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| <b>RAIL WHEEL PLANT/BELA</b><br><b>(INDIAN RAILWAYS)</b><br><b>GOVT. OF INDIA</b> |  | <b>OFFICE OF THE</b><br><b>CHIEF ADMINISTRATIVE OFFICER,</b><br><b>ADMINISTRATIVE BUILDING,</b><br><b>VILLAGE-BELA, BLOCK- DARIAPUR,</b><br><b>SARAN (CHHAPRA), BIHAR.</b> |
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### **HALFYEARLY MONITORING REPORT OF GROUND WATER FROM OCTOBER-2014 TO MARCH-2015**

REF: (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.  
(ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. pt 2-116/11 t-17582, dated 22.11.12.  
(iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-17581, dated 22.11.12.

**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, Netal (India) Limited, Mumbai)**

| Ground Water sample                      | UNIT  | Limit as per IS10500:2012          |  | Borewell No.1 |        |        |        |        |          |
|--|-------|------------------------------------|--|---------------|--------|--------|--------|--------|----------|
|  |       | Limit (Max)<br>(mg/l)<br>Desirable | Permissible limit in the absence of alternative source | Oct-14        | Nov-14 | Dec-14 | Jan-15 | Feb-15 | March-15 |
| 1. Colour                                | Hazen | 5.0                                | 15   | <1.00         | <1.00  | <1.00  | <1.00  | <1.00  | <1.00    |
| 2. pH                                    | --    | 6.5 to 8.5                         | No relaxation  | 7.2           | 7.3    | 7.2    | 7.2    | 7.0    | 7.2      |
| 3. Turbidity on NTU                      | NTU   | 1.00                               | 5.00   | <1.00         | <1.00  | <1.00  | <1.00  | <1.00  | <1.00    |
| 4. Total Dissolved Solids (TDS)          | mg/l. | 500.00                             | 2000.00  | 394           | 418    | 421    | 279    | 255    | 259      |
| 5. Total Hardness as CaCO <sub>3</sub>   | mg/l. | 200.00                             | 600.00   | 264           | 198    | 196    | 218    | 225    | 227      |
| 6. Calcium as Ca                         | mg/l. | 75.00                              | 200.00   | 44.9          | 39.2   | 39.8   | 25.9   | 24.6   | 25.3     |
| 7. Magnesium as Mg                       | mg/l. | 30.00                              | No relaxation  | 35.8          | 28.9   | 27.6   | 28.6   | 27.9   | 27.8     |
| 8. Iron as Fe                            | mg/l. | 0.30                               | No relaxation  | 0.17          | 0.14   | 0.12   | 0.17   | 0.14   | 0.15     |
| 9. Total Alkalinity as CaCO <sub>3</sub> | mg/l. | 200.00                             | 600.00   | 309           | 284    | 282    | 276    | 272    | 274      |
| 10. Chloride as Cl                       | mg/l. | 250.00                             | 1000.00  | 38            | 41     | 42     | 39.2   | 42.6   | 43.2     |
| 11. Sulphate as SO <sub>4</sub>          | mg/l. | 200.00                             | 400.00   | 20.5          | 18.6   | 18.2   | 16.9   | 15.9   | 15.4     |
| 12. Nitrate as NO <sub>3</sub>           | mg/l. | 45.00                              | No relaxation  | 3.8           | 3.5    | 3.4    | 3.6    | 3.5    | 3.2      |
| 13. Fluoride as F                        | mg/l. | 1.00                               | 1.50   | 0.18          | 0.12   | 0.13   | 0.17   | 0.16   | 0.15     |
| 14. Arsenic as As                        | mg/l. | 0.01                               | 0.05   | <0.01         | <0.01  | <0.01  | <0.01  | <0.01  | <0.01    |
| 15. Coliform                             | MPN   | ND                                 | --   | ND            | ND     | ND     | ND     | ND     | ND       |

## HALFYEARLY MONITORING REPORT OF GROUND WATER FROM OCTOBER-2014 TO MARCH-2015

| <b>Ground Water sample</b>               | UNIT  | Limit as per IS10500:2012          |   | Borewell No.2 |        |        |        |        |          |
|--|-------|------------------------------------|---|---------------|--------|--------|--------|--------|----------|
|  |       | Limit (Max)<br>(mg/l)<br>Desirable | <i>Permissible limit in the absence of alternative source</i> | Oct-14        | Nov-14 | Dec-14 | Jan-15 | Feb-15 | March-15 |
| 1. Colour                                | Hazen | 5.0                                | 15  | <1.00         | <1.00  | <1.00  | <1.00  | <1.00  | <1.00    |
| 2. pH                                    | --    | 6.5 to 8.5                         | No relaxation   | 7.1           | 7.2    | 7.1    | 7.1    | 6.8    | 7.1      |
| 3. Turbidity on NTU                      | NTU   | 1.00                               | 5.00  | <1.00         | <1.00  | <1.00  | <1.00  | <1.00  | <1.00    |
| 4. Total Dissolved Solids (TDS)          | mg/l. | 500.00                             | 2000.00   | 379           | 382    | 394    | 284    | 260    | 262      |
| 5. Total Hardness as CaCO <sub>3</sub>   | mg/l. | 200.00                             | 600.00  | 256           | 197    | 195    | 218    | 220    | 223      |
| 6. Calcium as Ca                         | mg/l. | 75.00                              | 200.00  | 39.2          | 32.8   | 33.2   | 28.1   | 25.9   | 26.1     |
| 7. Magnesium as Mg                       | mg/l. | 30.00                              | No relaxation   | 38.7          | 26.2   | 27.3   | 29.2   | 28.7   | 28.3     |
| 8. Iron as Fe                            | mg/l. | 0.30                               | No relaxation   | 0.2           | 0.7    | 0.14   | 0.21   | 0.15   | 0.17     |
| 9. Total Alkalinity as CaCO <sub>3</sub> | mg/l. | 200.00                             | 600.00  | 284           | 248    | 245    | 285    | 280    | 278      |
| 10. Chloride as Cl                       | mg/l. | 250.00                             | 1000.00   | 34            | 35     | 36     | 42.8   | 40.8   | 40.5     |
| 11. Sulphate as SO <sub>4</sub>          | mg/l. | 200.00                             | 400.00  | 26.3          | 19.4   | 19.0   | 17.8   | 16.4   | 15.9     |
| 12. Nitrate as NO <sub>3</sub>           | mg/l. | 45.00                              | No relaxation   | 4.4           | 4.2    | 4.2    | 3.7    | 3.9    | 3.7      |
| 13. Fluoride as F                        | mg/l. | 1.00                               | 1.50  | 0.22          | 0.16   | 0.15   | 0.15   | 0.14   | 0.14     |
| 14. Arsenic as As                        | mg/l. | 0.01                               | 0.05  | <0.01         | <0.01  | <0.01  | <0.01  | <0.01  | <0.01    |
| 15. Coliform                             | MPN   | ND                                 | --  | ND            | ND     | ND     | ND     | ND     | ND       |

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### **HALFYEARLY MONITORING REPORT OF AMBIENT NOISE FROM OCTOBER-2014 TO MARCH-2015**


**REF: (i)** Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.

(ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. pt 2-116/11 t-17582, dated 22.11.12.

(iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-17581, dated 22.11.12.

**(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, , Netal (India) Limited,Mumbai)**

| Monitoring Location                 | Unit  | Oct-14   |            | Nov-14   |            | Dec-14   |            | Jan-15   |            | Feb-15   |            | March-15 |            |
|-------------------------------------|-------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|
|                                     |       | Day time | Night time | Day time | Night time | Day time | Night time | Day time | Night time | Day time | Night time | Day time | Night time |
| 1. Near Main Gate                   | dB(A) | 56.2     | 42.2       | 48.3     | 44.7       | 55.9     | 52.6       | 42.9     | 39.4       | 36.2     | 30.1       | 37.4     | 30.6       |
| 2. Near ADM Building                | dB(A) | 44.5     | 36.1       | 42.5     | 36.4       | 40.1     | 37.2       | 36.7     | 29.5       | 32.8     | 28.4       | 34.6     | 28.8       |
| 3. Near Final Wheel Processing Sec. | dB(A) | 62.0     | 44.4       | 58.8     | 52.6       | 46.6     | 39.5       | 59.4     | 51.2       | 49.6     | 42.6       | 48.9     | 41.6       |
| 4. Near Furnace                     | dB(A) | 70.8     | 46.6       | 65.2     | 59.7       | 60.2     | 55.2       | 55.6     | 48.7       | 52.3     | 48.8       | 53.2     | 47.5       |

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### **HALFYEARLY MONITORING REPORT OF STACK EMISSION FROM OCTOBER-2014 TO MARCH-2015**

(Sampling & Analysis done by MoEF Recognized Environmental Laboratory, , Netal (India) Limited,Mumbai)

|  |                      | Average concentration for the period Oct-14 to march-15 |
|--|----------------------|---|
| <b>Stack connected to Bag House attached with Electric Arc Furnace</b> | <b>Limit (Max)</b>   |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | <b>52.73</b>  |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> | <b>37.28</b>  |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        | <b>201.75</b>   |
| <b>Stack connected to Normalizing Furnace</b>                          |                      |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | <b>22.88</b>  |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> | <b>29.78</b>  |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        | <b>114.06</b>   |
| <b>Stack connected to 2400 KVA DG Set-1</b>                            |                      |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | <b>37.18</b>  |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> | <b>58.05</b>  |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        | <b>203.50</b>   |
| <b>Stack connected to Draw Furnace</b>                                 |                      |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | 33.12   |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> | <b>29.26</b>  |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        | <b>125.42</b>   |
| <b>Stack connected to I2400 KVA DG Set-2</b>                           |                      |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | 38.47   |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> | 56.95   |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        | 171.75  |
| <b>Stack connected to Incinerator</b>                                  |                      |   |
| a. PM, mg / NM <sup>3</sup>  | <b>75.00</b>         | <b>Not in Operation</b>                                 |
| b. SO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>Not specified</b> |   |
| c. NO <sub>2</sub> , mg / NM <sup>3</sup>                              | <b>710.00</b>        |   |

RAIL WHEEL PLANT/BELA

(INDIAN RAILWAYS)

GOVT. OF INDIA



OFFICE OF THE  
CHIEF ADMINISTRATIVE OFFICER  
ADMINISTRATIVE BUILDING,  
VILLAGE-BELA, BLOCK- DARIAPUR,  
SARAN (CHHAPRA), BIHAR.

## HALFYEARLY MONITORING REPORT OF AMBIENT AIR FROM OCTOBER-2014 TO MARCH-2015

REF: (i) Ministry of Environment and Forest (MoEF)/GOI environmental Clearance no. J-11011/527/2010-IA.II(I) dated 12.01.2012.

(ii) Bihar State Pollution Control Board (BSPCB) Discharge Consent Order Letter No. pt 2-116/11 t-17582, dated 22.11.12.

(iii) BSPCB Emission Consent Order letter No. PT(NOC)-628/09 T-17581, dated 22.11.12.

**(Monitoring & Analysis done by MoEF Recognized Environmental Laboratory, Neetal India Limited, Mumbai)**

| Month         | Parameters        | Limit(Max)            | Near Main Gate | Near East Side Boundary Wall (Store Yard) | Near Main Store 2 | Near ADM Building (TTC) | Average values |
|---------------|-------------------|-----------------------|----------------|---|-------------------|-------------------------|----------------|
| October-2014  | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 59.4           | 59.55                                     | 72.2              | 52.75                   | <b>60.98</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 33.65          | 39.7                                      | 45.8              | 33.35                   | <b>38.13</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 16.15          | 20  | 24.95             | 21.7                    | <b>20.70</b>   |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 32.75          | 35.45                                     | 37.25             | 35.65                   | <b>35.28</b>   |
| November-2014 | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 41.85          | 51.3                                      | 59.8              | 39.5                    | <b>48.11</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 20.35          | 27.55                                     | 35.5              | 25.65                   | <b>27.26</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 9.45           | 12.35                                     | 13.95             | 11.3                    | <b>11.76</b>   |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 24.35          | 24.6                                      | 27.05             | 22.3                    | <b>24.58</b>   |
| December-2014 | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 43.7           | 49.65                                     | 51.5              | 42.9                    | <b>46.94</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 25.7           | 30.55                                     | 40.75             | 27.45                   | <b>31.11</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 10.7           | 12.55                                     | 10.4              | 13.5                    | <b>11.79</b>   |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 22.55          | 19.65                                     | 25.95             | 21.15                   | <b>22.33</b>   |
| January-2015  | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 37.6           | 61.55                                     | 56.45             | 39.8                    | <b>48.85</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 21.8           | 31.5                                      | 31.7              | 22.25                   | <b>26.81</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 9.55           | 10.25                                     | 9                 | 10.6                    | <b>9.85</b>    |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 22.5           | 22.5                                      | 20.55             | 23.3                    | <b>22.21</b>   |
| Feb-2015      | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 48.2           | 55.3                                      | 48.9              | 36.65                   | <b>47.26</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 24.9           | 29.55                                     | 31.5              | 25.1                    | <b>27.76</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 6.4            | 9.15                                      | 7.35              | 7.8                     | <b>7.68</b>    |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 17.9           | 19.5                                      | 18.25             | 21.45                   | <b>19.28</b>   |
| March-2015    | PM <sub>10</sub>  | 100 µg/m <sup>3</sup> | 51.4           | 59.2                                      | 55.7              | 36.65                   | <b>50.74</b>   |
|               | PM <sub>2.5</sub> | 60 µg/m <sup>3</sup>  | 28             | 30.5                                      | 32.8              | 26.6                    | <b>29.48</b>   |
|               | SO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 6.65           | 8.7                                       | 7.05              | 12                      | <b>8.60</b>    |
|               | NO <sub>2</sub>   | 80 µg/m <sup>3</sup>  | 17.65          | 18.5                                      | 18.15             | 19.55                   | <b>18.46</b>   |

