



To,
The Additional Principal Chief Conservator of Forest,
Regional Office (Eastern Central Zone)
Ministry of Environment, Forests and Climate Change, Govt. of India
Bungalow No. A-2, Shyamali Colony,
Ranchi – 834002, Jharkhand.

Ref No. - JMB/ENV/KOCP/24/ 464 /2020.

May 26, 2020

Ref.: Environmental Clearance letter no. - J-11015/252/2005-IA.II (M) dated June 22, 2006

SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued by MoEFCC, New Delhi to Kalimela Open Cast Project, Tata Steel Limited, Dhanbad for the period October'19 to March'20.

Dear Sir,

We are enclosing herewith compliance report for the period **October'19 to March'20** for the EC granted vide letter no.- J-11015/252/2005-IA.II(M), Dated-22nd June 2006 issued by Ministry of Environment, Forest and Climate Change, New Delhi.

Copy of the compliance report is also being sent in soft format through email at ro.ranchi-mef@gov.in for your kind perusal. We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,

Head (Planning)
Jharia Division, Tata Steel Ltd.

Encl: As above.

Copy to: Member Secretary, CPCB, Eastern Zonal Office, Southend Conclave, 502, 5th Floor
1582, Rajdanga Main Road, Kolkata -700107.

Copy to: Member Secretary, JSPCB, T.A. Division Building (Ground Floor), H.E.C, Dhurwa,
Ranchi - 834004.

Copy to: Regional Officer, JSPCB, HIG-1 Sardar Patel Nagar, Housing Colony, Hirapur,
Dhanbad

TATA STEEL LIMITED

Jharia Collieries Jamadoba 828 112 Dhanbad India

Tel 91 326 2320262/2320263/2320265/2320267 Fax 91 326 2320268

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

**HALF YEARLY COMPLIANCE REPORT
(PERIOD: OCTOBER'19 – MARCH'20)**

**OCP KALIMELA PROJECT
UNDER JAMADOBA COLLIERY**



TATA STEEL LIMITED, JHARIA DIVISION

**P.O.- JAMADOBA, DIST. - DHANBAD,
STATE- JHARKHAND, PIN CODE – 828112.**

**ENVIRONMENTAL CLEARANCE GRANTED VIDE LETTER NO. - J-11015/252/2005-IA.II(M)
DATED- 22ND JUNE 2006 ISSUED BY GOVT. OF INDIA, MINISTRY OF ENVIRONMENT &
FOREST, NEW DELHI.**

Compliance status of Environmental Clearance of Kalimela Open Cast Mining Project (0.34 MTPA) of M/s Tata Steel Ltd., Village Dungri, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/252/2005-IA.II (M) dated June 22, 2006

S. No.	Condition	Compliance Status
Specific Condition:		
(i)	All the conditions stipulated by SPCB in their NOC no N-35 dated 31.01.2005 are to be implemented effectively.	NOC conditions are being complied with. The open cast operations have ceased, and no raw coal production has been taking place since Nov'2014. Now backfilling of the mine void by the OB is going on which is expected to be completed by Mar'21. The status of the same will be regularly updated to MOEF office.
(ii)	The bund/embankment shall be designed taking into account highest flood level, based on past data, in the Damodar River/ Dungri Jore so as to guard against mine inundation.	The embankment exists along Dungri Jore. The HFL (Highest flood line) of Damodar river is way below the surface level of open cast mine hence bunds across the river is not necessary.
(iii)	Topsoil should be stacked properly with proper slope at earmarked sites and should not be kept active and shall be used for reclamation and development of green belt.	No further top soil will be generated as coal mining activity has been cease since Nov'14. After backfilling of mine void, top soil will be used for biological reclamation of backfilled and OB area.
(iv)	OB should be stacked at earmarked external OB dumpsite(s) within ML area and shall be a maximum height of 60m only and consist of benches of 10m each. The ultimate slope of the dump shall not exceed 28°. Backfilling shall begin at the end of 3rd year in the decoaled area. Monitoring and management of existing reclaimed dumpsites should continue until the vegetation becomes self-sustaining. Compliance Status should be submitted to the MOEF and its regional office at Bhubaneswar on yearly basis.	OB is stacked within ML area at an area of 12 ha approx. About 24.08 lakh cum of OB generated has been stacked with an approximate height reached of 50 mts. The other conditions are being followed as well. This OB is being used for backfilling the mine pit as part of our mine closure plan.
(v)	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak	Catch drain and siltation ponds have been constructed to arrest the debris, silt and sediment flows from OB dumps. Collected water had been used for watering mine area, roads & plantation. Total length of catch drains was 2200 mts. Garland drains (about 1790 mts) had been completely constructed around the mine site to ensure runoff water during rainy season is properly drained off. Since mine area has not

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	sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of slit material.	gone to expand, no additional garland drains are required as of now.
(vi)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data	Retention wall (or Toe wall) of about 2200 mts. exists around the dump area to check run-off and siltation.
(vii)	The effluents from the coal washery shall be treated to prescribed norms before discharge from the lease.	There is no separate coal washery for OCP Kalimela. We have a central coal washery for Jamadoba group of mines, about 1.5 kms away, which has a closed water circuit system to maintain zero discharge.
(viii)	Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	There is no separate CHP for OCP Kalimela. The existing CHP for Jamadoba group of mines already has adequate measures in place such as water sprinkling system (fixed and movable) and dry fog system.
(ix)	Drills should be wet operated.	It is not applicable now as mining has ceased.
(x)	Controlled blasting should be practiced only during daytime with use of delay detonators. The mitigative measures for control of ground vibration and to arrest the fly rocks and boulders should be implemented.	It is not applicable now as mining has ceased.
(xi)	Area brought under afforestation includes reclaimed external OB dump (12.89 ha), backfilled area (25.15 ha), along ML boundary, along roads (0.45 ha) and in undisturbed area (1.14 ha) within the lease area by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.	We are utilising the external OB to backfill the mine voids. The whole area including void and dump area is being reclaimed and plantation will be done after backfilling jobs are over.

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(xii)	A progressive closure plan shall be implemented by reclamation of quarry area of 25.15 ha which shall be backfilled and afforested by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha. The balance 1.10 ha of decoaled area shall be converted into a water reservoir, the upper benches of which shall be gently sloped and stabilized and reclaimed with plantation.	Around 1 Ha area was backfilled when the mine was in operation. The remaining area has also been taken up for backfilling and subsequent restoration to original land-use. The mine closure plan under mining plan of Jamadoba Colliery (including MCP of Kalimela) has been approved by MOC, Delhi. Copy of the approving letter is enclosed as Annexure.
(xiii)	Conservation Plan for endangered species, if any, found in and around the project area shall be formulated, if required, in consultation with the State Forest and Wildlife Departments.	Not Applicable.
(xiv)	The company shall obtain prior approval of CGWA/ CGWB Regional Office for use of groundwater if any, for mining operations.	Not applicable.
(xv)	Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board quarterly within one month of monitoring.	Now there will be no impact on ground water as mining has ceased. However, quality of groundwater is regularly analysed.
(xvi)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	Now there will be no impact on ground water as mining has ceased. However, quality of groundwater is regularly analysed.
(xvii)	ETP should also be provided for workshop, coal washery and CHP wastewater.	It is not applicable. Though ETP for Central Workshop has been commissioned having facility of Oil & Grease Trap.
(xviii)	R&R shall not be less than the norms laid down by the State Government and shall be completed within a specified time-frame.	It is not applicable.
(xix)	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the	It has been approved by MOC, Delhi. Copy of approval letter is enclosed as Annexure.

Compliance status of Environmental Clearance of Kalimela Open Cast Mining Project (0.34 MTPA) of M/s Tata Steel Ltd., Village Dungri, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/252/2005-IA.II (M) dated June 22, 2006

	Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval.	
(xx)	Consent to operate shall be obtained before starting mining operations.	Consent to operate has been obtained from JSPCB vide letter ref. No. JSPCB/HO/RNC/CTO-2512557/2018/1469 dated-18.09.2018 valid upto 30.09.2022.
General Conditions:		
(i)	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and forest.	All mining excavation activities are terminated since Nov' 14.
(i)	No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.	All mining excavation activities are terminated since Nov' 14.
(ii)	Four Ambient Air quality monitoring station should be established in the core zones as well as in the buffer zone SPM, RSPM, SO ₂ and NO _X monitoring location of the stations should be decided based on the metrological data & topographical features & environmentally & ecologically sensitive targets in consultation with SPCB.	The operations have now ceased. Though the ambient air quality is still being measured for the adjoining mines of Tata Steel and the reports sent in the EC compliance reports of those units.
(iii)	Fugitive dust emissions (SPM & RSPM) from all the sources should be controlled regularly monitored & data recorded properly. Water spraying arrangement on haul roads, wagon loading, and dump trucks (loading & unloading) points should be provided & properly maintained.	Presently no coal excavation and transportation jobs are going on. Backfilling of OB into mine void is going on. Water sprinkling on transport roads is being done regularly.
(iv)	Data on ambient air quality (SPM, RSPM, SO _x & NO _x) should be regularly submitted to the Ministry including its regional office at Bhubaneswar and to the SPCB & CPCB once in six months.	The ambient air monitoring is being done for the adjoining underground mines and their reports sent in those units' consent compliance reports.
(v)	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations of HEMM etc. All should be provided with Ear Plug/Muff.	It is not applicable now.
(vi)	Industrial waste water (Workshop and Waste water from the mine) should be properly collected, treated so as to conform to the	There is no generation of waste water.

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	standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharged. Oil and Grease trap should be installed before discharge of Work shop effluent.	
(vii)	Vehicular emissions should be kept under control and regularly monitored. Vehicle used for transporting the mineral should be covered with tarpaulins and optimally loaded.	No mineral is being transported now. The vehicles carrying OB are only allowed to ply after securing full compliance on vehicle check list. Check list ensures the optimum load, good condition, emissions under limit.
(vii)	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the SPCB.	We have a fully equipped Environment Cell Laboratory with qualified personnel. Laboratory has been recognized and registered with the Jharkhand State Pollution Control Board vide letter ref no. B-3922, dated-30.08.2012. The monitoring and analysis is also done at regular intervals by M/s Ecomen Laboratories Pvt Ltd., an NABL and MoEF recognised laboratory (vide its notification 03.01.2014).
(ix)	Personnel working in dusty area should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspect. Occupational Health Surveillance programme of the worker should be under taken periodically to observe any contraction due to exposure to dust and to take corrective measures if needed.	It is not applicable now.
(x)	A separate Environmental Management cell with suitable qualified personnel should be set up under the control of a senior executive, who will report directly to the Head of the Company.	We have a separate Environmental Management Cell with four qualified personnel (One Head and Two Senior Managers and One Manager). The reporting of Environmental Cell is directly to General Manager of the Division.
(xi)	Funds earmarked for environmental protection measures should be kept in separate A/C and should not be diverted for other purposes. Year wise expenditure should be reported to this ministry and its regional office at Bhubaneswar.	The mine was closed during this period.

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(xii)	The regional office of this ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities shall extend full co-operation to the officer of regional office by furnishing the requisite Data/ information/ monitoring report.	Being complied. All data is being furnished in the compliance report and during inspection.
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**Head Planning
Tata Steel Limited,
Jharia Division**

AIR QUALITY REPORT

Core zone & Buffer zone

Period- October'19 to December'19

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m ³	RSPM 24 Hourly Limit- 300 µg/m ³	SO ₂ 24 Hourly Limit- 120 µg/m ³	NOx 24 Hourly Limit- 120 µg/m ³		
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	21.10.19	Clear	175.6	78.2	14.6	14.2		
		04.11.19	Clear	177.2	84.7	14.9	12.8		
		23.12.19	Clear	177.6	75.8	15.2	14.8		
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100 µg/m ³	PM2.5 24 Hourly Limit- 60 µg/m ³	SO ₂ 24 Hourly Limit- 80 µg/m ³	NO ₂ 24 Hourly Limit- 80 µg/m ³		
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	14.10.19	Clear	84.6	42.3	8.2	10.9		
		18.11.19	Clear	83.7	42.3	8.2	10.9		
		17.12.19	Clear	81.3	41.8	9.6	10.2		
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	16.10.19	Clear	73.1	49.3	8.6	7.1		
		06.11.19	Clear	73.1	49.6	11.6	10.3		
		13.12.19	Clear	74.2	50.1	8.8	8.6		
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	23.10.19	Rainy	76.4	28.4	8.4	7.6		
		14.11.19	Clear	78.4	40.2	12.4	10.6		
		02.12.19	Clear	72.6	30.5	9.2	8.4		



Sr. Manager (Environment)

AIR QUALITY REPORT

Core zone & Buffer zone

Period- January'20 to March'20

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m ³	RSPM 24 Hourly Limit- 300 µg/m ³	SO ₂ 24 Hourly Limit- 120 µg/m ³	NO _x 24 Hourly Limit- 120 µg/m ³		
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	03.01.20	Clear	197.5	82.6	18.4	16.8		
		10.02.20	Clear	231.7	98.7	20.7	16.8		
		02.03.20	Clear	233.1	96.7	21.8	17.4		
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m ³	PM2.5 24 Hourly Limit- 60µg/m ³	SO ₂ 24 Hourly Limit- 80µg/m ³	NO ₂ 24 Hourly Limit- 80µg/m ³		
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	14.01.20	Clear	84.6	47.2	11.9	12.3		
		03.02.20	Clear	98.7	52.6	16.7	14.6		
		06.03.20	Clear	98.2	53.4	16.9	15.1		
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	13.01.20	Clear	82.9	50.7	12.4	10.8		
		13.02.20	Clear	101.3	56.7	16.2	15.7		
		19.03.20	Clear	97.3	58.4	16.5	15.3		
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	06.01.20	Clear	79.8	45.7	11.2	10.8		
		17.02.20	Clear	89.4	52.8	14.6	12.9		
		04.03.20	Clear	88.3	51.9	15.2	13.4		



Sr. Manager (Environment)

**Ground Water Quality Analysis (Hand Pump & Dugwell)
Post-Monsoon Season- November' 2019**

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S}/\text{m}$	Total Hardness (as CaCO_3), mg/l
1	22.11.19	Purnadih (Jorapokhar)	10:50AM	2.64	7.6	708	629
2	22.11.19	Bhowra 13 No	10:05AM	1.96	7.4	629	601
3	14.11.19	Mohalbani Basti	12:45PM	2.16	7.3	701	599
4	14.11.19	Digwadih 12 No	12:30PM	2.08	7.4	598	511
5	14.11.19	Digwadih 10 No F & J	12:15PM	2.41	7.3	1334	718
6	14.11.19	Kalimela Shivmandir	10:00AM	1.12	7.5	786	593
7	14.11.19	Kalimela Kalimandir	09:35AM	2.02	7.4	774	537
8	14.11.19	Lower Dungari	10:20AM	2.32	7.4	511	516
9	14.11.19	Upper Dungari	10:45AM	1.84	7.3	654	497
10	14.11.19	Pattia Basti	11:00AM	1.96	7.2	609	442
11	14.11.19	Kenduadih Basti	11:30AM	1.87	7.4	688	549
12	22.11.19	Jorapokhar Kushtand	11:05AM	2.42	7.1	743	467
13	14.11.19	Jamadoba 3 No	01:10PM	2.10	7.4	651	449
14	14.11.19	6&7 Pits (Ayodhya Nagri)	12:00PM	1.72	7.5	645	485

Sr. Manager (Environment)

Ground Water Quality Analysis (Hand Pump & Dugwell)
Winter Season- January' 2020

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S/m}$	Total Hardness (as CaCO_3), mg/l
1	29.01.20	Purnadih (Jorapokhar)	09:55AM	5.12	7.6	714	612
2	29.01.20	Bhowra 13 No	10:15AM	2.10	7.5	632	587
3	29.01.20	Mohalbani Basti	10:35AM	2.84	7.3	712	645
4	29.01.20	Digwadih 12 No	10:50AM	3.16	7.3	598	524
5	29.01.20	Digwadih 10 No F & J	11:15AM	2.85	7.4	1228	728
6	29.01.20	Kalimela Shivmandir	01:30PM	1.48	7.2	802	612
7	29.01.20	Kalimela Kalimandir	01:45PM	2.16	7.5	786	574
8	29.01.20	Lower Dungari	01:10PM	4.86	7.5	572	502
9	29.01.20	Upper Dungari	12:55PM	2.48	7.3	664	506
10	29.01.20	Pattia Basti	12:40PM	2.64	7.2	612	478
11	29.01.20	Kenduadih Basti	12:15PM	2.10	7.3	703	562
12	29.01.20	Jorapokhar Kushtand	09:20AM	3.82	7.4	668	488
13	29.01.20	Jamadoba 3 No	11:50AM	3.16	7.3	656	462
14	29.01.20	6&7 Pits (Ayodhya Nagri)	11:30AM	2.52	7.3	792	492


Sr. Manager (Environment)

ECOMEN LABORATORIES PVT. LTD.

Flat No. 8, 2nd Floor, Arif Chamber-V, Sector H, Aliganj, Lucknow - 226 024

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E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1Z1

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-1/03/20

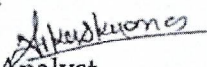
TEST REPORT ISSUE DATE: 30.03.2020


TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
Address of the Customer : Jamadoba, Distt. Dhanbad
Jharkhand
Date of Sampling : 02.03.2020
Sample Collected By : Mr. Aman Dixit
Sampling Method : IS: 5182
Instrument Used : RDS & FDS
Location : Central Work Shop Area, Jamadoba

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	39.04	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	78.20	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	16.30	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	24.60	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	14.20	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	18.80	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	1.28	0.2-500	04
8.	Pb(µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item. **Note:** Below Detection Limit


Analyst


Authorized Signatory
Ecomen Laboratories Pvt. Ltd
Flat No. 8, 2nd Floor, Arif Chamber-V
Sector H, Aliganj, Lucknow-226024
Ph: (91-522) 2746282, 2745726


Quality Manager

ECOMEN LABORATORIES PVT. LTD.

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)



FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-2/03/20

TEST REPORT ISSUE DATE: 30.03.2020

TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Distt. Dhanbad
 Jharkhand
 Date of Sampling : 03.03.2020
 Sample Collected By : Mr. Aman Dixit
 Sampling Method : IS: 5182
 Instrument Used : RDS & FDS
 Location : Officers Colony, 12 No. Digwadih

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	35.70	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	80.20	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	13.40	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	22.90	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	14.30	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	19.10	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	0.78	0.2-500	04
8.	Pb (µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item. **Note:** Below Detection Limit

Ashish Kumar
Analyst

Aman Dixit
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Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-3/03/20

TEST REPORT ISSUE DATE: 30.03.2020

TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Distt. Dhanbad
 Jharkhand
 Date of Sampling : 06.03.2020
 Sample Collected By : Mr. Aman Dixit
 Sampling Method : IS: 5182
 Instrument Used : RDS & FDS
 Location : General Manager's Office Area

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	36.25	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	74.30	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	15.40	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	27.20	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	11.90	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	20.40	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	0.89	0.2-500	04
8.	Pb(µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item. **Note:** Below Detection Limit

(Signature)
Analyst

(Signature)
Authorized Signatory,
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Sector H, Aliganj, Lucknow-226024
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(Signature)
Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

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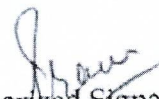
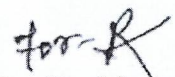
FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-4/03/20
TEST REPORT ISSUE DATE: 30.03.2020**TEST REPORT OF AMBIENT AIR***

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
Address of the Customer : Jamadoba, Distt. Dhanbad
Jharkhand
Date of Sampling : 03.03.2020
Sample Collected By : Mr. Aman Dixit
Sampling Method : IS: 5182
Instrument Used : RDS & FDS
Location : Jamadoba Colliery

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	35.80	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	77.40	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	12.75	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	14.35	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	30.60	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	21.30	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	1.02	0.2-500	04
8.	Pb (µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item. Note: Below Detection Limit


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Authorized Signatory
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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AN/03/20
TEST REPORT ISSUE DATE: 30.03.2020**TEST REPORT OF AMBIENT NOISE LEVEL**

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
Address of the Customer : Jamadoba, Distt. Dhanbad
Jharkhand
Sample Collected By : Mr. Aman Dixit
Instrument Used : Noise Meter (HTC)

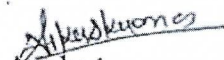
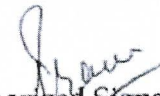
Sl. No.	Locations	Date of Monitoring	Day Time			Night Time		
			Max.	Min.	Leq.	Max.	Min.	Leq.
1.	Central Work Shop Area Jamadoba	03.03.2020	64.3	52.8	56.3	56.8	46.5	51.5
2.	Officer's Colony, 12 No. Digwadih	03.03.2020	55.5	48.2	49.9	42.6	40.5	41.8
3.	General Manager's Office Area	03.03.2020	49.8	45.5	48.6	43.5	37.7	39.6
4.	Jamadoba Colliery	03.03.2020	66.5	50.8	64.7	62.8	45.8	50.7

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, Educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned Categories by the competent authority and the corresponding standard shall apply.

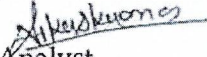
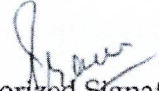
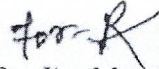

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LABORATORIES PVT LTD**An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)**FORMAT NO. ECO/QS/FORMAT/10 TEST REPORT NO: ECO LAB/MCPM/03/20
TEST REPORT ISSUE DATE: 30.03.2020**MINERALOGICAL COMPOSITION OF PARTICULATE MATTER**Name of the Customer : M/s Tata Steel Ltd. (Jamadoba Group)
Address of the Customer : Jamadoba,
Distt. Dhanbad - 828 112
Month : March, 2020

S.NO.	Locations	Date of Sampling	Mineralogical Composition (in %)			
			Silica (SiO ₂)	Ferrous oxide (FeO)	Alumina (Al ₂ O ₃)	Calcium Oxide CaO
1	General Manager's Office Area	02.03.2020	1.62	0.08	1.35	2.95
2	Jamadoba Colliery	02.03.2020	2.80	0.16	1.35	2.92


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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-1/11/19
TEST REPORT ISSUE DATE: 30.11.2019**TEST REPORT OF AMBIENT AIR***

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
Address of the Customer : Jamadoba, Distt. Dhanbad
Jharkhand
Date of Sampling : 11.11.2019
Sample Collected By : Mr. Aman Dixit
Sampling Method : IS: 5182
Instrument Used : RDS & FDS
Location : Central Work Shop Arca, Jamadoba

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	35.20	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	73.20	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	11.30	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	14.60	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	14.20	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	11.30	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	1.40	0.2-500	04
8.	Pb(µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item.

Note: Below Detection Limit

Aman Dixit
Analyst

Ravi Bhargava
Authorized Signatory

Ravi Bhargava
Quality Manager

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FORMAT NO. ECO/QS/FORMAT/10 TEST REPORT NO: ECO LAB/AAQ-2/11/19
 TEST REPORT ISSUE DATE: 30.11.2019


TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Dist. Dhanbad
 Jharkhand
 Date of Sampling : 06.11.2019
 Sample Collected By : Mr. Aman Dixit
 Sampling Method : IS: 5182
 Instrument Used : RDS & FDS
 Location : Officers Colony, 12 No. Digwadih

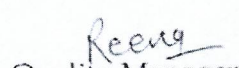
Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	31.70	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	64.20	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	11.60	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	14.90	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	14.30	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	15.60	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	0.78	0.2-500	04
8.	Pb(µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item.

Note: Below Detection Limit


 Analyst


 Authorized Signatory


 Quality Manager

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-3/11/19

TEST REPORT ISSUE DATE: 30.11.2019

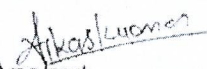
TEST REPORT OF AMBIENT AIR*


Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Distt. Dhanbad
 Jharkhand
 Date of Sampling : 07.11.2019
 Sample Collected By : Mr. Aman Dixit
 Sampling Method : IS: 5182
 Instrument Used : RDS & FDS
 Location : General Manager's Office Area


Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	35.25	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	72.30	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	10.50	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	13.20	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	11.90	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	20.40	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	0.89	0.2-500	04
8.	Pb (µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item.

Note: Below Detection Limit


 Analyst


 Authorized Signatory


 Quality Manager

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-2/11/19
TEST REPORT ISSUE DATE: 30.11.2019

TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
Address of the Customer : Jamadoba, Distt. Dhanbad
Jharkhand
Date of Sampling : 06.11.2019
Sample Collected By : Mr. Aman Dixit
Sampling Method : IS: 5182
Instrument Used : RDS & FDS
Location : Officers Colony, 12 No. Digwadih

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	31.70	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	64.20	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	11.60	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	14.90	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	14.30	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	15.60	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	0.78	0.2-500	04
8.	Pb (µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item.

Note: Below Detection Limit

Analyst

Authorized Signatory

Quality Manager

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LABORATORIES PVT. LTD.

FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ-4/11/19

TEST REPORT ISSUE DATE: 30.11.2019

TEST REPORT OF AMBIENT AIR*

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Distt. Dhanbad
 Jharkhand
 Date of Sampling : 08.11.2019
 Sample Collected By : Mr. Aman Dixit
 Sampling Method : IS: 5182
 Instrument Used : RDS & FDS
 Location : Jamadoba Colliery

Sl. No.	Tests Conducted	Method	Results	Detection Range	NAAQ Standards as per CPCB, New Delhi, Nov. 18 th , 2009
1.	PM _{2.5} (µg/m ³)	SOP NO. A -15, Issue No.1 date 26.07.2016 (Gravimetric Method)	32.80	12.5-1000	60
2.	PM ₁₀ (µg/m ³)	IS:5182 (Part-23)	70.30	12.5-1000	100
3.	SO ₂ (µg/m ³)	IS:5182 (Part-2)	12.75	9-200	80
4.	NO ₂ (µg/m ³)	IS:5182 (Part-6)	14.35	6-200	80
5.	NH ₃ (µg/m ³)	SOP NO. A -26, Issue No.1 date 26.07.2016 (Indophenol Method)	16.60	2-700	400
6.	O ₃ (µg/m ³)	IS:5182(Part-9)	21.30	2-200	180
7.	CO (mg/m ³)	IS:5182 (Part-10)	1.02	0.2-500	04
8.	Pb(µg/m ³)	IS:5182(Part-22)	BDL	1-100	1.0
9.	Cr (µg/m ³)	SOP NO. A -23, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
10.	Cd (µg/m ³)	SOP NO. A -24, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	-
11.	As (ng/m ³)	SOP NO. A -22, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	06
12.	Ni (ng/m ³)	SOP NO. A -21, Issue No.1 date 26.07.2016 (CPCB-NAAQM Guideline)	BDL	1-100	20

*The results is related only to tested item.

Note: Below Detection Limit

Analyst

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AN/11/19

TEST REPORT ISSUE DATE: 30.11.2019

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Customer : Tata Steel Colliery (Jamadoba Group)
 Address of the Customer : Jamadoba, Distt. Dhanbad
 Jharkhand
 Sample Collected By : Mr. Aman Dixit
 Instrument Used : Noise Meter (HTC)

Sl. No.	Locations	Date of Monitoring	Day Time			Night Time		
			Max.	Min.	Leq.	Max.	Min.	Leq.
1.	Central Work Shop Area Jamadoba	11.11.2019	64.3	52.8	56.3	56.8	46.5	51.5
2.	Officer's Colony, 12 No. Digwadih	11.11.2019	55.5	48.2	49.9	42.6	40.5	41.8
3.	General Manager's Office Area	11.11.2019	49.8	45.5	48.6	43.5	37.7	39.6
4.	Jamadoba Colliery	11.11.2019	66.5	50.8	64.7	62.8	45.8	50.7

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, Educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned Categories by the competent authority and the corresponding standard shall apply.

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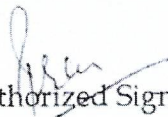
FORMAT NO. ECO/QS/FORMAT/10 TEST REPORT NO: ECO LAB/MCPM/11/19
TEST REPORT ISSUE DATE: 30.11.2019

MINERALOGICAL COMPOSITION OF PARTICULATE MATTER

Name of the Customer : M/s Tata Steel Ltd. (Jamadoba Group)
Address of the Customer : Jamadoba,
Distt. Dhanbad - 828 112
Month : November, 2019

S.NO.	Locations	Date of Sampling	Mineralogical Composition (in %)			
			Silica (SiO ₂)	Ferrous oxide (FeO)	Alumina (Al ₂ O ₃)	Calcium Oxide CaO
1	Officers Colony, 12 No. Digwadit	06.11.2019	1.62	0.08	1.35	2.95
2	Central Work Shop Area, Jamadoba	11.11.2019	2.80	0.16	1.35	2.92


Analyst


Authorized Signatory


Quality Manager