



स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
दुर्गापुर स्टील प्लांट
DURGAPUR STEEL PLANT

No. ECD.02.18/402

Dt. : 21-11-2020

To
The Joint Director(S)
Ministry of Environment, Forest & Climate Change
Eastern Regional Office
A/3, Chandrasekharpur,
Bhubaneswar-751023

Sub : : Installation of Bloom Caster and Coal Dust Injection (CDI) system in Blast
Furnace No. 3 and 4 at Durgapur Steel Plant, Durgapur, West Bengal by M/s SAIL

Ref : EC No. J- 11013/396/2005-IA II (I), dated 29th March, 2007

Dear Sir,

Please find enclosed half yearly compliance status report for the period April to Sept'2020 in regard to the EC for Installation of Bloom Caster and Coal Dust Injection (CDI) system in Durgapur Steel Plant.

Please find the following enclosed documents :-

1. Compliance Report
2. Stack Emission Report
3. Ambient Air Quality Report
4. Ambient Noise Report

With regards


(Ajok Majumdar)

General Manager
Environment Control Deptt
Durgapur Steel Plant
Durgapur-713203
ecddsp@gmail.com
gme.cd.dsp@sail.in

**Steel Authority of India Limited
Durgapur Steel Plant
Environment Control Department**

1. Name of the Project : Installation of Bloom Caster and Coal Dust Injection (CDI) system in Blast Furnace No. 3 and 4 at Durgapur Steel Plant, Durgapur , West Bengal by M/s SAIL
2. Clearance Letter no. with date : J- 11013/396/2005-IA II (I), dated 29th March, 2007
3. Period of Compliance Report : 01.04.2020 to 30.09.2020

I. Specific Conditions :

S.N.	Conditions	Compliance Status															
1	The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the State Pollution Control Board. At no time, particulate emissions from the unit shall exceed 100mg/Nm ³ and all the necessary air pollution control system shall be installed. Continuous on-line monitors for particulate emissions shall be installed in stacks. Interlocking facilities shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit(s) is shut down automatically.	<p>The particulate matter emission is well below 100 mg/ Nm³ in Ladle furnace and CDI and monthly monitoring reports are regularly being sent to CPCB & WBPCB.</p> <p>Stack emission report monitored by NABL accredited third party (M/s. R. V. Briggs & Co. Private Ltd.) :-</p> <p style="text-align: right;">Unit: mg/Nm³</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Stack Location</th> <th>PM</th> <th>SO₂</th> <th>NO_x</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Coal Dust Injection (CDI)</td> <td>41</td> <td>43</td> <td>32</td> </tr> <tr> <td>2.</td> <td>Ladle Furnace</td> <td>27</td> <td>19</td> <td>15</td> </tr> </tbody> </table> <p>Copy of the reports enclosed</p> <p>Online Continuous Emission Monitoring System (OCEMS) installed at Ladle furnace and CDI stacks.</p>	Sl. No.	Stack Location	PM	SO ₂	NO _x	1.	Coal Dust Injection (CDI)	41	43	32	2.	Ladle Furnace	27	19	15
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2	The company shall install adequate dust collection and extraction system at appropriate places to control fugitive dust emissions. Bag filters shall be provided to grinding mill. Gas	Dust collection and extraction systems (bag filters) have been installed at Coal Dust Injection and Ladle furnace. Dust from bag filters are being recycled through Sinter Plant. Stack emissions are well below 100 mg/Nm ³ and copies of monitoring reports by NABL accredited third party are enclosed.															

	cleaning plant (GCP) dust from Ladle furnace in Sinter plant shall be recycled. GCP/ Fume extraction system shall be installed in Ladle furnace. Dust emissions from LF stack shall be maintained within 100 mg/Nm ³ .																																																																																																													
3	Ambient air quality monitoring stations shall be set up as per statutory requirement in consultation with the WBPCB. Ambient air quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities. Monitoring of ambient air quality and shall be carried out regularly in consultation with WBPCB and data submitted to the CPCB and WBPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated time to time.	<p>Ambient Air quality is regularly monitored in six locations. In addition a Continuous AAQ monitoring station has been working since 2011. Location and specifications have been finalized in consultation with WBPCB.</p> <p>Presently monitoring of ambient air quality is being done through NABL accredited M/s R V Briggs & Co. Private Ltd, and the data are regularly submitted to CPCB & WBPCB.</p> <p>AAQ report monitored by third party (M/s R V Briggs & Co. Private Ltd):</p> <table border="1" data-bbox="842 630 1841 1289"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Parameter</th> <th rowspan="2">Unit</th> <th colspan="4">Location</th> <th rowspan="2">Project Bldg</th> </tr> <tr> <th>Top of ECD Office</th> <th>ED(W) building</th> <th>R & C Lab</th> <th>Near DSTV Center</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PM₁₀</td> <td>µg/m³</td> <td>67</td> <td>65</td> <td>63</td> <td>53</td> <td>60</td> </tr> <tr> <td>2</td> <td>PM_{2.5}</td> <td>µg/m³</td> <td>44</td> <td>41</td> <td>28</td> <td>15</td> <td>35</td> </tr> <tr> <td>3</td> <td>SO₂</td> <td>µg/m³</td> <td>13</td> <td>14</td> <td>10</td> <td>8</td> <td>11</td> </tr> <tr> <td>4</td> <td>NO₂</td> <td>µg/m³</td> <td>37</td> <td>31</td> <td>33</td> <td>23</td> <td>28</td> </tr> <tr> <td>5</td> <td>Pb</td> <td>µg/m³</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> <td><0.1</td> </tr> <tr> <td>6</td> <td>Benzene</td> <td>µg/m³</td> <td><1.0</td> <td><1.0</td> <td><1.0</td> <td><1.0</td> <td><1.0</td> </tr> <tr> <td>7</td> <td>NH₃</td> <td>µg/m³</td> <td>19</td> <td>15</td> <td>17.1</td> <td>8</td> <td>17</td> </tr> <tr> <td>8</td> <td>CO</td> <td>mg/m³</td> <td>0.85</td> <td>0.83</td> <td>0.78</td> <td>0.38</td> <td>0.77</td> </tr> <tr> <td>9</td> <td>Ozone (O₃)</td> <td>µg/m³</td> <td>15</td> <td>19</td> <td>13</td> <td>10</td> <td>18</td> </tr> <tr> <td>10</td> <td>Benzo(a) Pyrene</td> <td>ng/m³</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> </tr> <tr> <td>11</td> <td>As</td> <td>ng/m³</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> <td><0.25</td> </tr> <tr> <td>12</td> <td>Ni</td> <td>ng/m³</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> <td><5.0</td> </tr> </tbody> </table> <p>Copies of the report enclosed.</p> <p>Ambient noise level is monitored using calibrated instrument and the results are well within the prescribed norms. Reports are regularly submitted to CPCB & WBPCB.</p>	Sl. No.	Parameter	Unit	Location				Project Bldg	Top of ECD Office	ED(W) building	R & C Lab	Near DSTV Center	1	PM ₁₀	µg/m ³	67	65	63	53	60	2	PM _{2.5}	µg/m ³	44	41	28	15	35	3	SO ₂	µg/m ³	13	14	10	8	11	4	NO ₂	µg/m ³	37	31	33	23	28	5	Pb	µg/m ³	<0.1	<0.1	<0.1	<0.1	<0.1	6	Benzene	µg/m ³	<1.0	<1.0	<1.0	<1.0	<1.0	7	NH ₃	µg/m ³	19	15	17.1	8	17	8	CO	mg/m ³	0.85	0.83	0.78	0.38	0.77	9	Ozone (O ₃)	µg/m ³	15	19	13	10	18	10	Benzo(a) Pyrene	ng/m ³	<0.5	<0.5	<0.5	<0.5	<0.5	11	As	ng/m ³	<0.25	<0.25	<0.25	<0.25	<0.25	12	Ni	ng/m ³	<5.0	<5.0	<5.0	<5.0	<5.0
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4	<p>Consumption of cooling water shall be reduced due to phasing out of blooming mill. Recycle and reuse of secondary cooler water through re-circulation shall be ensured. Effort shall be made to adopt 'Zero' discharge except during occasional blowdown.</p>	<p>Due to phasing out of Blooming & Billet Mill and continuous water conservation measures, cooling water consumption in the plant has been reduced considerably during last three years :-</p> <p>Quantity of cooling water being used annually during last 3 years:</p> <table border="1" data-bbox="1058 386 1593 599"> <thead> <tr> <th colspan="3">Cooling Water Consumption (m³)</th> </tr> <tr> <th>2017-18</th> <th>2018-19</th> <th>2019-20</th> </tr> </thead> <tbody> <tr> <td>12,153,710</td> <td>11,073,480</td> <td>10,544,297</td> </tr> </tbody> </table> <p>Cooling water consumption has been reduced by 1.6 million m³ /year in 2019-20 compared to that of 2017-18.</p> <p>Moreover, to achieve ZLD phase wise, action has already been taken to implement 4 schemes in Phase-I. TS for the Phase-II schemes is being prepared by our consultant M/s CET.</p>	Cooling Water Consumption (m ³)			2017-18	2018-19	2019-20	12,153,710	11,073,480	10,544,297
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5	<p>Recycling of scale and scrap in Sinter plant shall be ensured. No solid waste shall be disposed off outside the premises.</p>	<p>Mills scale is used in Sinter making in Sinter plant. Scrap is being salvaged through magnetic collector and continuously charged in Blast Furnace & Steel Melting Shop.</p> <p>Type and quantities of Solid waste generated and mode of their utilization during Apr-Sept'2020 :</p> <table border="1" data-bbox="852 386 1801 1114"> <thead> <tr> <th>S. N.</th> <th>Product</th> <th>Generation (T)</th> <th>% Utilisation</th> <th>Mode of Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BF Slag</td> <td>339976</td> <td>100%</td> <td>Sold to cement manufacturers</td> </tr> <tr> <td>2</td> <td>BF Flue Dust</td> <td>4775</td> <td>100%</td> <td>Sold</td> </tr> <tr> <td>3</td> <td>BF Sludge</td> <td>4036</td> <td>123%</td> <td>Dried & mixed with BOF sludge for use in Sinter making</td> </tr> <tr> <td>4</td> <td>BOF Slag</td> <td>127629</td> <td>74.5%</td> <td>Used as flux for iron making, sinter making and used for rail ballast and road making</td> </tr> <tr> <td>5</td> <td>BOF Sludge</td> <td>15240</td> <td>136%</td> <td>Used in sinter plant</td> </tr> <tr> <td>6</td> <td>Mill Scale</td> <td>28348</td> <td>100%</td> <td>Used in sinter plant</td> </tr> <tr> <td>7</td> <td>Lime Fines</td> <td>14601</td> <td>100%</td> <td>Used in sinter plant</td> </tr> <tr> <td>8</td> <td>Waste refractory</td> <td>3317</td> <td>100%</td> <td>Sold to refractory manufacturers</td> </tr> <tr> <td>9</td> <td>Cinder</td> <td>6759</td> <td>85%</td> <td>Sold</td> </tr> </tbody> </table>	S. N.	Product	Generation (T)	% Utilisation	Mode of Disposal	1	BF Slag	339976	100%	Sold to cement manufacturers	2	BF Flue Dust	4775	100%	Sold	3	BF Sludge	4036	123%	Dried & mixed with BOF sludge for use in Sinter making	4	BOF Slag	127629	74.5%	Used as flux for iron making, sinter making and used for rail ballast and road making	5	BOF Sludge	15240	136%	Used in sinter plant	6	Mill Scale	28348	100%	Used in sinter plant	7	Lime Fines	14601	100%	Used in sinter plant	8	Waste refractory	3317	100%	Sold to refractory manufacturers	9	Cinder	6759	85%	Sold
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6	<p>All the recommendations mentioned in the Corporate Responsibility for Environmental Protection (CREP) of CPCB shall be implemented.</p>	<p>Compliance to CREP guidelines given at Annexure- I</p>																																																		
7	<p>Rainwater harvesting measures shall be adopted. The company shall harvest the rainwater from the roof tops and storm water drains to recharge the ground water and use</p>	<p>As per the guidelines issued by West Bengal Pollution Control Board to Durgapur Steel Plant :- “ Water bodies must be developed for storing of rainwater and recharging of groundwater is not permitted”.</p>																																																		

	the same water for the various activities of the project to conserve fresh water.	<p>DSP has build up different water bodies/ponds in steel township & surrounding villages under CSR project besides DSP's main water reservoir at Waria.</p> <p>Surface Area wise details are given below :-</p> <p>Main Water Reservoir : 8,50,000 m² MKM Park Lake : 2,80,000 m² Waterbody at Vasundhara : 25,000 m² Pond at Dampara : 728 m² Pond at Akandara : 1,200 m² Check-Dam at Baganpara : 3,472 m² Pond at B-Zone Park : 8,190 m²</p>															
8	Necessary other statutory clearances from other concerned Departments including 'No Objection Certificate' from the WBPCB shall be obtained.	'No Objection Certificate' from the WBPCB obtained. All other statutory clearances from concerned departments are being renewed regularly.															
9	Pollution load due to expansion / modernization of the project after installation of Bloom caster and Coal Dust Injection (CDI) system in Blast Furnace no. 3 & 4 shall be assessed and a report shall be submitted to the Ministry and its Regional Office at Bhuvaneshwar/ CPCB/ SPCB.	<p>Pollution load after installation of Bloom caster & Coal Dust Injection (CDI) system and due to other pollution control measures has shown a reducing trend over the last four years. The particulate emission load and effluent load of DSP for the last four years are given below :-</p> <table border="1" data-bbox="842 878 1944 1166"> <thead> <tr> <th></th> <th>2016-17</th> <th>2017-18</th> <th>2018-19</th> <th>2019-20</th> </tr> </thead> <tbody> <tr> <td>Particulate Emission Load (Kg/TCS)</td> <td>0.6918</td> <td>0.6906</td> <td>0.6831</td> <td>0.6814</td> </tr> <tr> <td>Effluent Load (Kg/TCS)</td> <td>0.0838</td> <td>0.0812</td> <td>0.0785</td> <td>0.0775</td> </tr> </tbody> </table>		2016-17	2017-18	2018-19	2019-20	Particulate Emission Load (Kg/TCS)	0.6918	0.6906	0.6831	0.6814	Effluent Load (Kg/TCS)	0.0838	0.0812	0.0785	0.0775
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10	The company shall undertake eco-development measures including community welfare measures in the project area.	<p>Extensive effort has been given for eco-development through afforestation. The details have been given in the prescribed format attached as Annexure -II.</p> <p>DSP is having laid down policy under Corporate Social Responsibility and actions are being taken as per the policy. Detailed activities/projects undertaken are given in Annexure-III.</p> <p>Around Rs. 204.5 Lakhs has been spent for CSR projects during the year 2019-20.</p>															

II. General Conditions :

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1	The project authority shall adhere to the stipulations made by West Bengal Pollution Control Board (WBPCB) and State Government.	All the stipulations given by West Bengal Pollution Control Board are being strictly adhered to.																											
2	No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.	This will be adhered to.																											
3	The overall noise levels in and around 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 shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	<p>Necessary measures have been taken to control noise level within the standards (85 dBA) in and around plant. In various units, noise levels are regularly being monitored and monthly reports are being submitted to CPCB & WBPCB.</p> <p>Noise level monitoring report:</p> <p style="text-align: center;">Work Zone Noise</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Location</th> <th>Noise Level Leq (dB(A))</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Oxygen plant</td> <td>76.2</td> </tr> <tr> <td>2</td> <td>Blast Furnace</td> <td>81.1</td> </tr> <tr> <td>3</td> <td>Turbines (OPP)</td> <td>80.4</td> </tr> <tr> <td>4</td> <td>OPP (other areas)</td> <td>75.7</td> </tr> <tr> <td>5</td> <td>Mills (Rolling / forgoing)</td> <td>77.3</td> </tr> <tr> <td>6</td> <td>SMS</td> <td>70.8</td> </tr> <tr> <td>7</td> <td>SP</td> <td>73.1</td> </tr> <tr> <td>8</td> <td>Coke-oven area</td> <td>71.7</td> </tr> </tbody> </table>	Sl. No.	Location	Noise Level Leq (dB(A))	1	Oxygen plant	76.2	2	Blast Furnace	81.1	3	Turbines (OPP)	80.4	4	OPP (other areas)	75.7	5	Mills (Rolling / forgoing)	77.3	6	SMS	70.8	7	SP	73.1	8	Coke-oven area	71.7
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4	<p>Proper house keeping and adequate occupational health programmes shall be taken up.</p>	<p>For better house-keeping, lots of jobs like road widening, fencing and garden development, tree plantation, regular cleaning and sweeping of roads, repair and painting of building and structures etc. are being done regularly.</p> <p>DSP has separate Occupational Health department solely responsible to carry out occupational health programmes. DSP is also certified to OHSAS 18000 and best practices being followed for occupational health and safety.</p> <p>Occupational health surveillance report for the period Apr-Sept'2020:-</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>No. of Persons</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>OHS Emergency</td> <td>5747</td> </tr> <tr> <td>2.</td> <td>Periodic Medical Examination</td> <td>00*</td> </tr> <tr> <td>3.</td> <td>Vision Testing</td> <td>00*</td> </tr> <tr> <td>4.</td> <td>Biochemistry</td> <td>00*</td> </tr> <tr> <td>5.</td> <td>Pathological Test</td> <td>00*</td> </tr> <tr> <td>6.</td> <td>Pulmonary Function Test</td> <td>00*</td> </tr> <tr> <td>7.</td> <td>Audio Test</td> <td>00*</td> </tr> <tr> <td>8.</td> <td>ECG</td> <td>00*</td> </tr> <tr> <td>9.</td> <td>X-Ray</td> <td>00*</td> </tr> <tr> <td>10.</td> <td>Hygiene Survey</td> <td>00*</td> </tr> <tr> <td>11.</td> <td>Hygiene Locations</td> <td>00*</td> </tr> <tr> <td>12.</td> <td>Training</td> <td>28</td> </tr> </tbody> </table> <p>* Due to Covid-19 pandemic routine non- emergency services have been suspended till situation improves.</p>	Sl. No.	Parameter	No. of Persons	1.	OHS Emergency	5747	2.	Periodic Medical Examination	00*	3.	Vision Testing	00*	4.	Biochemistry	00*	5.	Pathological Test	00*	6.	Pulmonary Function Test	00*	7.	Audio Test	00*	8.	ECG	00*	9.	X-Ray	00*	10.	Hygiene Survey	00*	11.	Hygiene Locations	00*	12.	Training	28
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5	A separate environmental management cell to carry out various management and monitoring functions shall be setup under the control of Senior Executive.	<p>A full fledged Environment Control Department exists with five executives, headed by General Manager(Environment). The Air and Water laboratory is manned by 4 experienced senior analysts.</p> <p>Names of Officers of Environment Control Deptt. as per hierarchy:</p> <table border="1" data-bbox="926 354 1902 799"> <thead> <tr> <th>Sl. No.</th> <th>Name</th> <th>Designation</th> <th>Contact Details (e-mail id & mobile no.)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Asok Majumdar</td> <td>General Manager</td> <td>asokdsp@sail.in, 9434791325</td> </tr> <tr> <td>2.</td> <td>Santanu Dey</td> <td>General Manager</td> <td>santanudey@sail.in, 9434792471</td> </tr> <tr> <td>3.</td> <td>Sukumar Sarkar</td> <td>Dy General Manager</td> <td>dspecdss@sail.in, 9434791926</td> </tr> <tr> <td>4.</td> <td>Sujata Roy Sarkar</td> <td>Asstt General Manager</td> <td>srs.sail@sail.in, 9434791920</td> </tr> <tr> <td>5.</td> <td>Rubi Chakraborty</td> <td>Manager</td> <td>r.maji@sail.in, 9434791498</td> </tr> </tbody> </table>	Sl. No.	Name	Designation	Contact Details (e-mail id & mobile no.)	1.	Asok Majumdar	General Manager	asokdsp@sail.in, 9434791325	2.	Santanu Dey	General Manager	santanudey@sail.in, 9434792471	3.	Sukumar Sarkar	Dy General Manager	dspecdss@sail.in, 9434791926	4.	Sujata Roy Sarkar	Asstt General Manager	srs.sail@sail.in, 9434791920	5.	Rubi Chakraborty	Manager	r.maji@sail.in, 9434791498
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6	Rs. 4.05 Crores earmarked towards environmental pollution control measures shall be judiciously used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	<p>The full amount has been spent towards pollution control measures for Bloom Caster, Ladle Furnace and CDI units.</p> <p>Total amount spent on various environment protection measures throughout the plant during last 3 years is as follows:</p> <p style="text-align: right;">(Figs. In Rs. Crores)</p> <table border="1" data-bbox="1058 1105 1873 1179"> <thead> <tr> <th>Year</th> <th>2017-18</th> <th>2018-19</th> <th>2019-20</th> </tr> </thead> <tbody> <tr> <td>Expenditure</td> <td>13.12</td> <td>17.97</td> <td>12.75</td> </tr> </tbody> </table>	Year	2017-18	2018-19	2019-20	Expenditure	13.12	17.97	12.75																
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7	The Regional Office of this Ministry at Bhuvaneshwar/ CPCB/ SPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly compliance report is being sent to MOEFCC, Bhubaneswar and monthly monitoring reports for the all units are being sent to CPCB/ WBPCB regularly. Six monthly compliance report is also available at SAIL's website.																								

8	The 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.	Project already commissioned.
9	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 West Bengal Pollution Control Board /Committee and may also be seen at Website of Ministry of Environment and Forests at http://envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office at Bhubaneswar.	Done. The same was sent to MOEFCC, Bhubaneswar also.

Compliance to CREP guidelines

1. Coke Oven Plants

- PLD, PLL and PLO are all within norm.

Battery No.	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/ charge)
Battery No. 1	3.81	0.63	2.27	55
Battery No. 2	2.36	0.35	0.64	27
Battery No. 5	2.25	0.26	1.30	34
Battery No. 6	3.10	0.41	1.22	61

- Rebuilding of Coke Oven Batteries

Bat # 1 Rebuilding – To be taken up from July’ 2021

Bat # 2 Rebuilding – Completed

Bat # 3 Rebuilding – Cold Repair from Apr’2017 to July’2021

Bat # 4 Rebuilding – Phased out

Bat # 5 Rebuilding – Completed

Bat # 6 Rebuilding - Cold and Hot repair from March’2016 to Jun’2017

2. Steel Melting Shop

Fugitive Emissions :

Reduction level at present is 85 % through the following actions:

- a. Mouth jam cleaning being carried out on requirement basis instead of opportunity basis to result proper sealing of skirt over converter mouth
- b. Iron ore & dolomite being charged in small batches instead of 500 kg or 1 ton
- c. Scrubber cleaning being done after every 250- 300 heats
- d. To have proper suction and to reduce puffing at converter mouth gas flow being maintained by running ID fan at a speed of +1300 rpm

100 % Reduction by Installation of Dog House- Order placed on M/s SMS GmbH, Germany on 30.01.2019. Completion schedule- 20 months from order placement.80% job has been completed. Despite our best efforts, the originally planned project completion schedule is delayed due to lockdown & restricted movements arising out of global COVID-19 pandemic.

3. Blast Furnace

Direct inject of reducing agents :

- CDI in operation in all the three Blast Furnaces

4. Solid Waste/ Hazardous Waste Management

Utilisation of SMS/ BF Slag during Apr-Sept'2020:

Waste	Generation (T)	Utilisation (T)	% Utilisation
BOF Slag	127629	95028	74.5 %
BF Slag	339976	343050*	100.9 %
Total	467605	438078	93.7 %

*Extra from stock

Efforts to enhance BOF slag utilization :

- A committee is working towards finding out utilization & disposal avenues for the un-utilized BOF slag internally as well as through potential vendors.

Hazardous Wastes

- Utilisation of Tar sludge/ ETP sludge :

Tar sludge and ETP sludge are blended with coal and charged into Coke Oven Batteries

- Inventorisation of hazardous waste :

Being done as per Hazardous Waste (M & H) Rules

5. Water Conservation/ Water Pollution

- Specific Water consumption for Apr-Sept'2020 is 3.47 m³/tcs (<5 m³/tcs)

- CO-BP effluent treatment plant is running efficiently and meeting effluent discharge standards

Location of the sampling point	Parameters monitored (mg/l, except pH)							
	pH	TSS	Phenol	Cyanide as CN ⁻	BOD	COD	Amm. Nitrogen	O & G
<u>COBP Effluent</u> Outlet to BOD plant	7.0	33	0.45	0.087	17.8	112	29	<6

Copy of the report enclosed.

6. Installation of Continuous Stack and AAQ systems

- Installation of Continuous Stack Emission monitoring system :

Continuous Stack Emission Monitoring systems installed and commissioned in all 37 no. stacks with regular online data transmission to CPCB server since February'2019.

- Online ambient air quality monitoring station :

- Commissioned in March 2011 .
- On-line data transfer on real time basis is being done to the CPCB server from the CAAQM Station

7. Efficient functioning of pollution control equipment

Pollution control equipments are being maintained and run efficiently. Compliance report in this regard is being submitted to CPCB every quarter.

8. Life Cycle Assessment (LCA) study recommendations

Raw Material usage

- Sinter in BF burden increased to around 70 %
- Recycling of iron ore fines, mill scales & lime fines being done
- LD slag is being used in BF, SP and in other areas
- CDI commissioned in all BFs

Improvement in Iron & Steel Making Process

- 100 % steel production through LD route
- 100 % steel processed through continuous casting

Clean Technology Development

- CDI in Blast Furnaces-2, 3 & 4
- Bell Less Top at BF-3
- Curtain Flame ignition system for ignition of sinter mix at Sinter Plant

Integrated energy management

- By-product gases are being used for power generation, BF Stoves, Rolling mill reheating furnaces etc.
- Energy intensive Blooming & Billet Mills have been phased out and replaced by energy efficient production through Caster route

Integrated waste water management

- Water consumption 3.47 m³/tcs
- Waste water treated in effluent treatment plants of Coke Oven, Blast Furnace, Continuous Casting Plant, Rolling Mills etc. and re-circulated back into process

9. Clean Technology Measures

- Castable runners installed in Blast Furnaces

- Reuse of the waste containing flux & ferrous waste. BOF Slag is being used in Blast Furnace, Sinter Plant. BOF Sludge, Mill scales, Lime fines is used for sinter making. Scrap is being charged in Blast Furnace and BOF.

- Reduction of Green House Gases

By-product gases are being used as fuel and for power generation and continuous efforts are being made to reduce power consumption

- Up-gradation of environment monitoring laboratories and training

Environment Laboratory is ISO 14001 certified and equipped with all latest instruments

- Improve overall House Keeping

House keeping has improved. Further improvement and beautification jobs are taken up regularly.

Annexure-II

FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT/PLANTATION
UNDER F© ACT 1980 AND E(p) ACT 1986

1.	a) Name of the Project	Expansion-cum-modernisation of Durgapur Steel Plant
	b) Env. /Forest Clearance Nos.	EC letter no. J-11011/492/2007-IA-II(I) dated 10.09.2007
2.	Location, Block/Sub. Divn./Dist/State	Faridpur, Burdwan, Durgapur, West Bengal
3.	Address for communication	Chief General Manager (Env. & Utilities), Durgapur Steel Plant, Durgapur – 713203
4.	Existing vegetation in the area region :	
	a) Species (trees/shrubs/grasses/climbers)	Woody plants
	b) Major prevalent species of each type	Sonajhuri (Acacia species), Teak plant, Sisoo plants, Krishna Chura & Radha Chura
5.	Land coverage by the project :	
	a) Total area under the project	20.5 hectares
	b) Area covered for basic infrastructure (roads/buildings/factory etc.)	Records not available
6.	Details about natural vegetation :	
	a) Name and number of trees/species felled	Nil
	b) Name and number of plants and species still available in the area	Nil
	c) By protecting the area will indigenous stock come up	Not applicable
	d) Extent of green belt developed	427.9hectares (from 2009-10 to 2020-21(H1))

7.	Plantation required to be carried out as per :	
	a) Conditions of Environmental clearance in ha./ Nos.	Green belt to be developed in 250 hectare within and around the plant premises
	b) Conditions for Forest Act (c) clearance in ha. /Nos.	Not applicable
	c) Voluntarily in ha. /Nos.	-

8.	Details of plantation					
a) Total area available for plantation in each category						
i)Green Belt	ii)Dumps	iii)Back filled area	iv)Road sides	v)Block plantation		
427.9 ha	-	-	-	-		
b) Plantation details (category wise & methodology used)						
Year of Plantation	Species planted	Spacing	Height attained (in ft.)	Total area covered (in hectares)	Area still available	
2015-16	Woody plants	2.5 metres	8 – 10	72.58	n.a.	
2016-17	-do-	-do-	8 – 9	19.25	-do-	
2017-18	-do-	-do-	6 – 8	80.94	-do-	
2018-19	-do-	-do-	5 – 7	24.28	-do-	
2019-20	-do-	-do-	3- 4	40.00	-do-	
c) Survival of plantation		1 st year	2 nd year	3 rd year	4 th year	5 th year
		2015-16	2016-17	2017-18	2018-19	2019-20
- Total plantation (No.)		115,900	30,800	140,000	40,000	72,000
- Survival (No.)		98,585	26,193	118,860	38,400	70,000
- Survival (%)		85.06	85.04	84.90	96.00	97.2
9.	Agency carrying out plantation and maintenance	i) Horticulture & Social Forestry Department, Durgapur Steel Plant ii) Divisional Forest Office, Govt. of West Bengal, Bidhan Nagar, Durgapur				

10.	Financial details (year wise) plantation wise and item wise			
Sl. No.	Year	Funds allocated (Rs. Lakhs)	Expenditure made (Rs. Lakhs)	Average cost of each surviving plant (in Rs.)
1.	2015-16	23.36	23.36	23.69
2.	2016-17	18.81	18.81	71.81
3.	2017-18	25	25	21.03
4.	2018-19	24	24	62.5
5.	2019-20	28.24	28.24	40.34
11.	Inspection of plantation by field experts and their comments and follow up actions		Previously the total duration of the job was only 11 months (development period: 02 months and maintenance period: 09 months) which was not sufficient for the proper growth and development of the plants. To increase the survival rate of the plant saplings, total duration of the plantation project is 910 days from 2019-20 (development period: 180 days and maintenance period : 730 days)	
12.	Remarks/ any other information		Plantation target for 2020-21 is 20,000 nos. Due to COVID 19 pandemic, plantation program for 2020-21 is getting delayed.	

Corporate Social Responsibility

Sl	Sector	CSR Activities / Projects
1	Education	Running and management of a Primary School – SAIL Kanya Shiksha Niketan for underprivileged / BPL girl child.
2	Education	Educational activities at the Model Steel Villages (MSVs)
3	Healthcare	Regular Free Health Check-up Camps at all the 11 MSVs of DSP.
4	Healthcare	Running of a Free Medical Unit (called NIVEDITA) at DSP Township
5	Healthcare	Regular Free Health Check-up Camps at all the 6 Peripheral Villages.
6	Healthcare	Running of Free Mother & Child Care Unit at DSP Mahila Samaj premises
7	Healthcare	Free Eye Camp at DSP Mahila Samaj premises
8	Healthcare	Free Health Check up Camps at SAIL Kanya Shiksha Niketan and Durgapur Handicapped Happy Home
9	Livelihood Generation / Vocational Training	Running of Vocational Training Institute (Shilpangan) for unemployed youth including women for livelihood generation on Mobile Repair, Fabrication, Computer Hardware & Software, House Wiring etc. Running of technical courses in Healthcare services area, e.g. Physiotherapy, Pathological Lab & ECG Technician courses at NIVEDITA.

10	Women Empowerment	Running of Vocational Training courses on Dress Making, Garments Designing & Embroidery, Hair and Skin Care for women
11	Rural Development	Repair, Maintenance jobs including minor construction and procurements at 11 MSVs
12	Rural Development	Sports & Cultural activities at MSVs.
13	Art & Culture	Running & Maintenance of Durgapur Museum
14	Art & Culture	Durgapur Grameen Nritya Sangeet Pratiyogita
15	Sports	Grameen Football & Kabaddi Pratiyogita
16	Sports	Development of Football Grounds at Peripheral Villages of DSP
17	Environment	Removal of Plastic Wastes from Steel Township
18	Environment	Development and Maintenance at Vasundhara – The SAIL Bio Diversity Park, including Plantation and Strengthening of Embankment of Waterbody at Theme Park

Contact Person :

Sri Asok Majumdar

General Manager

Environment Control Department

Durgapur Steel Plant

Durgapur – 713203 (W.B)

ecddsp@gmail.com

Stack Emission Report



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS
(AN ISO 9001:2015 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Ph. : (BSNL) 2248-3661/2698/7803, 2262-4153/4154, Fax : 33 2248-0447

Ph. : (Airtel) 4044-3380/3381/3382/3383

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007



NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-FG/19-20/243 Date: September 28, 2020 Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LIMITED.
 Address : Durgapur Steel Plant, Durgapur – 713203 (W.B.).

Your W.O. No. : 4515010916, dtd. 10.10.2019
 Sample Description : Stack Gas
 Date & time of sampling : 18.09.2020 at 11:10 A.M. to 11:50 A.M.
 Test Completed on : 28.09.2020

Parameters Tested
Physical : Temp., Velocity, Quantity of gas
Chemical : SO₂, NO₂, CO, CO₂ & PM

A. General information about stack :

- Stack connected to : Blast Furnace (CDI)
- Emission due to : Process activity
- Material of construction of stack : M.S
- Shape of stack : Circular.
- Whether stack is provided with permanent platform & ladder : Sample was taken from roof top.

B. Physical characteristics of stack :

- Height of the stack (a) from ground level : 30.0 M (b) from roof level : ---
- Diameter of the stack (a) at bottom : --- (b) at top : ---
- Diameter of the stack at sampling point : 1.8 M
- No. of Traverse point : 20 Nos.
- Height of the sampling point from GL : ---

C. Analysis / Characteristic of stack :

- Fuel used : N.A
- Fuel consumption : N.A

D. Results of Physical Parameters of Flue Gas :

Barometric pressure : 752 mmHg

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	65
2.	Velocity of gas in duct	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	m/sec	7.44
3.	Quantity of gas flow	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	NM ³ /hr	58557.00

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per MOE & F Notification, 31st March, 2012 (Environment (Protection) 3rd Amendment Rules 2012)
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985 RA 2012	mg/Nm ³	43.0	Not Available
2.	Nitrogen dioxide	IS 11255 : Part 7 : 2005 RA 2012	mg/Nm ³	32.0	Not Available
3.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Available
4.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	2.4	Not Available
5.	Particulate Matters	IS 11255 : Part 1 : 1985 RA 2009	mg/Nm ³	41	100 max.

F. Pollution control device

Details of pollution control devices attached with the stack : E.S.P.

:- END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V. BRIGGS & CO. (P) LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-FG/19-20/241 Date: September 28, 2020 Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LIMITED.
 Address : Durgapur Steel Plant, Durgapur – 713203 (W.B.).

Your W.O. No. : 4515010916, dtd. 10.10.2019	Parameters Tested
Sample Description : Stack Gas	
Date & time of sampling : 11.09.2020 at 11:00 A.M. to 11:36 A.M.	
Test Completed on : 28.09.2020	

Physical : Temp., Velocity, Quantity of gas
Chemical : SO₂, NO₂, CO, CO₂ & PM

A. General information about stack :

- Stack connected to : Ladle Furnace #3 (New)
- Emission due to : Burning of CO & BF Gas
- Material of construction of stack : M.S
- Shape of stack : Circular.
- Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

- Height of the stack (a) from ground level : 30.0 M (b) from roof level : ---
- Diameter of the stack (a) at bottom : --- (b) at top : ---
- Diameter of the stack at sampling point : 1.59 M
- No. of Traverse point : 24 Nos.
- Height of the sampling point from GL : ---

C. Analysis / Characteristic of stack :

- Fuel used : CO & BF Gas
- Fuel consumption : N.A

D. Results of Physical Parameters of Flue Gas : Barometric pressure : 752 mmHg

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	59
2.	Velocity of gas in duct	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	m/sec	7.62
3.	Quantity of gas flow	IS 11255:Part 3:2008 RA 2010 (1 st Rev.)	NM ³ /hr	48376

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per MOE & F Notification, 31st March, 2012 (Environment (Protection) 3rd Amendment Rules 2012)
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985 RA 2012	mg/Nm ³	19.0	Not Available
2.	Nitrogen dioxide	IS 11255 : Part 7 : 2005 RA 2012	mg/Nm ³	15.0	Not Available
3.	Carbon monoxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	<0.2	Not Available
4.	Carbon dioxide	IS 11255 : Part 1 : 1985 By Orsat	% v/v	1.0	Not Available
5.	Particulate Matters	IS 11255 : Part 1 : 1985 RA 2009	mg/Nm ³	27	100 max.

F. Pollution control device
 Details of pollution control devices attached with the stack : Bag filter.

:- END OF TEST REPORT :-

(J. MUKHERJEE)
 Quality Manager
 Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.

Ambient Air Quality Report



R. V. BRIGGS & CO. PRIVATE LTD.

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NABL ACCREDITED
 LABORATORY
 Certificate No. TC-7815

TEST REPORT

No. AP-AAQ/19-20/DSP/114 Date: September 02, 2020 Page 1 of 1

Issued to : M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant					
Address : Durgapur - 713203, West Bengal.					
Your W.O. No.	: 4515010916 dtd. 10.10.2019	Parameters Tested			
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP			
Location	: ECD Office Bldg.				
Date of Monitoring	: 25.08.2020	Test Completed on		: 31.08.2020	
Time of sampling	: 09:30 A.M. - 09:30 A.M.	Duration of Sampling		: 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 754 - 750 mmHg Temperature : 30.5°C - 27.5°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	44	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23) : 2006 Reaffirmed 2012	µg/m ³	67	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2) : 2001 Reaffirmed 2012	µg/m ³	13.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6) : 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	37.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9) : 1974 (2nd Reprint June' 1996)	µg/m ³	15.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	19.0	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.85	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22) : 2004 Reaffirmed 2009	µg/m ³	<0.1	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2005, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12) : 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Lead:0.1µg/m³, Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

:- END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007



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TEST REPORT

No. AP-AAQ/19-20/DSP/131		Date: September 23, 2020		Page 1 of 1	
Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD.			
Address		: Durgapur Steel Plant			
Your W.O. No.		: 4515010916 dtd. 10.10.2019		Parameters Tested PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP	
Sample Description		: Ambient Air			
Location		: ED (W) Bldg.			
Date of Monitoring		: 09.09.2020		Test Completed on : 23.09.2020	
Time of sampling		: 09:30 A.M. - 09:30 A.M.		Duration of Sampling : 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 754 - 750 mmHg			
		Temperature : 35.5°C - 27.5°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	41	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	65	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	14.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	31.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	19.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	15.0	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.83	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	<0.1	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.



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TEST REPORT

No. AP-AAQ/19-20/DSP/113 Date: September 02, 2020 Page 1 of 1

Issued to	: M/S. STEEL AUTHORITY OF INDIA LTD. Durgapur Steel Plant		
Address	: Durgapur - 713203, West Bengal.		
Your W.O. No.	: 4515010916 dtd. 10.10.2019	Parameters Tested	
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As, C ₆ H ₆ & BaP	
Location	: R & C Lab		
Date of Monitoring	: 17.08.2020	Test Completed on	: 31.08.2020
Time of sampling	: 10:15 A.M. - 10:15 A.M.	Duration of Sampling	: 24Hrs.

TEST FINDINGS:

Barometric Pressure : 754 - 750 mmHg
 Temperature : 30.5°C - 27.5°C

Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	28	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	63	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	10.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	33.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	13.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	17.1	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	µg/m ³	0.78	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	<0.1	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Lead:0.1 µg/m³, Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

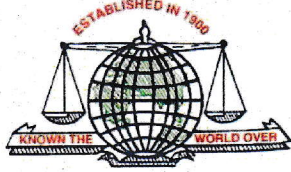
:- END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

No. AP-AAQ/19-20/DSP/115		Date: September 02, 2020		Page 1 of 1	
Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD.			
Address		: Durgapur – 713203, West Bengal.			
Your W.O. No.	: 4515010916 dtd. 10.10.2019	Parameters Tested			
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As,			
Location	: DSTV Center	C ₆ H ₆ & BaP			
Date of Monitoring	: 20.08.2020	Test Completed on		: 31.08.2020	
Time of sampling	: 09:00 A.M. - 09:00 A.M.	Duration of Sampling		: 24Hrs.	
TEST FINDINGS:		Barometric Pressure : 754 - 750 mmHg			
		Temperature : 24.0°C - 13.0°C			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	15	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	53	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	8	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	23	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	10	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	8	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.38	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	<0.1	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Lead:0.1µg/m³, Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

:- END OF TEST REPORT :-


(J. MUKHERJEE)
 Quality Manager
 Authorised Signatory

BB



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TEST REPORT

No. AP-AAQ/19-20/DSP/130 Date: September 23, 2020 Page 1 of 1

Issued to		: M/S. STEEL AUTHORITY OF INDIA LTD.			
Address		: Durgapur – 713203, West Bengal.			
Your W.O. No.	: 4515010916 dtd. 10.10.2019	<u>Parameters Tested</u>			
Sample Description	: Ambient Air	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , O ₃ , NH ₃ , CO, Pb, Ni, As,			
Location	: Projct Building Near Gate Pass Section	C ₆ H ₆ & BaP			
Date of Monitoring	: 11.09.2020	Test Completed on	: 23.09.2020		
Time of sampling	: 09:00 A.M. - 09:00 A.M.	Duration of Sampling	: 24Hrs.		
TEST FINDINGS:		Barometric Pressure : 754 - 750 mmHg			
		Temperature : 35.5.0°c - 27.0°c			
Sl. No.	PARAMETERS	TEST METHOD	UNIT	Results (Time Weighted Avg.)	Norms as per MOE & F Notification New Delhi, 16 th November, 2009
1.	PM _{2.5} (Size ≤ 2.5µm)	USEPA 1997a,40 CFR Part 50, Appendix L.	µg/m ³	35	60 (24 Hourly.)
2.	PM ₁₀ (Size ≤ 10µm)	IS 5182 (Part - 23): 2006 Reaffirmed 2012	µg/m ³	60	100 (24 Hourly.)
3.	Sulphur Dioxide as SO ₂	IS 5182 (Part - 2): 2001 Reaffirmed 2012	µg/m ³	11.0	80 (24 Hourly.)
4.	Nitrogen Dioxide as NO ₂	IS 5182 (Part - 6): 2006 Reaffirmed 2012 (1 st Rev.)	µg/m ³	28.0	80 (24 Hourly.)
5.	Ozone as O ₃	IS 5182 (Part - 9): 1974 (2nd Reprint June' 1996)	µg/m ³	18.0	180 (1 Hourly.)
6.	Ammonia as NH ₃	SOP No.: RVB/SOP/01/10, Indophenol method, As per CPCB guide line	µg/m ³	17.0	400 (24 Hourly.)
7.	Carbon Monoxide as CO	IS : 5182 (Part - 10), 1999 Non Dispersive Infra-Red (NDIR) spectroscopy	mg/m ³	0.77	04 (1 Hourly.)
8.	Lead as Pb	IS 5182 (Part - 22): 2004 Reaffirmed 2009	µg/m ³	<0.1	1.0 (24 Hourly.)
9.	Nickel as Ni	SOP No.: RVB/SOP/01/15, (AAS method), As per CPCB guide line	ng/m ³	<5.0	20
10.	Arsenic as As	SOP No.: RVB/SOP/01/16, (AAS method), As per CPCB guide line	ng/m ³	<0.25	6.0
11.	Benzene as C ₆ H ₆	IS 5182 (Part - 11): 2006, 2 nd Revision	µg/m ³	<1.0	5.0
12.	Benzo (a) Pyrene	IS 5182 (Part - 12): 2004, 1 st Revision	ng/m ³	<0.5	1.0

Minimum detection Limit: Nickel: 5 ng/m³, Arsenic: 0.25 ng/m³, Benzene: 1 µg/m³ & Benzo (a) Pyrene: 0.5 ng/m³

:- END OF TEST REPORT :-


(J. MUKHERJEE)

Quality Manager

Authorised Signatory

Ambient Noise Report



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TEST REPORT

No. AP-SL/19-20/DSP/639-642

Date: September 02, 2020

Page 1 of 1

Issued to	: M/S. STEEL AUTHORITY OF INDIA LIMITED. Durgapur Steel Plant,
Address	: Durgapur, Pin: 713203, West Bengal, India.
Your Ref. No.	: W.O. No.: 4515010916 dtd. 10.10.2019
Description of Sample	: Sound Level Monitoring
Date of Monitoring	28.08.2020

Parameters Tested

L_{Min} , L_{Max} & L_{eq}

SOUND LEVEL MONITORING AT AMBIENT LOCATION :

Sl. No	Locations	Day Time (06.00 A.M to 10.00 P.M)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area	Night Time (10.00 P.M to 06.00 A.M)			Norms as per Environmental Protection Act 1986, rule 3(1) and 4 (1) for Industrial area
		Sound Level in $d\beta(A)$				Sound Level in $d\beta(A)$			
		L_{Min}	L_{Max}	L_{eq}		L_{Min}	L_{Max}	L_{eq}	
1.	Near Main Gate	67.2	70.1	68.6	75 $d\beta(A)$	50.8	57.6	54.2	70 $d\beta(A)$
2.	Near Tamla Gate	63.7	66.1	64.2		52.3	62.5	57.4	
3.	Gate No. 02	66.8	69.5	67.1		46.4	58.6	52.5	
4.	Waria Gate	57.8	60.7	59.2		42.1	50.1	46.1	

Note : - L_{eq} - Equivalent sound energy.

-: END OF TEST REPORT :-

(J. MUKHERJEE)

Quality Manager

Authorised Signatory

For R.V.BRIGGS & CO. (P) LTD.