
2. The industry has obtained EC from MoE&F, GOI, New Delhi, vide order dated 11.06.2008 for expansion of Sponge Iron Plant i.e. Sponge Iron plant -100 TPD (1 x 100 TPD) to 175 TPD (1 x 100 TPD + 1 x 75 TPD Kilns) with 8MW Power Plant (4.0 MW WHRB and 4.0MW Biomass based power plant).


4. The industry has applied for renewal of CFO&HWA of the Board on 05.07.2018 and the RO: Kurnool submitted a detailed verification report to the Board office, Vijayawada on 19.07.2018 for taking further necessary action.

5. The Board after careful examination of the CFO application of the industry and report of the EE, RO: Kurnool, the CFO Application of the industry was rejected under Section 25(4)(b) of the Water Act and under Section 21 (4) of the Air Act for non-compliances of conditions stipulated in the CFO&HWA order dated 27.05.2016 and Task Force directions dated 17.03.2017.


7. The officials of ZO: Kurnool inspected the industry on 29.04.2019 and submitted the report vide letter dated 02.05.2019. The salient features of the industry and other details are given below:

<table>
<thead>
<tr>
<th>Total Area of the plant in Acres</th>
<th>42 acres (including additional land of 10 acres acquired in East &amp; Western directions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built up area in Acres</td>
<td>6.0 Acres.</td>
</tr>
<tr>
<td>Extent of Green belt developed in Acres</td>
<td>The industry has developed green belt in an area of about 7 Acres Eastern and Northern direction within the premises</td>
</tr>
<tr>
<td>Balance green belt to be developed</td>
<td>About 7.0 acres</td>
</tr>
</tbody>
</table>

1) Raw materials / Fuels required for production at Consented capacity per Day / Month

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Major Raw material / material used in the Activity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iron Ore</td>
<td>350 TPD</td>
</tr>
<tr>
<td>2</td>
<td>Coal</td>
<td>280 TPD</td>
</tr>
<tr>
<td>3</td>
<td>Dolomite</td>
<td>7 TPD</td>
</tr>
</tbody>
</table>

Co-generation Power Plant

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Products and By-products</th>
<th>Consented capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Waste flue gases from sponge Iron kilns</td>
<td>42000 Nm³/hr</td>
</tr>
<tr>
<td>2</td>
<td>Char</td>
<td>61.25 TPD</td>
</tr>
<tr>
<td>3</td>
<td>Coal</td>
<td>180 TPD</td>
</tr>
</tbody>
</table>

2) Products & By Products manufactured:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Products and By-products</th>
<th>Consented capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sponge Iron</td>
<td>66,0000 TPA (2X100 TPD Rotary kilns) /175 TPD</td>
</tr>
<tr>
<td>2</td>
<td>Co-Generation Power Plant</td>
<td>8 MW</td>
</tr>
</tbody>
</table>

The industry is operating only one and producing sponge iron @ 70 – 75 TPD and the industry is not operating the power plant during the inspection.

3) Water consumption: Source of Water supply - Borewell

<table>
<thead>
<tr>
<th>S. No</th>
<th>Purpose</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cooling tower makeup</td>
<td>1138 KLD</td>
</tr>
<tr>
<td>2</td>
<td>Boiler Feed</td>
<td>48 KLD</td>
</tr>
</tbody>
</table>
3. Ash handling and dust suppression | 112 KLD
4. Gardening / Irrigation. | 12 KLD
5. Domestic | 14.0 KLD
Total | 1324.0 KLD

4) Waste Water Generation:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Source</th>
<th>Consented quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Cooling bleed off, Boiler blow down and DM plant waste water</td>
<td>345 KLD</td>
</tr>
<tr>
<td>2)</td>
<td>Domestic Effluents</td>
<td>7.0 KLD</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>352.0 KLD</td>
</tr>
</tbody>
</table>

5) ETP Details & Mode of Disposal:

I. Outlet No. 1
a. Stream Details: Cooling bleed-off, boiler blow-down and DM plant regeneration. 
b. Treatment unit’s details with dimensions and treatment capacity: Collection tank, neutralization tank and settling tank 
c. Point of disposal: After neutralization, partly utilized for ash conditioning, partly for re-circulation and green belt development

III. For Domestic waste water: Septic tank followed by soak pit

6) Air pollution:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Source of Pollution Note: Capacity should be mentioned for each unit</th>
<th>Control equipment provided</th>
<th>Flow rate in m3/hr.</th>
<th>Stack height in Mts - above GL</th>
<th>Limiting Standard prescribed by Board</th>
<th>Board Monitoring Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Attached to Kiln – 75 TPD</td>
<td>Dust settling chamber &amp; ESP</td>
<td>---</td>
<td>45 mtrs (common chimney)</td>
<td>SPM -100 mg/Nm³</td>
<td>---</td>
</tr>
<tr>
<td>2.</td>
<td>Attached to Kiln – 100 TPD</td>
<td>Dust settling chamber &amp; ESP</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3.</td>
<td>Attached to Waste heat recovery boiler – 2 X 10 TPH</td>
<td>ESP</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4.</td>
<td>Attached to FBC boiler – 30 TPH</td>
<td>ESP</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.</td>
<td>Attached to Product house</td>
<td>Bag filter</td>
<td>---</td>
<td>11.0 mts</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6.</td>
<td>Attached to Coal injection &amp; Cooler discharge – I &amp; II</td>
<td>Bag filter-2Nos</td>
<td>---</td>
<td>11.0 mts</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>7.</td>
<td>Attached to Coal circuit</td>
<td>Bag filter</td>
<td>---</td>
<td>11.0 mts</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8.</td>
<td>Attached to DG set of capacity – 400 KVA</td>
<td>Silencer with acoustic enclosures</td>
<td>---</td>
<td>4.0 mtrs</td>
<td>SPM-115 mg/Nm³</td>
<td>---</td>
</tr>
</tbody>
</table>

During inspection, it was observed that the bag filters are functioning and two fields in working condition but the industry has to ensure proper functioning of the ESP by taking up periodical wrapping as some emissions are finding their way through ABC Cap which shall be avoided by good maintenance.

7) Hazardous Solid Waste details:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Hazardous Waste</th>
<th>Stream Number as per HWM Rules</th>
<th>Quantity of Hazardous waste</th>
<th>Disposal Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Used oil</td>
<td>5.1 of Sch-I</td>
<td>600 L/yr.</td>
<td>Disposed to authorized re processors/recyclers of waste oil.</td>
</tr>
</tbody>
</table>
8) Non-Hazardous Solid Waste details:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the waste</th>
<th>Source of generation</th>
<th>Quantity of waste TPD</th>
<th>Disposal Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Char &amp; Dolochar</td>
<td>From process</td>
<td>61.25</td>
<td>Used as a fuel in FBC Boiler</td>
</tr>
<tr>
<td>2</td>
<td>Iron ore fines</td>
<td>From APCE</td>
<td>28.52</td>
<td>Reused in the process / sold to cement industries</td>
</tr>
<tr>
<td>3</td>
<td>Dust from bag filters</td>
<td>From process</td>
<td>2.0</td>
<td>Sold to brick manufacturers / cement industries.</td>
</tr>
<tr>
<td>4</td>
<td>Ash from boilers</td>
<td>From the boiler</td>
<td>11.73</td>
<td>Sold to cement plants / brick manufacturers</td>
</tr>
</tbody>
</table>

8) CFO Application:

9) The industry’s CFO application was rejected duly mentioning the reasons. The latest status of the industry on the reasons mentioned in the rejection order dt.03.08.2018 is as follows:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Reason</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The industry has not provided water meters for assessing the consumption for cooling tower make up, boiler feed, ash handling and dust suppression, gardening and domestic purposes</td>
<td>The industry has two bore wells and is pumping the water from bore well-1 to the sump near cooler discharge area and from Bore well-2 to the water reservoir. The industry has provided water meter for each of the Bore well.</td>
</tr>
<tr>
<td>2</td>
<td>The industry has not provided water meters for assessing waste water generated from cooling tower makeup, boiler blow down and DM plant</td>
<td>Power plant (Captive) has not been in operation since a long time. The industry proposes to provide water meters to assess the waste water when they are going to operate power plant.</td>
</tr>
<tr>
<td>3</td>
<td>The industry has not provided continuous online stack monitoring systems to the stacks attached to the kilns</td>
<td>The industry is requesting for some more time to provide continuous online stack monitoring systems to the stacks attached to the kilns. (OCEMS) as they are facing financial constraints.</td>
</tr>
<tr>
<td>4</td>
<td>The industry shall provide 04 Nos., of AAQMs stations in the core zone as well as buffer zone for RSPM, SPM, SO2, NOX monitoring in consultation within the RO, Kurnool within 2 months</td>
<td>Not provided</td>
</tr>
<tr>
<td>5</td>
<td>The industry has not provided interlocking system within 02 months in such way that feeding to the kiln shall be stopped in case of opening of emergency cap provide at after burner chamber</td>
<td>Complied</td>
</tr>
<tr>
<td>6</td>
<td>The industry has not provided activation recorder for emergency cap opening within one month</td>
<td>Not provided.</td>
</tr>
<tr>
<td>7</td>
<td>The industry has not provided individual energy meter to all the air pollution control equipments within one month and not maintaining records</td>
<td>The industry has provided energy meter for bag filters provided at the cooler discharge and industry has provided energy meter for the bag filters provided at product house. The energy meter readings are: 36703, 84331 and 009448 respectively.</td>
</tr>
<tr>
<td>8</td>
<td>The industry has not provided closed storage facilities for storage of raw material and product, char and dolochar within 3 months</td>
<td>The industry has provided closed shed for storing coal with storage capacity 1,000 Tons. It also provided 2 bunkers for storage of char and dolochar. However small heaps of char and dolochar were found stored openly in the premises due to insufficient capacity of bunkers.</td>
</tr>
<tr>
<td>9</td>
<td>The industry has dumped iron ore fines, char &amp; dust collector from APCE in the open area within the premises causing</td>
<td>Small heaps of char and dolochar were found stored openly in the premises due to insufficient capacity of bunkers. However the</td>
</tr>
</tbody>
</table>
fugitive dust emissions during wind blows  
10 The industry not provided cladding at roof of the product house within 15 days  
The industry has provided cladding at roof of the product house.  
11 The industry not provided permanent water sprinklers all along the internal roads, raw material storage yards, dolochar storage yards within one month  
The industry has provided 6 Nos of permanent water sprinklers near the product house area, cooler discharge area and near the kilns.  
12 Fugitive dust emissions were observed from the cooler discharge, intermediate bin, transfer points, etc., the entire plant around the raw material handling, kiln, product separation and storage areas, internal roads were covered with fine dust of 2 – 4 inches causing fugitive dust emission during wind blows  
Fugitive dust emissions are not much as the industry is regularly cleaning and wetting the ground in the premises. The industry is proposing to lay internal roads in near future and the fugitive emissions will be drastically reduced after laying of roads. During inspection all the sprinklers are in working condition and the mobile tanker is making rounds in the premises.  
13 During inspection of Board officials it was observed that, the Electrodes of the ESP provided to the DRI kiln of capacity 100 TPD are got damaged and the industry is letting out the emission through ABC cap causing air pollution in the surrounding area  
The industry has rectified the Electrodes of the ESP provided to the DRI kiln of capacity 100 TPD and the industry has to operate the frequent wrapping at regular intervals. Very minute emissions were found to be escaping through ABC cap. The industry was instructed to avoid them.  
14 The industry has not provided concrete or asphalt the internal roads and work area within 02 months  
The industry is proposing to lay internal roads in near future and the fugitive emissions will be drastically reduced after laying of roads.  
15 Not developed green belt in 33% of the total area of the plant in the premises.  
The total area of the industry is 42 acres and the industry has to develop about 13.86 acres (about 33% of the total area) of green belt in the premises. The industry has developed greenbelt of about 11 acres towards east & western side of the premises and has to develop another 2.86 acres to achieve green belt of 33% of the total area.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Directions</th>
<th>Compliance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The industry shall immediately obtain renewal of CFO order of the Board</td>
<td>The industry has applied for renewal of CFO &amp; HWA of the Board on 05.07.2018, the Board rejected the CFO applications for non compliance of the conditions stipulated in CFO and HWA order dt. 27.05.2016 duly mentioning the reasons.</td>
</tr>
<tr>
<td>2</td>
<td>The industry shall operate all air pollution control systems continuously to comply with Boards’ standards</td>
<td>Complied. During the inspection, stack monitoring has been conducted and the PM concentration value is 160 mg/Nm³</td>
</tr>
<tr>
<td>3</td>
<td>The industry shall install water meters to know the water consumption as per CFO order within one month</td>
<td>Complied.</td>
</tr>
<tr>
<td>4</td>
<td>The industry shall install online stack monitoring system for the stacks attached to the kiln and power plant within 2 months</td>
<td>Not complied</td>
</tr>
<tr>
<td>5</td>
<td>The industry shall provide interlocking system within 02 months in such way that feeding to the kiln shall be</td>
<td>Complied</td>
</tr>
<tr>
<td></td>
<td><strong>6</strong> The industry shall provide activation recorder for emergency cap (ABC Cap) opening within one month</td>
<td><strong>Not complied</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>The industry has provided energy meter for bag filters provided at the cooler discharge and industry has provided energy meter for the bag filters provided at product house. The energy meter readings are: 36703, 84331 and 009448 respectively.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>7</strong> The industry shall provide individual energy meters to all the air pollution control equipments within one month time and shall maintain proper records. The consolidated records shall be furnished to EE, RO, Kurnool every month</td>
<td><strong>Not complied</strong></td>
</tr>
<tr>
<td></td>
<td>The industry has provided energy meter for bag filters provided at the cooler discharge and industry has provided energy meter for the bag filters provided at product house. The energy meter readings are: 36703, 84331 and 009448 respectively.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>8</strong> The industry shall provide closed storage facilities for storage of raw material and product, char and dolochar within 2 months time and shall avoid open storage of raw materials, char and product to minimize fugitive emissions</td>
<td><strong>Not complied</strong></td>
</tr>
<tr>
<td></td>
<td>The industry has provided closed shed for storing coal with storage capacity 1,000 Tons. It also provided 2 bunkers for storage of char and dolochar. However small heaps of char and dolochar were found stored openly in the premises due to insufficient capacity of bunkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>9</strong> The industry shall provide permanent water sprinklers all along the internal roads, raw material storage yards, dolochar storage yards within one month. The industry shall ensure continuous operation of water sprinklers provided at various places</td>
<td><strong>Complied</strong></td>
</tr>
<tr>
<td></td>
<td>The industry has provided 6 Nos. of sprinklers and one mobile tanker and industry proposes to increase the sprinklers at various strategic points to minimize the fugitive emissions further</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>10</strong> The industry shall concrete or asphalt the internal roads and work area within 02 months</td>
<td><strong>Not compliant</strong></td>
</tr>
<tr>
<td></td>
<td>However the industry proposes to provide internal roads during this financial year.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>11</strong> The industry shall submit a bank Guarantee of Rs.5.0 Lakhs in favour of Environmental Engineer, Kurnool in prescribed format within 15 days with validity period of one year towards compliance of Board directions.</td>
<td><strong>Not submitted</strong></td>
</tr>
</tbody>
</table>

### 11) Inspection Team’s Remarks:

1. M/s. Sri Sai Sindhu Industries Ltd (Formerly M/s. Sai Sindhu Sponge Iron Pvt Ltd), is located at Bogasamudaram(V), Tadipatri(M), Anantapur Dist and is engaged in manufacture of Sponge Iron – 175 TPD, Co-Generation Power Plant – 8MW.
2. The industry was issued with Consent for Operation of the Board vide order dated 27.05.2016 with a validity up to 31.12.2017 and the industry applied for renewal to the Board and the renewal CFO application was rejected by the Board for non compliance of CFO conditions.
3. The industry has 02 Nos., of rotary kilns of capacity 75 TPD and 100 TPD and at present the industry is operating only 01 Kiln of capacity 100 TPD.
4. The industry has provided the following pollution control systems.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th><strong>Source of pollution</strong></th>
<th><strong>Control systems</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kiln – 100 TPD</td>
<td>ESP</td>
</tr>
<tr>
<td>2.</td>
<td>Kiln – 75 TPD</td>
<td>ESP</td>
</tr>
<tr>
<td>3.</td>
<td>FBC Boiler – 30 TPH</td>
<td>ESP</td>
</tr>
<tr>
<td>4.</td>
<td>Waste heat recovery boiler (2X10 TPH)</td>
<td>ESP</td>
</tr>
<tr>
<td>5.</td>
<td>Product house</td>
<td>Bag filter</td>
</tr>
<tr>
<td>6.</td>
<td>Coal crusher</td>
<td>Bag filter</td>
</tr>
</tbody>
</table>

5. The air pollution control equipment is in operation and 2 fields of ESP are found to be working satisfactorily.
6. The industry has provided 6 Nos of permanent water sprinklers and one mobile tanker to wet the internal roads and the same were found working during inspection.
7. The industry has provided interlocking system in such a way that ID Fan will be stopped in case of failure of air pollution control equipment and consequently feeding to the kiln is also stopped.
8. The industry has provided coal shed with a storage capacity of 1000 Tons and has provided 2 bunkers to store the char and dolomitic char. Char and dolomitic char of some quantities are stored openly in the premises due to insufficient capacities of bunkers. It was informed that they will provide additional capacity to avoid the open storage.

9. The industry has **not asphalted or concreted the internal roads.** However the industry proposes to provide internal roads during this financial year.

10. The industry has **not provided continuous online stack monitoring systems** to the stack attached to the Kiln & online CAAQM stations and activation recorder to the After Combustion Chamber (ABC) cap.

11. During inspection the Stack & fugitive emission Monitoring had been carried out and the **PM value is 160 mg/Nm³ against the standard of 100 mg/Nm³** and the SPM value of fugitive emissions monitoring is 1950 µg/m³ against the standard of 2000 µg/m³.

In view of the positive response from the industry with regard to operation of pollution control equipment and installation of sprinklers and mobile water tanker and considering the financial constraints of new management which has taken the unit on lease basis, 6 months time may be allowed to install the remaining control measures and to lay internal roads and to comply with other non compliance like online stack monitoring and CAAQMs installation to the industry.

**HO Remarks:**

1. The industry has not provided continuous online stack monitoring systems to the stacks attached to the kilns.

2. The industry has not provided 04 Nos., of AAQMs stations in the core zone as well as buffer zone for RSPM, SPM, SO2, NOX monitoring.

3. The industry has not provided activation recorder for emergency cap opening.

4. The industry has not provided concrete or asphalt the internal roads and work area.

5. The industry has not submitted a bank Guarantee of Rs.5.0 Lakhs in favour of Environmental Engineer, Kurnool in prescribed format within 15 days with validity period of one year towards compliance of Board directions.

6. The industry has to develop another 2.86 acres to achieve green belt of 33% of the total area.

The issue is placed before the CFO Committee for Review and Recommendations.

***