	46.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
24.11.2022	96.5	57.4	9.1	53.6	0.79	50.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
28.11.2022	86.1	45.8	8.4	40.9	0.81	32.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	92.04	52.49	9.02	48.32	0.84	43.27	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2 :2001 (Reaff. 2012)	IS 5182: Part 6 :2006 (Reaff. 2012)	IS 5182: Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/211
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November - 2022

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	26.11.2022	75.4	35.4	6.9	30.2	0.68	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	26.11.2022	72.6	32.8	8.4	28.7	0.75	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	28.11.2022	82.8	40.7	7.6	36.9	0.65	31.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	28.11.2022	79.6	38.1	6.6	32.4	0.81	22.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff .2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - 103.4J une,19 99	EPA - 103.4J une,19 99	EPA - 103.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

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For Mitra S. K. Private Limited

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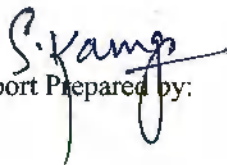
TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/212
Date : 12.12.2022
Sample No. : MSKGL/ED/2022-23/11/01397
Sample Description : Fugitive Air

Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	29.11.2022	348	98
2.	Central Store	29.11.2022	239	84
3.	Product Handling Yard	29.11.2022	512	197
4.	Furnace Area	30.11.2022	447	149
5.	Briquette Plant	30.11.2022	602	214


Report Prepared by:



For Mitra S. K. Private Limited



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steei Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/213
Date : 12.12.2022
Sample No. : MSKGL/ED/2022-23/11/01500
Sample Description : Flue Gas Monitoring
Date of Sampling : 29.11.2022
Time of Sampling : 11:30 AM

ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-1
2.	Emission due to	----
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Stack from Ground level	15 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : NA	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1.	Temperature of Emission (°C)	60 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	755 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	14.7 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	143645.07 IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	10.2 IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	5.4 IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	40.0 IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	53.0 IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	31.0 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : NA		
F. Remarks : Nil		

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For Mitra S. K. Private Limited

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/214
Date : 12.12.2022
Sample No. : MSKGL/ED/2022-23/11/01501
Sample Description : Flue Gas Monitoring
Date of Sampling : 29.11.2022
Time of Sampling : 12:05 PM

ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-2
2.	Emission due to	----
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Stack from Ground level	15 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : NA	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
	<u>Result</u>	<u>Method</u>
1.	Temperature of Emission (°C)	56 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	755 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	8.73 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	86034.46 IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	10.6 IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	5.0 IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	35.0 IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	47.0 IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	38.0 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : NA		
F. Remarks : Nil		

P. Kanyo
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For Mitra S. K. Private Limited

A. W. Rath
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/405
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December - 2022
Sampling Location : Roof Top of ADM Building) (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
01.12.2022	68.4	30.8	6.8	26.8	0.68	21.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.12.2022	70.1	34.6	7.1	30.2	0.74	25.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
08.12.2022	59.3	28.7	8.4	24.7	0.62	19.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.12.2022	77.8	38.4	7.6	32.8	0.71	28.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
15.12.2022	66.4	29.1	6.6	22.7	0.59	17.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.12.2022	70.6	33.7	8.9	29.8	0.44	23.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
22.12.2022	54.9	24.8	6.2	20.3	0.78	14.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.12.2022	63.7	31.2	7.9	27.6	0.66	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
29.12.2022	72.9	37.6	7.5	35.2	0.61	30.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	67.12	32.10	7.44	27.79	0.65	22.41	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J unc,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.; 2014

S. K. Prasad
Report Prepared by:



For Mitra S. K. Private Limited

A. W. Rath
Authorized Signatory

Mitra S. K. Private Limited



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/406
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December - 2022
Sampling Location : GCP Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
01.12.2022	80.4	40.8	8.4	36.8	0.89	33.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.12.2022	76.8	35.7	7.6	30.1	0.94	24.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
08.12.2022	79.4	38.4	8.1	32.8	0.76	29.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.12.2022	72.6	32.9	7.9	27.4	0.69	22.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
15.12.2022	87.8	43.5	6.9	40.2	0.54	36.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.12.2022	82.5	41.8	8.4	39.6	0.70	33.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
22.12.2022	66.9	30.4	9.1	24.7	0.74	20.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.12.2022	75.3	33.8	7.7	30.8	0.65	27.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
29.12.2022	89.1	46.7	9.5	42.1	0.59	40.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	78.97	38.22	8.17	33.83	0.72	29.98	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/407
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December - 2022
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
01.12.2022	84.7	42.4	8.4	39.7	0.87	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.12.2022	92.6	48.9	9.3	44.6	0.91	42.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
08.12.2022	79.4	36.8	6.8	31.7	0.75	27.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.12.2022	89.8	40.1	7.9	33.5	0.80	29.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
15.12.2022	96.4	52.4	9.8	48.7	0.70	44.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.12.2022	90.2	47.2	8.4	42.8	0.89	37.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
22.12.2022	84.7	45.6	9.1	40.1	0.94	34.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.12.2022	77.4	34.7	7.4	30.4	0.66	24.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
29.12.2022	70.8	32.1	8.1	27.8	0.90	22.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	85.11	42.24	8.35	37.70	0.82	32.84	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/408
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December – 2022
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Ph (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
01.12.2022	76.8	34.8	8.1	31.8	0.68	26.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.12.2022	80.5	39.6	6.5	33.7	0.52	30.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
08.12.2022	66.7	32.4	7.2	25.2	0.67	19.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.12.2022	62.3	28.3	6.9	33.9	0.70	24.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
15.12.2022	83.9	38.4	8.2	34.7	0.81	29.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.12.2022	74.1	31.6	6.9	21.8	0.62	16.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
22.12.2022	86.2	37.3	7.6	33.4	0.50	25.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.12.2022	70.8	30.9	7.4	17.7	0.48	13.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
29.12.2022	69.3	26.8	6.2	19.4	0.60	15.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	74.51	33.34	7.22	27.95	0.62	23.38	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/409
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December – 2022
Sampling Location : Briquette Plant
(Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
01.12.2022	94.8	45.7	9.4	42.8	0.84	38.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.12.2022	82.1	39.4	8.9	37.4	0.79	31.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
08.12.2022	90.6	42.8	7.8	39.1	0.91	34.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.12.2022	88.7	37.4	8.1	32.4	0.69	27.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
15.12.2022	79.5	33.6	9.2	29.8	0.80	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.12.2022	74.6	32.9	8.6	28.4	0.74	22.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
22.12.2022	96.7	49.8	7.4	45.9	0.88	40.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.12.2022	72.1	31.6	8.1	27.6	0.74	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
29.12.2022	80.9	38.4	7.4	33.2	0.70	30.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	84.44	39.06	8.32	35.18	0.79	29.89	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/411
Date : 10.01.2023
Sample No. : MSKGL/ED/2022-23/12/01450
Sample Description : Fugitive Air

Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	27.12.2022	379	85
2.	Central Store	27.12.2022	268	71
3.	Product Handling Yard	27.12.2022	622	201
4.	Furnace Area	28.12.2022	542	198
5.	Briquette Plant	28.12.2022	680	293


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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

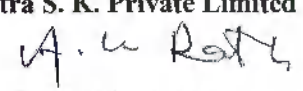
Report No. : BBS/412
Date : 10.01.2023
Sample No. : MSKGL/ED/2022-23/12/01800
Sample Description : Flue Gas Monitoring
Date of Sampling : 26.12.2022
Time of Sampling : 04:25 PM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-1	
2.	Emission due to	----	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Stack from Ground level	15 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used : NA	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission			
		Result	Method
1.	Temperature of Emission (°C)	61	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	759	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	14.16	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	138227.57	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	12.6	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	6.2	IS 13270:1992, Rffin 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	43.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	51.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	29.0	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : NA			
F. Remarks : Nil			

Report Prepared by: 



For Mitra S. K. Private Limited

Authorized Signatory

Mitra S. K. Private Limited



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IRC Village, Nayapalli
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/413
Date : 10.01.2023
Sample No. : MSKGL/ED/2022-23/12/01501
Sample Description : Flue Gas Monitoring
Date of Sampling : 26.12.2022
Time of Sampling : 03:45 PM


ANALYSIS RESULT

A. General information about stack :		
1. Stack connected to	GCP Chimney-2	
2. Emission due to	----	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :		
1. Height of the Stack from Ground level	15 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:		
1. Fuel used : NA	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission	Result	Method
1. Temperature of Emission (°C)	56	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	759	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	9.18	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	90961.43	IS 11255 (Part III),2008RA 2018
5. Concentration of Carbon monoxide (% v/v)	11.8	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6. Concentration of Carbon dioxide (% v/v)	5.8	IS 13270:1992, Rffm 2009
7. Concentration of Sulphur Dioxide (mg/Nm ³)	38.0	IS 11255 (Part II),1985RA 2014
8. Concentration of Nitrogen Dioxide (mg/Nm ³)	42.0	IS 11255 (Part 7),2005RA 2017
9. Concentration of Particulate Matters (mg/Nm ³)	34.0	IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack	: NA	
F. Remarks	: Nil	

Report Prepared by: 



For Mitra S. K. Private Limited


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Mitra S. K. Private Limited



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/414
Date : 10.01.2023
Sample No. : MSKGL/ED/2022-23/12/01502
Sample Description : Flue Gas Monitoring
Date of Sampling : 26.12.2022
Time of Sampling : 02:55 PM


ANALYSIS RESULT

A. General information about stack :		
1. Stack connected to	GCP Chimney-4	
2. Emission due to	----	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :		
1. Height of the Stack from Ground level	15 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:		
1. Fuel used : NA	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission	Result	Method
1. Temperature of Emission (°C)	70	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	759	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	6.1	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	58021.83	IS 11255 (Part III),2008RA 2018
5. Concentration of Carbon monoxide (% v/v)	10.8	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6. Concentration of Carbon dioxide (% v/v)	5.2	IS 13270:1992, Rffm 2009
7. Concentration of Sulphur Dioxide (mg/Nm ³)	27.0	IS 11255 (Part II),1985RA 2014
8. Concentration of Nitrogen Dioxide (mg/Nm ³)	39.0	IS 11255 (Part 7),2005RA 2017
9. Concentration of Particulate Matters (mg/Nm ³)	25.0	IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : NA		
F. Remarks : Nil		

Report Prepared by: 



For Mitra S. K. Private Limited


Authorized Signatory

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TEST REPORT

Name & Address of the Customer :
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(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/105
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January - 2023
Sampling Location : Roof Top of ADM Building) (Core Zone)

Date	PARAMETERS											
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO _x ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	NH ₃ ($\mu\text{g}/\text{m}^3$)	O ₃ ($\mu\text{g}/\text{m}^3$)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)	As (ng/m^3)	C ₆ H ₆ ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)
02.01.2023	68.7	30.4	7.4	26.4	0.65	20.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.01.2023	70.5	37.7	6.9	33.5	0.59	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.01.2023	66.4	34.1	7.8	30.1	0.70	21.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.01.2023	59.8	27.8	8.1	22.8	0.62	17.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.01.2023	72.3	39.2	6.2	35.4	0.72	31.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.01.2023	55.4	28.9	7.4	22.7	0.55	16.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.01.2023	50.6	23.4	6.5	19.2	0.78	13.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.01.2023	62.1	32.7	7.2	28.6	0.45	26.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.01.2023	60.7	29.8	6.1	21.5	0.49	12.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	62.94	31.55	7.07	26.69	0.62	20.59	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,; 2014

S. K. Kamra
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Rath
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/106
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January – 2023
Sampling Location : GCP Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.01.2023	78.4	38.5	8.1	35.4	0.74	29.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.01.2023	75.6	36.2	7.9	32.1	0.69	24.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.01.2023	81.4	41.8	6.7	38.9	0.72	33.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.01.2023	69.8	32.4	7.3	27.4	0.58	21.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.01.2023	64.7	35.9	8.3	30.2	0.60	18.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.01.2023	70.1	31.6	6.5	27.8	0.54	20.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.01.2023	66.9	28.7	7.2	23.4	0.47	17.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.01.2023	72.4	39.2	6.9	36.1	0.52	34.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.01.2023	62.7	25.4	6.3	22.8	0.44	16.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	71.33	34.41	7.24	30.45	0.59	24.13	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4J une, 1999	EPA - IO3.4J une, 1999	EPA - IO3.4J une, 1999	IS:5182(Part-11):2006 Reaff, 2012	IS:5182(Part-12):2004 Reaff, 2014

S. Kango
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/107
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January – 2023
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.01.2023	80.6	45.7	8.8	42.1	0.89	35.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.01.2023	84.7	42.6	9.1	38.9	0.78	30.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.01.2023	77.2	35.8	8.6	30.1	0.94	24.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.01.2023	93.4	49.2	7.8	44.6	0.82	40.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.01.2023	88.7	47.2	9.2	42.5	0.66	36.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.01.2023	90.2	42.3	8.6	36.7	0.72	29.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.01.2023	75.3	40.1	6.9	32.1	0.90	26.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.01.2023	82.4	38.6	7.4	33.9	0.75	24.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.01.2023	71.8	33.4	8.1	29.7	0.70	21.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	82.70	41.65	8.28	36.73	0.79	29.96	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. . 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

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For Mitra S. K. Private Limited

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/108
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January – 2023
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.01.2023	70.8	39.6	8.4	32.8	0.65	27.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.01.2023	89.4	45.2	9.6	41.3	0.78	36.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.01.2023	78.5	36.1	7.5	30.7	0.69	24.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.01.2023	83.4	42.3	8.1	37.6	0.84	32.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.01.2023	73.8	33.2	7.8	29.7	0.74	25.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.01.2023	87.2	48.4	9.2	46.2	0.57	43.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.01.2023	75.6	32.8	6.9	25.3	0.49	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.01.2023	72.1	30.2	6.7	27.8	0.88	18.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.01.2023	80.4	40.4	7.2	35.2	0.62	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	79.02	36.68	7.63	34.06	0.69	29.05	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. Kamra
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For Mitra S. K. Private Limited
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/109
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January – 2023
Sampling Location : Briquette Plant
(Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.01.2023	92.5	49.8	8.9	46.7	0.92	40.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
05.01.2023	96.4	52.7	9.7	48.3	1.01	42.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.01.2023	89.8	44.3	9.1	42.6	0.68	35.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
12.01.2023	92.1	50.2	8.2	40.7	0.79	31.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.01.2023	83.4	46.5	8.7	43.2	0.72	38.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
19.01.2023	78.6	42.7	7.9	37.6	0.66	32.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.01.2023	72.3	39.8	7.4	32.3	0.57	28.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
26.01.2023	80.7	48.1	8.0	44.7	0.59	41.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.01.2023	85.3	40.6	9.3	32.6	0.62	24.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	85.68	46.07	8.58	40.96	0.73	35.09	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2 :2001 (Reaff. 2012)	IS 5182: Part 6 :2006 (Reaff. 2012)	IS 5182: Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. Kango
Report Prepared by:

For Mitra S. K. Private Limited
A. U. Rath
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/112
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/01800
Sample Description : Flue Gas Monitoring
Date of Sampling : 13.01.2023
Time of Sampling : 02:50 PM

ANALYSIS RESULT

A . General information about stack :		
1. Stack connected to	GCP Chimney-1	
2. Emission due to	Melting of Coal, Dolomite & Iron	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B . Physical characteristics of stack :		
1. Height of the Sampling Point from Ground level	15.0 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C . Analysis/Characteristic of stack:		
1. Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D . Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of Emission (°C)	70	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	754	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	15.1	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	146930.7	IS 11255 (Part III),2008RA 2018
5. Concentration of Particulate Matters (mg/Nm ³)	18.45	IS 11255 (Part I):1985,RA 2014
E . Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F . Remarks : Nil		

S. K. Singh
Report Prepared by:



For Mitra S. K. Private Limited

A. Upath
Authorized Signatory

Mitra S. K. Private Limited

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[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/113
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/01801
Sample Description : Flue Gas Monitoring
Date of Sampling : 13.01.2023
Time of Sampling : 12:10 PM

ANALYSIS RESULT

A . General information about stack :		
1. Stack connected to	GCP Chimney-2	
2. Emission due to	Melting of Coal, Dolomite & Iron	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B . Physical characteristics of stack :		
1. Height of the Sampling Point from Ground level	15.0 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C . Analysis/Characteristic of stack:		
1. Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D . Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of Emission (°C)	46	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	756	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	17.8	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	186481.4	IS 11255 (Part III),2008RA 2018
5. Concentration of Particulate Matters (mg/Nm ³)	46.4	IS 11255 (Part I):1985,RA 2014
E . Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F . Remarks : Nil		

S. K. Kanga
Report Prepared by:



For Mitra S. K. Private Limited

A. W. Rath
Authorized Signatory

Mitra S. K. Private Limited

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IRC Village, Nayapalli
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[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/114
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/01802
Sample Description : Flue Gas Monitoring
Date of Sampling : 13.01.2023
Time of Sampling : 10:38 AM

ANALYSIS RESULT

A. General information about stack :		
1. Stack connected to	GCP Chimney-3&4	
2. Emission due to	Melting of Coal, Dolomite & Iron	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :		
1. Height of the Sampling Point from Ground level	15.0 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:		
1. Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of Emission (°C)	68	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	757	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	14.9	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	146415.9	IS 11255 (Part III),2008RA 2018
5. Concentration of Particulate Matters (mg/Nm ³)	15.9	IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F. Remarks : Nil		

S. Vanga
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Path
Authorized Signatory

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/115
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/01700
Sample Description : Fugitive Air

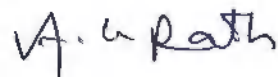
Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	27.01.2023	412	119
2.	Central Store	27.01.2023	358	98
3.	Product Handling Yard	27.01.2023	487	166
4.	Furnace Area	28.01.2023	510	240
5.	Briquette Plant	28.01.2023	624	380


Report Prepared by:



For Mitra S. K. Private Limited


Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



T : (0674) 2362916, 2360917
F : (0674) 2362918

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/200
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/02000
Sample Description : Flue Gas Monitoring
Date of Sampling : 27.01.2023
Time of Sampling : 08:45 AM

ANALYSIS RESULT

A. General information about stack :		
1. Stack connected to	GCP Chimney-1	
2. Emission due to	Melting of Coal, Dolomite & Iron	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :		
1. Height of the Sampling Point from Ground level	15.0 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:		
1. Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of Emission (°C)	49	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	758	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	17.01	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	175329.7	IS 11255 (Part III),2008RA 2018
5. Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6. Concentration of Carbon dioxide (% v/v)	6.2	IS 13270:1992, Rffm 2009
7. Concentration of Sulphur Dioxide (mg/Nm ³)	39.0	IS 11255 (Part II),1985RA 2014
8. Concentration of Nitrogen Dioxide (mg/Nm ³)	46.0	IS 11255 (Part 7),2005RA 2017
9. Concentration of Particulate Matters (mg/Nm ³)	23.8	IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F. Remarks : Nil		

S. K. Prasad
Report Prepared by:



For Mitra S. K. Private Limited

A. V. Rath
Authorized Signatory

Mitra S. K. Private Limited



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :

FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/201

Date : 08.02.2023

Sample No. : MSKGL/ED/2022-23/01/02001

Sample Description : Flue Gas Monitoring

Date of Sampling : 27.01.2023

Time of Sampling : 02:15 PM

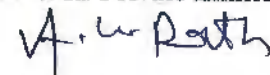
ANALYSIS RESULT

A.	General information about stack :		
1.	Stack connected to	GCP Chimney-2	
2.	Emission due to	Melting of Coal, Dolomite & Iron	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B.	Physical characteristics of stack :		
1.	Height of the Sampling Point from Ground level	15.0 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C.	Analysis/Characteristic of stack:		
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D.	Results of sampling & analysis of gaseous emission		
		Result	Method
1.	Temperature of Emission (°C)	51	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	758	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	16.8	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	172694.4	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	6.9	IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	42.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	53.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	42.9	IS 11255 (Part I):1985,RA 2014
E.	Pollution control device		
	Details of pollution control devices attached with the stack : Bag Filter		
F.	Remarks : Nil		

Report Prepared by: 



For Mitra S. K. Private Limited


Authorized Signatory

Mitra S. K. Private Limited



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/202
Date : 08.02.2023
Sample No. : MSKGL/ED/2022-23/01/02002
Sample Description : Flue Gas Monitoring
Date of Sampling : 27.01.2023
Time of Sampling : 12:45 PM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-3&4	
2.	Emission due to	Melting of Coal, Dolomite & Iron	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Sampling Point from Ground level	15.0 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission			
		Result	Method
1.	Temperature of Emission (°C)	78	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	758	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	14.01	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	132897.3	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	7.0	IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	35.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	49.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	18.2	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : Bag Filter			
F. Remarks : Nil			

S. Kanga
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Pathy
Authorized Signatory

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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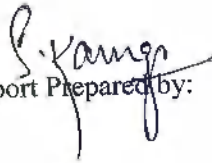
TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/305
Date : 04.04.2023
Sample No. : MSKGL/ED/2022-23/03/01780
Sample Description : Fugitive Air

Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	18.03.2023	474	131
2.	Central Store	18.03.2023	310	101
3.	Product Handling Yard	22.03.2023	596	178
4.	Furnace Area	22.03.2023	689	223
5.	Briquette Plant	22.03.2023	798	369

Report Prepared by: 



For Mitra S. K. Private Limited


Authorized Signatory

N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/205
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February - 2023
Sampling Location : Roof Top of ADM Building) (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.02.2023	69.7	31.8	7.4	26.9	0.68	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.02.2023	72.5	39.6	6.9	32.5	0.75	27.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.02.2023	66.8	33.2	7.8	28.1	0.64	23.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.02.2023	58.2	28.7	6.6	22.6	0.72	17.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.02.2023	54.9	26.9	8.1	20.9	0.61	15.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.02.2023	50.8	24.7	7.5	19.7	0.59	13.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.02.2023	60.6	30.9	6.8	25.6	0.52	21.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.02.2023	74.2	37.8	7.1	31.9	0.70	26.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	63.46	31.70	7.27	26.02	0.65	20.79	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4Junc, 1999	EPA - IO3.4Junc, 1999	EPA - IO3.4Junc, 1999	IS:5182(Part-11):2006 Reaff,2012	IS:5182(Part-12):2004 Reaff, 2014

S. K. Singh
 Report Prepared by:



For Mitra S. K. Private Limited

U. K. Rathi
 Authorized Signatory

N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/206
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February – 2023
Sampling Location : GCP Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.02.2023	77.8	42.8	8.4	39.6	0.87	35.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.02.2023	75.3	38.9	7.6	34.5	0.76	31.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.02.2023	65.7	31.2	6.5	27.4	0.66	25.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.02.2023	72.3	34.7	7.8	30.2	0.80	27.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.02.2023	68.7	29.8	6.4	25.7	0.72	20.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.02.2023	79.2	45.6	8.6	41.8	0.69	32.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.02.2023	62.7	24.2	7.1	20.1	0.72	16.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.02.2023	67.3	28.6	6.9	22.7	0.62	18.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	71.12	34.47	7.41	30.25	0.73	26.07	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. . 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Kanyo
 Report Prepared by:

For Mitra S. K. Private Limited

A. K. Datta
 Authorized Signatory



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/207
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February – 2023
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.02.2023	87.4	48.7	9.4	44.7	0.88	40.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.02.2023	82.3	39.6	8.9	35.9	0.79	29.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.02.2023	77.6	35.4	7.8	30.2	0.84	23.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.02.2023	74.3	32.8	7.7	27.4	0.63	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.02.2023	85.8	45.7	9.2	41.8	0.95	37.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.02.2023	72.6	36.2	8.2	33.7	0.74	27.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.02.2023	80.1	40.1	6.8	31.8	0.68	24.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.02.2023	70.6	30.9	6.6	22.4	0.77	17.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	78.83	38.67	8.07	33.49	0.78	27.67	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2 :2001 (Reaff. 2012)	IS 5182: Part 6 :2006 (Reaff. 2012)	IS 5182: Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J unc,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,; 2014

S. K. Kamra
Report Prepared by:

For Mitra S. K. Private Limited
A. W. Pathy
Authorized Signatory



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/208
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February – 2023
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.02.2023	69.7	28.4	6.4	24.7	0.76	20.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.02.2023	78.4	33.6	7.9	30.8	0.69	24.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.02.2023	82.6	39.3	8.8	35.6	0.78	31.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.02.2023	87.3	46.8	8.4	42.5	0.80	39.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.02.2023	72.1	35.2	7.5	31.9	0.82	27.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.02.2023	66.8	27.5	6.7	23.7	0.71	19.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.02.2023	79.4	32.9	7.7	26.4	0.65	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.02.2023	74.2	36.4	7.2	34.6	0.67	30.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	76.31	35.021	7.57	31.27	0.73	26.83	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff . 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Singh
Report Prepared by:

For Mitra S. K. Private Limited

A. K. Das
Authorized Signatory



N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/209
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February – 2023
Sampling Location : Briquette Plant
 (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NOx (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.02.2023	96.8	56.8	9.8	52.3	0.89	47.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.02.2023	94.7	52.1	8.6	49.5	0.95	40.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.02.2023	88.5	48.7	9.4	44.2	0.86	34.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.02.2023	83.6	46.3	9.2	40.8	1.01	30.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.02.2023	92.8	50.6	8.4	46.2	0.97	43.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.02.2023	80.5	44.1	7.9	40.1	0.84	32.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.02.2023	86.3	49.2	8.8	39.5	0.79	35.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.02.2023	90.5	55.8	7.6	50.6	0.75	46.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	89.21	50.45	8.71	45.40	0.88	39.07	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. .2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,; 2014

S. K. Prasad
 Report Prepared by:

For Mitra S. K. Private Limited
A. K. Patra
 Authorized Signatory



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

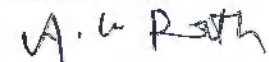
Report No. : BBS/211
Date : 09.03.2023
Sample No. : MSKGL/ED/2022-23/02/02000
Sample Description : Flue Gas Monitoring
Date of Sampling : 10.02.2023
Time of Sampling : 11:50 AM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-1	
2.	Emission due to	Melting of Coal, Dolomite & Iron	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Sampling Point from Ground level	15.0 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used	: Coal, Dolomite & Iron	
		2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission			
		Result	Method
1.	Temperature of Emission (°C)	68	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	751	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	15.5	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	151022.5	IS 11255 (Part III),2008RA 2018
5.	Concentration of Particulate Matters (mg/Nm ³)	16.68	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : Bag Filter			
F. Remarks : Nil			

Report Prepared by:


For Mitra S. K. Private Limited


Authorized Signatory



N-5/100, Ground Floor
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/212
Date : 09.03.2023
Sample No. : MSKGL/ED/2022-23/02/02001
Sample Description : Flue Gas Monitoring
Date of Sampling : 10.02.2023
Time of Sampling : 12:50 PM

ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-2
2.	Emission due to	Melting of Coal, Dolomite & Iron
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Sampling Point from Ground level	15.0 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
		Result Method
1.	Temperature of Emission (°C)	51 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	752 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	15.6 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	160270.7 IS 11255 (Part III),2008RA 2018
5.	Concentration of Particulate Matters (mg/Nm ³)	44.21 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F. Remarks : Nil		

S. Kango
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Rout
Authorized Signatory

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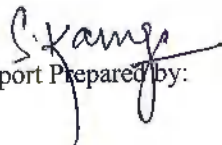
TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/213
Date : 09.03.2023
Sample No. : MSKGL/ED/2022-23/02/02002
Sample Description : Flue Gas Monitoring
Date of Sampling : 10.02.2023
Time of Sampling : 02:50 PM

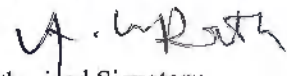
ANALYSIS RESULT

A. General information about stack :		
1.	Stack connected to	GCP Chimney-3&4
2.	Emission due to	Melting of Coal, Dolomite & Iron
3.	Material of construction of stack	M.S
4.	Shape of Stack	Circular
5.	Whether stack is provided with permanent platform & ladder	Yes
6.	Boiler/Furnace/DG/Kiln Capacity	NA
B. Physical characteristics of stack :		
1.	Height of the Sampling Point from Ground level	15.0 m
2.	Diameter of the stack at Sampling point	2.0 m
3.	Area of stack	3.14 m ²
C. Analysis/Characteristic of stack:		
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA
D. Results of sampling & analysis of gaseous emission		
		Result Method
1.	Temperature of Emission (°C)	70 IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	757 USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	15.1 IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	147516.1 IS 11255 (Part III),2008RA 2018
5.	Concentration of Particulate Matters (mg/Nm ³)	18.39 IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F. Remarks : Nil		

Report Prepared by: 



For Mitra S. K. Private Limited


Authorized Signatory

N-5/100, Ground Floor
IRC Village, Nayapalli
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[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/214
Date : 09.03.2023
Sample No. : MSKGL/ED/2022-23/02/01900
Sample Description : Fugitive Air


Analysis Result of Fugitive Air

Sl. No	Sampling Location	Date of Sampling	Suspended Particulate Matter (SPM) in $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter (RPM) in $\mu\text{g}/\text{m}^3$
1.	GCP Area	10.02.2023	498	123
2.	Central Store	10.02.2023	284	79
3.	Product Handling Yard	11.02.2023	540	156
4.	Furnace Area	11.02.2023	670	210
5.	Briquette Plant	11.02.2023	780	320


Report Prepared by:



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/307
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March - 2023
Sampling Location : CPP (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.03.2023	75.4	35.4	7.8	31.8	0.75	25.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.03.2023	68.9	29.7	8.5	23.6	0.69	18.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.03.2023	62.8	36.4	7.4	34.5	0.84	30.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.03.2023	72.1	30.1	6.9	26.1	0.64	21.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.03.2023	65.8	27.6	7.2	22.8	0.72	15.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.03.2023	77.4	39.8	8.9	35.4	0.63	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.03.2023	58.9	23.7	6.7	19.6	0.59	16.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.03.2023	56.7	26.1	7.4	20.8	0.71	13.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.03.2023	69.3	33.7	6.6	27.1	0.68	24.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	67.48	31.39	7.49	26.85	0.69	22.08	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2 :2001 (Reaff. 2012)	IS 5182: Part 6 :2006 (Reaff. 2012)	IS 5182: Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - 103.4J une,19 99	EPA - 103.4Ju ne,1999	EPA - 103.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff.20 12	IS:5182(Part- 12):2004 Reaff.; 2014

S. K. Singh
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Rath
Authorized Signatory

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/308
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March – 2023
Sampling Location : Switch Yard (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.03.2023	78.4	40.8	8.6	36.9	0.86	33.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.03.2023	74.5	35.4	6.1	32.1	0.75	26.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.03.2023	68.5	30.7	7.9	24.7	0.64	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.03.2023	70.6	32.1	7.2	29.8	0.57	23.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.03.2023	69.2	28.4	7.6	22.4	0.54	18.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.03.2023	71.8	33.6	8.8	30.1	0.70	27.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.03.2023	67.4	25.1	7.3	20.8	0.47	14.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.03.2023	75.1	37.8	7.0	31.7	0.49	24.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.03.2023	62.7	28.4	6.9	21.6	0.51	15.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	70.91	32.48	7.49	27.79	0.61	22.70	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182: Part 2:2001 (Reaff. 2012)	IS 5182: Part 6:2006 (Reaff. 2012)	IS 5182: Part 10:1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - 103.4J une,1999	EPA - 103.4J une,1999	EPA - 103.4J une,1999	IS:5182(Part-11):2006 Reaff,2012	IS:5182(Part-12):2004 Reaff, 2014

R. Yang
Report Prepared by:

For Mitra S. K. Private Limited

A. K. Ray
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[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/309
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March – 2023
Sampling Location : Power Plant (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.03.2023	80.4	46.8	9.4	42.8	0.78	37.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.03.2023	76.6	42.1	8.5	36.8	0.83	30.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.03.2023	71.3	36.4	7.6	32.1	0.69	26.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.03.2023	84.2	44.7	7.2	40.8	0.74	37.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.03.2023	69.8	29.1	8.6	24.7	0.80	21.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.03.2023	73.7	32.5	9.1	29.5	0.65	27.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.03.2023	82.4	40.6	7.8	34.4	0.71	32.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.03.2023	66.8	27.5	6.7	24.8	0.67	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.03.2023	82.1	38.1	6.8	33.1	0.70	23.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	76.37	37.53	7.96	33.22	0.73	28.52	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J unc,19 99	EPA - IO3.4Ju nc,1999	EPA - IO3.4Ju nc,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff.: 2014

S. K. Singh
Report Prepared by:



For Mitra S. K. Private Limited

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 [CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/310
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March – 2023
Sampling Location : COB (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.03.2023	74.2	37.4	6.8	32.1	0.78	27.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.03.2023	66.7	40.1	7.5	37.8	0.84	34.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.03.2023	63.4	34.8	9.4	30.2	0.63	22.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.03.2023	75.6	39.2	7.9	33.2	0.57	30.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.03.2023	72.1	34.7	8.6	29.7	0.59	21.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.03.2023	78.8	42.8	6.7	38.3	0.80	35.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.03.2023	69.4	28.4	7.1	24.7	0.72	20.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.03.2023	60.7	24.7	6.5	22.1	0.66	18.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.03.2023	62.8	26.3	8.2	20.8	0.69	16.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	69.30	34.26	7.63	29.87	0.70	25.35	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - 103.4J une,19 99	EPA - 103.4Ju ne,1999	EPA - 103.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff: 2014

Report Prepared by: *S. K. Singh*



For Mitra S. K. Private Limited

A. K. Rath
 Authorized Signatory

N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
 F : (0674) 2362918

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/310
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March – 2023
Sampling Location : Briquette Plant
 (Core Zone)

Date	PARAMETERS											
	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
02.03.2023	89.7	38.7	9.4	33.6	0.87	30.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
06.03.2023	92.4	42.5	7.6	39.4	1.01	36.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
09.03.2023	84.8	36.1	9.6	32.7	0.96	28.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
13.03.2023	78.9	31.8	7.4	24.8	0.75	20.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
16.03.2023	82.3	40.3	9.2	31.2	0.67	24.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
20.03.2023	80.9	43.8	8.6	40.1	0.80	34.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
23.03.2023	96.4	46.4	8.1	42.8	0.72	39.2	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
27.03.2023	74.8	38.7	7.9	34.5	0.69	30.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
30.03.2023	90.3	41.9	9.1	36.3	0.77	32.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Average	85.02	39.78	8.47	34.88	0.81	30.59	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard	100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)	24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD	IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182: Part 2 :2001 (Reaff. 2012)	IS 5182: Part 6 :2006 (Reaff. 2012)	IS 5182: Part 10 :1999 (Reaff.2 014)	IS 5182: Part 25:201 8	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4Ju ne,1999	EPA - IO3.4Ju ne,1999	IS:5182(Part- 11):2006 Reaff,20 12	IS:5182(Part- 12):2004 Reaff,; 2014

S. K. Raut
 Report Prepared by:



For Mitra S. K. Private Limited

A. K. Raut
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IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/312
Date : 04.04.2023
Sample No. : MSKGL/ED/2022-23/03/00500
Sample Description : Flue Gas Monitoring
Date of Sampling : 18.03.2023
Time of Sampling : 09:50 AM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-1	
2.	Emission due to	Melting of Coal, Dolomite & Iron	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Sampling Point from Ground level	15.0 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission		Result	Method
1.	Temperature of Emission (°C)	66	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	754	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	16.09	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	166314.7	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	6.4	IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	34.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	49.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	20.6	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : Bag Filter			
F. Remarks : Nil			

Report Prepared by:
S. K. Patra



For Mitra S. K. Private Limited

A. K. Rout
Authorized Signatory

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/313
Date : 04.04.2023
Sample No. : MSKGL/ED/2022-23/03/00501
Sample Description : Flue Gas Monitoring
Date of Sampling : 18.03.2023
Time of Sampling : 10:15 AM

ANALYSIS RESULT

A. General information about stack :			
1.	Stack connected to	GCP Chimney-2	
2.	Emission due to	Melting of Coal, Dolomite & Iron	
3.	Material of construction of stack	M.S	
4.	Shape of Stack	Circular	
5.	Whether stack is provided with permanent platform & ladder	Yes	
6.	Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :			
1.	Height of the Sampling Point from Ground level	15.0 m	
2.	Diameter of the stack at Sampling point	2.0 m	
3.	Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:			
1.	Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission			
		Result	
		Method	
1.	Temperature of Emission (°C)	55	IS 11255 (Part III),2008RA 2018
2.	Barometric pressure (mm of Hg)	754	USEPA Part 2 - 25/09/1996
3.	Velocity of gas (m/sec.)	14.02	IS 11255 (Part III),2008RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	168421.4	IS 11255 (Part III),2008RA 2018
5.	Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6.	Concentration of Carbon dioxide (% v/v)	6.6	IS 13270:1992, Rffm 2009
7.	Concentration of Sulphur Dioxide (mg/Nm ³)	44.0	IS 11255 (Part II),1985RA 2014
8.	Concentration of Nitrogen Dioxide (mg/Nm ³)	52.0	IS 11255 (Part 7),2005RA 2017
9.	Concentration of Particulate Matters (mg/Nm ³)	38.6	IS 11255 (Part I):1985,RA 2014
E. Pollution control device			
Details of pollution control devices attached with the stack : Bag Filter			
F. Remarks : Nil			

S. K. Ganguly
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Pathy
Authorized Signatory

Mitra S. K. Private Limited



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/314
Date : 04.04.2023
Sample No. : MSKGL/ED/2022-23/03/00502
Sample Description : Flue Gas Monitoring
Date of Sampling : 18.03.2023
Time of Sampling : 11:50 AM

ANALYSIS RESULT

A. General information about stack :		
1. Stack connected to	GCP Chimney-3&4	
2. Emission due to	Melting of Coal, Dolomite & Iron	
3. Material of construction of stack	M.S	
4. Shape of Stack	Circular	
5. Whether stack is provided with permanent platform & ladder	Yes	
6. Boiler/Furnace/DG/Kiln Capacity	NA	
B. Physical characteristics of stack :		
1. Height of the Sampling Point from Ground level	15.0 m	
2. Diameter of the stack at Sampling point	2.0 m	
3. Area of stack	3.14 m ²	
C. Analysis/Characteristic of stack:		
1. Fuel used : Coal, Dolomite & Iron	2. Fuel Consumption : NA	
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of Emission (°C)	76	IS 11255 (Part III),2008RA 2018
2. Barometric pressure (mm of Hg)	754	USEPA Part 2 - 25/09/1996
3. Velocity of gas (m/sec.)	12.81	IS 11255 (Part III),2008RA 2018
4. Quantity of Gas Flow (Nm ³ /hr)	129987.6	IS 11255 (Part III),2008RA 2018
5. Concentration of Carbon monoxide (% v/v)	<0.2	IS 5182 (Part 10)-1999;RA2014 (NDIR)
6. Concentration of Carbon dioxide (% v/v)	7.2	IS 13270:1992, Rffm 2009
7. Concentration of Sulphur Dioxide (mg/Nm ³)	38.0	IS 11255 (Part II),1985RA 2014
8. Concentration of Nitrogen Dioxide (mg/Nm ³)	45.0	IS 11255 (Part 7),2005RA 2017
9. Concentration of Particulate Matters (mg/Nm ³)	24.5	IS 11255 (Part I):1985,RA 2014
E. Pollution control device		
Details of pollution control devices attached with the stack : Bag Filter		
F. Remarks : Nil		

S. Kango
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Rath
Authorized Signatory

ANNEXURE - 2

N-5/100, Ground Floor
 IRC Village, Nayapalli
 Bhubaneswar - 751015
 [CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/510
Date : 11.11.2022
Sample Description : Ambient Air Quality
Month of Sampling : October – 2022

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	25.10.2022	56.4	32.1	6.9	27.4	0.56	22.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	25.10.2022	52.6	29.4	6.4	22.3	0.49	18.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	26.10.2022	49.7	24.7	7.2	20.1	0.62	15.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	26.10.2022	44.2	20.8	6.1	18.7	0.40	12.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :200 6 (Reaff .2012)	IS 5182 : Part 10 :199 9 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

S. K. Singh
 Report Prepared by:



For Mitra S. K. Private Limited

A. U. Rath
 Authorized Signatory

Mitra S. K. Private Limited



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist - Jajpur, Odisha - 755026

Report No. : BBS/211
Date : 12.12.2022
Sample Description : Ambient Air Quality
Month of Sampling : November - 2022

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	26.11.2022	75.4	35.4	6.9	30.2	0.68	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	26.11.2022	72.6	32.8	8.4	28.7	0.75	20.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	28.11.2022	82.8	40.7	7.6	36.9	0.65	31.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	28.11.2022	79.6	38.1	6.6	32.4	0.81	22.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff .2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - 103.4J une,19 99	EPA - 103.4J une,19 99	EPA - 103.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

S. K. Ganguly
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Raut
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N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/410
Date : 10.01.2023
Sample Description : Ambient Air Quality
Month of Sampling : December – 2022

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	23.12.2022	65.8	28.4	7.1	22.1	0.59	18.7	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	23.12.2022	70.3	33.2	6.8	30.4	0.61	24.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	28.12.2022	74.8	36.8	7.6	28.5	0.72	19.4	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	28.12.2022	69.3	25.3	6.4	20.8	0.69	16.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annu al	Annu al
TEST METHOD		IS 5182: Part 23:20 06 (Reaff . 2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff .2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

S. K. Kamra
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For Mitra S. K. Private Limited

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Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]



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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/110
Date : 08.02.2023
Sample Description : Ambient Air Quality
Month of Sampling : January – 2023

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	17.01.2023	58.9	27.6	6.8	20.4	0.45	16.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakupura	17.01.2023	64.2	30.8	7.4	26.8	0.57	21.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	27.01.2023	70.5	38.4	8.1	32.2	0.68	28.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	29.01.2023	54.8	23.9	6.6	21.3	0.40	18.3	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff .2012	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012	IS 5182 : Part 6 :2006 (Reaff .2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	EPA - IO3.4J une,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

S. Kamra
Report Prepared by:



For Mitra S. K. Private Limited

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 [CIN: U51909WB1956PTC023037]

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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
 (Tata Steel Mining)
 Dist – Jajpur, Odisha - 755026

Report No. : BBS/210
Date : 10.03.2023
Sample Description : Ambient Air Quality
Month of Sampling : February – 2023

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Ph (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	15.02.2023	60.2	31.8	7.2	27.8	0.59	22.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	15.02.2023	57.3	24.2	6.9	20.3	0.49	17.6	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	25.02.2023	67.8	34.9	7.7	30.2	0.64	25.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	25.02.2023	51.2	22.3	6.2	19.5	0.45	12.8	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:2006 (Reaff. 2012)	IS 5182: Part 24:2019	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. 2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:2018	IS 5182: Part 09:14	EPA - IO3.4J une,1999	EPA - IO3.4J une,1999	EPA - IO3.4J une,1999	IS:5182(Part 11):2006 Reaff, 2012	IS:5182(Part 12):2004 Reaff, 2014

S. K. Singh
 Report Prepared by:

For Mitra S. K. Private Limited

A. K. Rout
 Authorized Signatory



N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
F : (0674) 2362918

TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/311
Date : 04.04.2023
Sample Description : Ambient Air Quality
Month of Sampling : March – 2023

Buffer Zone

Location	Date	PARAMETERS											
		PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)
Rabana	15.03.2023	59.4	34.6	6.8	30.4	0.72	25.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Jhakapura	15.03.2023	62.8	36.3	7.4	31.6	0.54	28.5	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Bangala	17.03.2023	56.4	29.5	6.4	23.7	0.60	18.9	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
Kumudi Sahi	17.03.2023	60.5	25.3	6.7	20.6	0.49	14.1	<20.0	<0.01	<5.0	<1.0	<4.2	<0.5
CPCB, New Delhi AAQ Standard		100	60	80	80	4	400	180	1	20	6	5	1
Time Weighted Average (hrs.)		24	24	24	24	1	24	1	24	Annual	Annual	Annual	Annual
TEST METHOD		IS 5182: Part 23:20 06 (Reaff. 2012)	IS 5182: Part 24:201 9	IS 5182 : Part 2 :2001 (Reaff. 2012)	IS 5182 : Part 6 :2006 (Reaff. .2012)	IS 5182 : Part 10 :1999 (Reaff. 2014)	IS 5182: Part 25:20 18	IS 5182: Part 09:14	EPA - 103.4J unc,19 99	EPA - 103.4J unc,19 99	EPA - 103.4J unc,19 99	IS:518 2(Part - 11):20 06 Reaff, 2012	IS:518 2(Part - 12):20 04 Reaff, : 2014

C. Yang
Report Prepared by:



For Mitra S. K. Private Limited

A. K. Patil
Authorized Signatory

ANNEXURE - 3



- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Test Report No: Envlab/23-24/TR-4177

Date: 23.12.2022

TEST REPORT

Customer Name & Address	: M/s Ferro Alloys Plant (TATA Steel Mining) Jajpur, Odisha		
SAMPLE DETAILS			
Sample Location & Code	S1- Slag Sample	Sampled by	FAP Representative
Sample Description	Slag Sample	Sampling Procedure	EPA 1311 / EPA 200.8
Sample Source	Ferro Alloys Plant (TATA Steel Mining)	Sample Received on	13.12.2022
Sampling Date	12.12.2022	Test Completed on	19.12.2022

Sl. No	Parameters	Units	Govt. of India, MoEF & CC Schedule-II based on leachable concentration limits (TCLP) or Soluble Threshold limit Concentration (STLC), Class A 2016	Test methods	Results
1	Arsenic as As	mg/l	5.0 mg/l	TCLP With Zero Head Extraction Followed by Analysis in AAS & UV-Vis Spectrometer	<0.002
2	Cadmium as cd	mg/l	1.0 mg/l		<0.03
3	Chromium as Cr	mg/l	5.0 mg/l		0.031
4	Lead as Pb	mg/l	5.0 mg/l		0.063
5	Mercury as Hg	mg/l	0.2 mg/l		<0.002
6	Selenium as Se	mg/l	1.0 mg/l		<0.002
7	Nickel as Ni	mg/l	20.0 mg/l		<0.1
8	Zinc as Zn	mg/l	20.0 mg/l		0.063
9	Manganese as Mn	mg/l	250.0 mg/l		0.34
10	Copper as Cu	mg/l	10.0 mg/l		0.042

Reviewed by 


Approved by 

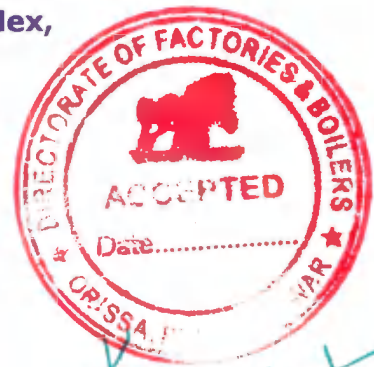

ANNEXURE - 4

S/No 256/18

ROHIT FERRO-TECH LIMITED
KALINGA NAGAR INDUSTRIAL COMPLEX, JAJPUR, ORISSA

ON-SITE EMERGENCY PLAN

M/s ROHIT FERRO-TECH LIMITED
Kalinga Nagar Industrial Complex,
Jajpur, Odisha: 755026



[Handwritten signature]
Director of Factories & Boilers
Odisha, Bhubaneswar 75

ANNEXURE - 5

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
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TEST REPORT

Name & Address of the Customer :
FERRO ALLOYS PLANT
(Tata Steel Mining)
Dist – Jajpur, Odisha - 755026

Report No. : BBS/415
Date : 10.01.2023
Sample No. : MSKGL/ED/2022-23/12/01005
Sample Description : Noise (Work Zone)

Noise Level Monitoring Data

<u>Sl. No</u>	<u>Sampling Date</u>	<u>Sampling Location</u>	<u>Results in Avg. dB(A)</u>
1.	27.12.2022	Main Gate Outside	64.2
2.	27.12.2022	Main Gate Inside	62.7
3.	27.12.2022	Weigh Bridge-1	65.6
4.	27.12.2022	Store Back Side	69.1
5.	27.12.2022	Workshop Entrance Road	67.8
6.	27.12.2022	Initiyard to Store yard	70.4
7.	27.12.2022	In front of Workshop	77.6
8.	27.12.2022	Furnace -5 Back Side	84.8
9.	27.12.2022	Furnace -4 Back Side	86.7
10.	27.12.2022	Furnace -3 Back Side	85.1
11.	27.12.2022	Furnace -2 Back Side	87.4
12.	27.12.2022	Furnace -1 Back Side	84.2
13.	27.12.2022	Furnace -1 First Floor	82.9
14.	27.12.2022	GCP -1	83.6
15.	27.12.2022	Inclined Con Wire (1&2)	79.4
16.	27.12.2022	ID Fan 3&4 Middle	71.8
17.	27.12.2022	RMHS	80.1
18.	27.12.2022	Day Bin Old Screen House Front	79.6
19.	27.12.2022	Day Bin New Screen House Front	78.5
20.	27.12.2022	Ground Upper (1&2) Near	76.2
21.	27.12.2022	Coal Yard	56.9
22.	27.12.2022	Chrome Yard	54.3
23.	27.12.2022	Sinter Plant Backside	74.8
24.	27.12.2022	In front of BQT Plant	75.1
25.	27.12.2022	Weigh Bridge-2	71.6
26.	27.12.2022	BQT Workshop	69.4
27.	27.12.2022	BQT Plant First Floor Backside	77.1
28.	27.12.2022	BQT Plant Second Floor Backside	72.9

Report No. : BBS/415

Date : 10.01.2023

29.	27.12.2022	BQT Plant First Floor Front Side	76.4
30.	27.12.2022	BQT Plant Second Floor Front Side	71.9
31.	27.12.2022	BQT Plant Third Floor	77.6
32.	27.12.2022	BQT Plant Fourth Floor	79.2
33.	27.12.2022	Near Molasses Tank	78.5
34.	27.12.2022	Under Inclined Belt	71.6
35.	27.12.2022	Initiyard BQT Middle	75.7
36.	27.12.2022	Inside Initiyard	74.2
37.	27.12.2022	Near Store Area	66.4
38.	27.12.2022	Furnace -5 Front Side	75.1
39.	27.12.2022	Furnace -4 Front Side	78.4
40.	27.12.2022	Furnace -3 Front Side	77.3
41.	27.12.2022	Furnace -2 Front Side	74.6
42.	27.12.2022	Furnace -1 Front Side	80.1
43.	27.12.2022	Project Office	70.4
44.	27.12.2022	Way to Petrol Pump	60.8
45.	27.12.2022	BQT Workshop	69.1

OSHA'S Permissible Noise Exposure Limits

<u>Noise Level</u>	<u>Exposure Limit</u>
90 dBA	8.0 hours

Report Prepared by:



For Mitra S.K. Private Limited



Authorized Signatory



ANNEXURE - 6

FORM NO. 31-A**HEALTH RECORD****(Pre-employment/Periodical)****(Prescribed under Rule 62-J)**

1. Name of the Factory :- TSML, FAP, Jeeipur
2. Name of the Employee :- Mansur Ansari
- Name of the Agency :- Well-Tech Env. Engg. (P) Ltd.
3. Employee Distinguishing Number :-
4. Age of the Employee :- 31 years
- Identification Mark :- Cut mark on left side beard
- Nature of Job :- Project (Mechanical)
5. Date of Employment :-
6. Length of Service In Year :-
7. General Survey :-
- Health :- Good/Fair/Poor
- Height :- 158 Cms.
- Weight :- 65 Kg.
8. Blood Group :- AB (tve)
9. Eye Vision :- Normal/Abnormal
- Use Glass :- Yes/No
10. Hearing :- Normal/Abnormal
11. Respiratory System & Chest Measurement
- Inspiration :- 90 cm
- Expiration :- 86 cm
- Respiration Rate/Min :- 17/min
- Remarks; If Any :- Nil
12. Cardiovascular System
- Pulse Rate :- 70/min
- B. P. :- 138/82 mm Hg
- Heart Sound :- Normal
- Remarks; If Any :- Nil

13. Abdomen tenderness :- Nil

14. Nervous system :- Good

History of fit :- Yes/No

Epilepsy :- Yes/No

Remark on mental health :- Good

15. Locomotor system :- Normal/Abnormal

16. Skin condition :- Normal/Abnormal

Remarks on any skin condition noticed :- NAD

17. Hernias :- Present/absent

18. Hydrocele :- Present/absent

19. Present complain, if any :-

20. Summary of findings :-

Heart disease :-

Hypertension :-

Diabetes :-

T. b. :-

Epilepsy :-

Poisoning :-

Others :-

Occupational disease, if any :-

} Nil

21. Recommendations, if any for any further investigation:-

medically fit

संयुक्त साहू

Signature of the Employee

[Signature]
05/05/2023

Signature of the Medical Officer

Dr Prayagjit Routray
Medical Officer
MBBS
Regd.No- 24338/2019