

## Information to be provided for Monitoring of the Project

### 1. Raw Material Consumption & Steel Production:

| Total Raw Material Consumption      | Unit  | 2011-12          | 2012-13          | 2013-14          |
|-------------------------------------|-------|------------------|------------------|------------------|
| Purchase Coke                       | Tonne | 1,30,344         | 8,00,163         | 4,44,728         |
| Coking Coal (Incl HMC)              | Tonne | 53,88,048        | 55,62,519        | 63,23,023        |
| Non-Coking Coal                     | Tonne | 9,90,849         | 9,69,915         | 12,04,696        |
| Middling Coal                       | Tonne | 98,747           | 1,08,492         | 65,471           |
| Iron Ore                            | Tonne | 118,55,886       | 140,52,514       | 158,18,309       |
| Purchase Pellet                     | Tonne | -                | 55,753           | 54,083           |
| Lime Stone                          | Tonne | 25,06,409        | 27,37,554        | 30,61,571        |
| Dolomite & Pyroxenite               | Tonne | 4,27,433         | 4,80,829         | 6,69,743         |
| Quartzite and Other materials       | Tonne | 1,03,043         | 63,019           | 66,364           |
| Ferro Manganese - High Carbon Lumps | Tonne | 21,330           | 15,822           | 14,343           |
| Ferro Manganese - Medium Carbon     | Tonne | 3,123            | 6,569            | 11,650           |
| Zinc & Zinc Alloys                  | Tonne | 15,738           | 15,477           | 14,446           |
| <b>Total Crude Steel Production</b> | Tonne | <b>71,32,157</b> | <b>81,30,153</b> | <b>91,55,087</b> |
| <b>Total Saleable Steel</b>         | Tonne | <b>69,69,617</b> | <b>79,41,247</b> | <b>89,30,835</b> |

### 2. Water Consumption, Recycling & Energy Consumption:

| Parameters                         | Unit                | 2011-12  | 2012-13  | 2013-14  |
|------------------------------------|---------------------|----------|----------|----------|
| Specific Water Consumption         | m <sup>3</sup> /tcs | 5.83     | 5.92     | 5.48     |
| Water Consumed from Industrial Use | m <sup>3</sup> /day | 1,13,977 | 1,31,925 | 1,39,826 |
| Effluent Recycled                  | m <sup>3</sup> /day | 19,333   | 13,121   | 17,601   |
| Water Consumed from Domestic Use   | m <sup>3</sup> /day | 1,81,693 | 1,82,282 | 1,89,874 |
| Specific Energy Consumption        | Gcal/tcs            | 6.09     | 6.08     | 6.02     |

### 3. Solid Waste Generation and Utilization:

| Parameters                    | Unit  | 2011-12   | 2012-13   | 2013-14   |
|-------------------------------|-------|-----------|-----------|-----------|
| BF Slag Generated             | Tonne | 24,86,013 | 27,82,041 | 32,14,518 |
| BF Slag Utilized              | Tonne | 22,41,599 | 26,33,446 | 29,44,810 |
| LD Slag Generated             | Tonne | 12,93,243 | 15,70,371 | 16,74,135 |
| LD Slag Utilized              | Tonne | 4,12,506  | 8,85,333  | 14,60,893 |
| Mill Sludge & Scale Generated | Tonne | 1,07,442  | 1,22,142  | 1,48,202  |
| Mill Sludge & Scale Utilized  | Tonne | 81,434    | 99,029    | 1,08,912  |
| Process Dust Generated        | Tonne | 1,15,526  | 1,69,497  | 1,92,801  |
| Process Dust Utilized         | Tonne | 1,22,321  | 1,64,715  | 1,73,054  |
| BF Sludge Generated           | Tonne | 77,125    | 83,142    | 84,948    |
| BF Sludge Utilized            | Tonne | 71,369    | 66,749    | 96,830    |
| Iron Oxide Generated          | Tonne | 7,652     | 5,968     | 7,805     |
| Iron Oxide Utilized           | Tonne | 7,709     | 6,033     | 7,700     |
| Coal Tar Sludge Generated     | Tonne | 3,849     | 3,964     | 4,968     |
| Coal Tar Sludge Utilized      | Tonne | 3,849     | 3,958     | 4,968     |
| BOT Sludge Generated          | Tonne | 276       | 316       | 811       |
| BOT Sludge Utilized           | Tonne | 276       | 316       | 811       |

### 4. Plantation, Environmental Expenditure & Occupational Health:

| Parameters                                | Unit  | 2011-12 | 2012-13 | 2013-14 |
|---|-------|---------|---------|---------|
| Plantation                                | Nos   | 15,630  | 45,929  | 39,276  |
| Cumulative Environmental Expenditure      | Lakhs | 34,345  | 37,544  | 39,729  |
| Occupational Health Surveillance/Check-up | Nos.  | 15,013  | 16,144  | 16,643  |
| No. of occupational diseases reported     | Nos   | 0       | 0       | 0       |

5. Month Wise Quality of Iron Ore (2011-12 to 2013-14):

2011-12

| Parameters                     | Units | Apr-11 | May-11 | Jun-11 | Jul-11 | Aug-11 | Sep-11 | Oct-11 | Nov-11 | Dec-11 | Jan-12 | Feb-12 | Mar-12 | 2011-12 |
|--------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>Noamundi-Blended fines</b>  |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 66.05  | 65.90  | 65.88  | 65.93  | 65.89  | 65.85  | 65.88  | 65.61  | 65.80  | 65.77  | 65.54  | 65.64  | 65.81   |
| SiO <sub>2</sub>               | %     | 1.23   | 1.23   | 1.32   | 1.28   | 1.40   | 1.43   | 1.14   | 1.15   | 1.23   | 1.35   | 1.61   | 1.42   | 1.31    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 1.99   | 2.00   | 1.99   | 1.98   | 1.99   | 1.99   | 2.01   | 2.07   | 2.03   | 2.08   | 2.06   | 2.10   | 2.03    |
| Phos.                          | %     | 0.09   | 0.09   | 0.09   | 0.10   | 0.09   | 0.10   | 0.11   | 0.12   | 0.11   | 0.10   | 0.09   | 0.10   | 0.10    |
| <b>Joda-Classifier fines</b>   |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 66.08  | 65.79  | 65.86  | 65.96  | 65.93  | 65.74  | 65.76  | 65.86  | 65.84  | 65.78  | 65.71  | 65.78  | 65.84   |
| SiO <sub>2</sub>               | %     | 1.54   | 1.47   | 1.55   | 1.60   | 1.76   | 1.81   | 1.79   | 1.56   | 1.58   | 1.61   | 1.70   | 1.61   | 1.63    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 1.99   | 1.99   | 1.99   | 1.99   | 1.97   | 2.00   | 1.99   | 1.98   | 1.99   | 1.99   | 2.00   | 1.99   | 1.99    |
| Phos.                          | %     | 0.08   | 0.07   | 0.07   | 0.06   | 0.05   | 0.06   | 0.06   | 0.07   | 0.07   | 0.07   | 0.06   | 0.06   | 0.07    |

2012-13

| Parameters                     | Units | Apr-12 | May-12 | Jun-12 | Jul-12 | Aug-12 | Sep-12 | Oct-12 | Nov-12 | Dec-12 | Jan-13 | Feb-13 | Mar-13 | 2012-13 |
|--------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>Noamundi-Blended fines</b>  |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 65.67  | 65.36  | 65.65  | 65.23  | 64.99  | 65.30  | 65.24  | 65.13  | 65.54  | 65.72  | 65.79  | 65.47  | 65.42   |
| SiO <sub>2</sub>               | %     | 1.37   | 1.68   | 1.41   | 1.93   | 2.09   | 1.67   | 1.89   | 1.81   | 1.38   | 1.42   | 1.41   | 1.65   | 1.64    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 2.06   | 2.11   | 2.06   | 2.11   | 2.34   | 2.20   | 2.25   | 2.26   | 2.23   | 2.17   | 2.12   | 2.12   | 2.17    |
| Phos.                          | %     | 0.10   | 0.10   | 0.10   | 0.09   | 0.10   | 0.09   | 0.09   | 0.10   | 0.09   | 0.09   | 0.08   | 0.09   | 0.09    |
| <b>Joda-Classifier fines</b>   |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 65.63  | 65.73  | 65.55  | 65.35  | 65.50  | 65.64  | 65.71  | 65.64  | 65.50  | 65.78  | 65.41  | 65.67  | 65.59   |
| SiO <sub>2</sub>               | %     | 1.80   | 1.82   | 1.87   | 2.05   | 2.06   | 1.88   | 1.87   | 1.89   | 1.95   | 2.17   | 2.02   | 1.80   | 1.93    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 1.98   | 1.95   | 1.97   | 1.99   | 1.87   | 1.86   | 1.73   | 1.78   | 1.92   | 1.59   | 1.88   | 1.92   | 1.87    |
| Phos.                          | %     | 0.07   | 0.07   | 0.07   | 0.07   | 0.07   | 0.06   | 0.07   | 0.07   | 0.07   | 0.06   | 0.07   | 0.07   | 0.07    |

2013-14

| Parameters                     | Units | Apr-13 | May-13 | Jun-13 | Jul-13 | Aug-13 | Sep-13 | Oct-13 | Nov-13 | Dec-13 | Jan-14 | Feb-14 | Mar-14 | 2013-14 |
|--------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>Noamundi-Blended fines</b>  |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 65.10  | 65.06  | 65.11  | 65.02  | 64.96  | 64.80  | 65.00  | 64.94  | 64.73  | 64.82  | 65.05  | 64.79  | 64.95   |
| SiO <sub>2</sub>               | %     | 1.89   | 2.06   | 1.73   | 1.81   | 1.79   | 2.05   | 1.64   | 1.92   | 2.02   | 2.04   | 1.66   | 2.08   | 1.89    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 2.27   | 2.21   | 2.27   | 2.26   | 2.25   | 2.21   | 2.23   | 2.22   | 2.31   | 2.29   | 2.29   | 2.37   | 2.26    |
| Phos.                          | %     | 0.08   | 0.08   | 0.10   | 0.10   | 0.09   | 0.09   | 0.09   | 0.09   | 0.09   | 0.08   | 0.09   | 0.07   | 0.09    |
| <b>Joda-Classifier fines</b>   |       |        |        |        |        |        |        |        |        |        |        |        |        |         |
| Total Fe                       | %     | 64.73  | 64.82  | 64.86  | 65.08  | 64.63  | 64.47  | 64.74  | 65.24  | 64.79  | 65.12  | 64.99  | 65.11  | 64.88   |
| SiO <sub>2</sub>               | %     | 2.25   | 1.97   | 2.06   | 1.89   | 2.18   | 2.58   | 2.47   | 2.02   | 2.30   | 2.00   | 2.28   | 1.98   | 2.17    |
| Al <sub>2</sub> O <sub>3</sub> | %     | 2.07   | 2.07   | 2.16   | 2.11   | 2.20   | 2.12   | 2.01   | 1.91   | 2.04   | 1.95   | 1.90   | 1.96   | 2.04    |
| Phos.                          | %     | 0.07   | 0.07   | 0.07   | 0.08   | 0.08   | 0.07   | 0.06   | 0.06   | 0.07   | 0.07   | 0.08   | 0.09   | 0.07    |

**6. Data on Accidents/Fatality:**

| Parameter                  | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | Location         | Major Primary Reasons   | Measures / action taken   |   |  |
|----------------------------|---------|---------|---------|---------|---------|------------------|---|---|---|--|
|                            |         |         |         |         |         |                  |   | Preventive measures currently in place  | Preventive measures proposed due to accidents   | Action Taken   |
| Reportable accidents (LTI) | 71      | 65      | 80      | 97      | 103     | Jamshedpur Works | <ul style="list-style-type: none"> <li>• Slip/Trip/Fall</li> <li>• Fire/Explosion</li> <li>• Material handling</li> <li>• Burn Injury</li> <li>• Road Incident</li> <li>• Skidding</li> <li>• Hit or Press by Object</li> <li>• Collision/Dashing</li> <li>• Electrical Flash</li> <li>• Hydraulic / Pneumatic</li> <li>• Fall from height</li> <li>• Medical Ailment</li> <li>• Cut by Sharp edge</li> <li>• Energy isolation</li> <li>• Equipment machinery damage</li> </ul> | <ol style="list-style-type: none"> <li>1. Model work place system to improve work environment and reduce the slip/ trip/ fall cases</li> <li>2. Elimination of man-machine intervention in material handling process.</li> <li>3. Free bus services increased to commute mainly contract workers within the plant.</li> <li>4. Fire and Gas audit system.</li> <li>5. Deployment of speed monitoring cameras.</li> <li>6. Safety Excellence centre &amp; specialized training centre developed with NTTF to impart job specific training to contract employees.</li> <li>7. Blind spot elimination of Heavy vehicles.</li> <li>8. Fatality Risk control Program for identifying unsafe conditions/acts having fatality potential.</li> <li>9. Safety training to regular &amp; contract employees.</li> </ol> | <ol style="list-style-type: none"> <li>1. Road Safety Audit to improve behavioural aspect of road users and also imparting them defensive driving training.</li> <li>2. Focused safety audit &amp; observation on Slip / Trip/Fall hazard areas.</li> <li>3. Training and counselling to employees to improve safety culture.</li> <li>4. Pre start up safety review introduced in MSDs.</li> </ol> | <ol style="list-style-type: none"> <li>1. Rescued the injured persons to the First Aid Station for immediate medical treatment.</li> <li>2. Containment action taken to prevent reoccurrence</li> <li>3. Investigation team formed to find out the root causes.</li> </ol> |
| Fatal accidents            | 1       | 2       | 5       | 3       | 5       | Jamshedpur Works | <ul style="list-style-type: none"> <li>• Run Over</li> <li>• Hit or Press by Object</li> <li>• Collapse of material from side wall of excavated pit</li> <li>• Fire/Explosion</li> <li>• Heat Burn</li> <li>• Gas Exposure / Asphyxiation</li> <li>• Fall from height</li> <li>• Rail</li> </ul>  | <ol style="list-style-type: none"> <li>7. Blind spot elimination of Heavy vehicles.</li> <li>8. Fatality Risk control Program for identifying unsafe conditions/acts having fatality potential.</li> <li>9. Safety training to regular &amp; contract employees.</li> </ol>   | <ol style="list-style-type: none"> <li>3. Training and counselling to employees to improve safety culture.</li> <li>4. Pre start up safety review introduced in MSDs.</li> </ol>  | <ol style="list-style-type: none"> <li>3. Investigation team formed to find out the root causes.</li> </ol>  |

7. Six Monthly Monitoring Data (April 2014 to Sep 2014):

a. Stack Particulate Matter Emission Monitoring Report (Manual & Online Monitoring)

| Stack Location           | Norm*<br>(mg/Nm <sup>3</sup> ) | Manual Monitoring data (mg/Nm <sup>3</sup> ) |        |        |        |        |        | Online Monitoring data (mg/Nm <sup>3</sup> ) |        |        |        |        |        |
|--------------------------|--------------------------------|--|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|
|                          |                                | Apr-14                                       | May-14 | Jun-14 | Jul-14 | Aug-14 | Sep-14 | Apr-14                                       | May-14 | Jun-14 | Jul-14 | Aug-14 | Sep-14 |
| Battery#3                | 50                             | -  | 28     | -      | -      | -      | -      | 48   | 44     | 45     | 46     | 34     | 37     |
| Battery#5                | 50                             | -  | 46     | 38     | -      | -      | -      | 32   | 45     | 34     | 33     | 34     | 30     |
| Battery#6                | 50                             | 49   | 21     | 34     | -      | -      | -      | 33   | 35     | 28     | 24     | 22     | 33     |
| Battery#7                | 50                             | 33   | -      | 17     | -      | -      | -      | 23   | 33     | 35     | 39     | 30     | 37     |
| Battery#8                | 50                             | 20   | 27     | 24     | 28     | 39     | -      | 46   | 27     | 37     | 44     | 47     | 38     |
| Battery#9                | 50                             | 14   | 22     | -      | -      | 18     | -      | 32   | 48     | 39     | 43     | 35     | 27     |
| Battery#10               | 50                             | 31   | -      | -      | 25     | -      | -      | -  | -      | -      | -      | 49     | 41     |
| Battery#10 Dedusting     | 50                             | -  | -      | -      | -      | -      | 3      | -  | -      | -      | -      | -      | -      |
| SP#1 waste gas           | 150                            | 21   | 40     | 34     | -      | -      | -      | -  | -      | 63     | 30     | 28     | 34     |
| SP#1 Dedusting           | 150                            | 17   | 125    | 46     | -      | 25     | -      | 69   | 56     | 42     | 50     | 34     | 43     |
| SP#2 waste gas           | 150                            | -  | 63     | 76     | -      | -      | -      | 50   | 51     | 54     | 58     | 34     | 55     |
| SP#2 Dedusting           | 150                            | -  | -      | -      | -      | -      | -      | 137  | 140    | 83     | 43     | 55     | 63     |
| SP#3 Combined            | 150                            | -  | -      | -      | 68     | -      | 93     | 140  | 118    | 78     | 134    | 99     | 128    |
| SP#4 Combined            | 150                            | -  | -      | -      | -      | -      | -      | 134  | 114    | 141    | 136    | 148    | 83     |
| F Bl.Furnace Cast House  | 100                            | -  | -      | -      | -      | 18     | -      | -  | -      | -      | -      | -      | -      |
| F Bl.Furnace Stock House | 100                            | -  | 17     | -      | -      | 24     | 17     | 42   | 53     | 42     | 45     | 38     | 37     |
| G Bl. Furnace Cast House | 100                            | 50   | 17     | -      | 15     | -      | 9      | 9  | 10     | 21     | 7      | 9      | 7      |
| G Bl.Furnace Stock House | 100                            | -  | -      | 92     | -      | -      | 59     | 94   | 54     | 81     | 79     | 64     | 65     |
| H Bl.Furnace Cast House  | 100                            | 13   | -      | 8      | -      | -      | 17     | 19   | 10     | 4      | 3      | 4      | 6      |
| H Bl.Furnace Stock House | 100                            | 19   | 24     | 10     | -      | -      | -      | 19   | 13     | 12     | 9      | 12     | 11     |
| I Bl.Furnace Cast House  | 100                            | 8  | 14     | -      | 6      | -      | 13     | 3  | 2      | 3      | 2      | 5      | 2      |
| I Bl.Furnace Stock House | 100                            | 23   | 13     | 26     | 21     | 19     | 54     | 5  | 6      | 6      | 6      | 8      | 8      |
| LD #1 Sec. Emission      | 100                            | 31   | 11     | -      | 12     | -      | -      | -  | -      | -      | -      | -      | -      |
| LD # 1 LF # 1            | 150                            | -  | 25     | 10     | -      | -      | 36     | -  | -      | -      | -      | -      | -      |
| LD # 1 LF # 2            | 150                            | -  | 32     | -      | -      | -      | -      | -  | -      | -      | -      | -      | -      |
| LD # 1 LF # 3            | 150                            | 24   | 31     | 20     | -      | -      | 13     | -  | -      | -      | -      | -      | -      |
| LD # 2 Sec. Emission 1   | 100                            | 32   | 43     | 24     | -      | -      | 29     | 30   | 62     | 50     | 21     | 67     | 27     |
| LD # 2 Sec. Emission 2   | 100                            | -  | 36     | 18     | -      | -      | -      | 38   | 69     | 49     | 15     | 41     | 38     |
| LD#2 LF# 1               | 150                            | 23   | 16     | -      | -      | -      | 3      | -  | -      | -      | -      | -      | -      |



|                         |     |    |    |    |    |    |    |   |   |   |   |   |   |
|-------------------------|-----|----|----|----|----|----|----|---|---|---|---|---|---|
| CRM BAF                 | 150 | 22 | 5  | -  | 16 | 23 | 23 | - | - | - | - | - | - |
| CRM ARP                 | 150 | 40 | -  | -  | -  | -  | -  | - | - | - | - | - | - |
| CRM ECL                 | 150 | -  | 6  | -  | -  | -  | -  | - | - | - | - | - | - |
| MM                      | 150 | -  | 38 | 50 | 34 | -  | -  | - | - | - | - | - | - |
| WRM                     | 150 | 40 | 37 | -  | 38 | -  | 30 | - | - | - | - | - | - |
| NBM                     | 150 | -  | 32 | -  | 40 | -  | -  | - | - | - | - | - | - |
| HSM Reheating Furnace-1 | 150 | -  | -  | 76 | -  | -  | 32 | - | - | - | - | - | - |
| HSM Reheating Furnace-2 | 150 | -  | -  | 51 | -  | -  | 20 | - | - | - | - | - | - |

Note - Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification no. GSR 277 ( E) . Dated March 31, 2012







**5. Aug 2014**

| Sampling Area | Sample Location                 | Parameters       |                   |                 |                 |      |                 |                |      |      |      |                               |      |
|---------------|---------------------------------|------------------|-------------------|-----------------|-----------------|------|-----------------|----------------|------|------|------|-------------------------------|------|
|               |                                 | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub> | NO <sub>x</sub> | CO   | NH <sub>3</sub> | O <sub>3</sub> | Pb   | As   | Ni   | C <sub>6</sub> H <sub>6</sub> | BaP  |
| Inside Works  | West Plant First Air Centre     | 82               | 32                | 39              | 36              | 1010 | 34              | 98             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Cold Rolling Mill               | 65               | 30                | 40              | 41              | 890  | 28              | 84             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Power House # 3 Gate            | 79               | 48                | 36              | 34              | 550  | 26              | 76             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Power House # 6 Gate            | 82               | 29                | 48              | 45              | 670  | 41              | 90             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
| Outside Works | River Pump House                | 70               | -                 | 22              | 31              | -    | -               | -              | -    | -    | -    | -                             | -    |
|               | Southern Sewage Treatment Plant | 81               | -                 | 16              | 29              | -    | -               | -              | -    | -    | -    | -                             | -    |
|               | Golmuri                         | 69               | -                 | 18              | 28              | -    | -               | -              | -    | -    | -    | -                             | -    |
|               | Burmamines                      | 78               | -                 | 20              | 26              | -    | -               | -              | -    | -    | -    | -                             | -    |

**6. Sep 2014**

| Sampling Area | Sample Location                 | Parameters       |                   |                 |                 |      |                 |                |      |      |      |                               |      |
|---------------|---------------------------------|------------------|-------------------|-----------------|-----------------|------|-----------------|----------------|------|------|------|-------------------------------|------|
|               |                                 | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub> | NO <sub>x</sub> | CO   | NH <sub>3</sub> | O <sub>3</sub> | Pb   | As   | Ni   | C <sub>6</sub> H <sub>6</sub> | BaP  |
| Inside Works  | West Plant First Air Centre     | 70               | 30                | 41              | 45              | 1184 | 37              | 81             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Cold Rolling Mill               | 76               | 41                | 40              | 44              | 1054 | 30              | 76             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Power House # 3 Gate            | 69               | 38                | 41              | 48              | 410  | 24              | 94             | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Power House # 6 Gate            | 72               | 33                | 43              | 51              | 820  | 39              | 102            | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
| Outside Works | River Pump House                | 78               | 57                | 25              | 29              | 1205 | 42              | 117            | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Southern Sewage Treatment Plant | 76               | 49                | 21              | 27              | 1157 | 51              | 123            | <0.5 | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Golmuri                         | 74               | 61                | 15              | 21              | 1310 | 38              | 95             | 0.6  | <1.0 | <1.0 | <1.0                          | <0.5 |
|               | Burmamines                      | 82               | 69                | 26              | 32              | 1201 | 47              | 105            | 0.8  | <1.0 | <1.0 | <1.0                          | <0.5 |

- : No Data/could not monitored

Note: Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCI-L dated 18th November 2009.

**c. Effluent Quality Monitoring Report**

| Sample Location | Parameter                     | UoM        | Apr-14     |            |            | May-14     |            |            | Jun-14     |            |            | Jul-14     |            |            | Aug-14     |            |            | Sep-14     |            |            |
|-----------------|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                 |                               |            | Max        | Min        | Avg        | Max        | Min        | Avg        | Max        | Min        | Avg        | Max        | Min        | Avg        | Max        | Min        | Avg        | Max        | Min        | Avg        |
| Susun Gharia    | Ammonical Nitrogen (as N )    | mg/L       | 39         | 10         | 23         | 28.0       | 8.4        | 19.3       | 31         | 7          | 18         | 28         | 11         | 21         | 38         | 14         | 23         | 23         | 11         | 18         |
|                 | Free Cyanide (as CN')         | mg/L       | 0.17       | 0.11       | 0.13       | 0.15       | 0.10       | 0.12       | 0.15       | 0.10       | 0.12       | 0.14       | 0.10       | 0.12       | 0.14       | 0.10       | 0.12       | 0.14       | 0.10       | 0.12       |
|                 | Oil & Grease                  | mg/L       | 3.0        | 0.4        | 1.5        | 3.0        | 1.2        | 2.1        | 3.2        | 1.2        | 1.8        | 2.6        | 1.0        | 1.8        | 2.4        | 1.0        | 1.5        | 2.2        | 1.0        | 1.5        |
|                 | Total Suspended solids        | mg/L       | 71         | 10         | 47         | 68         | 13         | 45         | 57         | 22         | 40         | 45         | 20         | 31         | 51         | 21         | 35         | 58         | 28         | 41         |
|                 | Chemical Oxygen Demand, COD   | mg/L       | 67         | 19         | 38         | 75         | 25         | 44         | 58         | 26         | 40         | 84         | 62         | 71         | 57         | 21         | 40         | 42         | 15         | 25         |
|                 | Biological Oxygen Demand, BOD | mg/L       | 5          | 4          | 5          | 16         | 4          | 10         | 14         | 10         | 13         | 16         | 10         | 13         | 11         | 5          | 7          | 10         | 6          | 8          |
|                 | pH                            | -          | 8.3        | 7.9        | 8.1        | 8.4        | 7.9        | 8.2        | 8.3        | 7.9        | 8.1        | 8.20       | 7.80       | 8.08       | 8.3        | 7.7        | 8.1        | 8.2        | 7.8        | 8.1        |
| Garam Nala      | <b>Parameter</b>              | <b>UoM</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> |
|                 | Oil & Grease                  | mg/L       | 1.0        | 0.4        | 0.7        | 1.2        | 0.4        | 0.7        | 1.2        | 0.4        | 0.7        | 1.6        | 0.4        | 0.9        | 1.2        | 0.4        | 0.8        | 1.2        | 0.4        | 0.8        |
|                 | Total Suspended solids        | mg/L       | 37         | 10         | 19         | 49         | 9          | 25         | 32         | 4          | 17         | 36         | 13         | 26         | 30         | 10         | 19         | 30         | 10         | 19         |
|                 | Chemical Oxygen Demand, COD   | mg/L       | 16         | 9          | 12         | 14         | 10         | 12         | 15         | 6          | 11         | 26         | 10         | 16         | 22         | 10         | 18         | 22         | 10         | 18         |
|                 | Biological Oxygen Demand, BOD | mg/L       | 16         | 12         | 14         | 14         | 2          | 7          | 5          | 2          | 3          | 5          | 3          | 3          | 12         | 3          | 8          | 12         | 3          | 8          |
|                 | pH                            | mg/L       | 8.3        | 7.4        | 8.0        | 8.4        | 7.5        | 8.1        | 8.3        | 7.1        | 7.8        | 8.15       | 7.58       | 7.90       | 8.2        | 7.2        | 7.9        | 8.2        | 7.2        | 7.9        |
| Ram Mandir Nala | <b>Parameter</b>              | <b>UoM</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> |
|                 | Oil & Grease                  | mg/L       | 1.8        | 0.6        | 0.8        | 1.8        | 0.8        | 1.1        | 1.8        | 0.6        | 1.1        | 1.8        | 0.6        | 1.2        | 1.4        | 0.6        | 0.9        | 1.8        | 0.4        | 1.0        |
|                 | Total Suspended solids        | mg/L       | 68         | 10         | 32         | 43         | 18         | 27         | 41         | 12         | 26         | 55         | 22         | 35         | 28         | 15         | 22         | 45         | 19         | 29         |
|                 | Chemical Oxygen Demand, COD   | mg/L       | 19         | 5          | 12         | 34         | 5          | 20         | 49         | 26         | 35         | 50         | 27         | 36         | 16         | 11         | 13         | 24         | 16         | 20         |
|                 | Biological Oxygen Demand, BOD | mg/L       | 6          | 3          | 4          | 8          | 6          | 7          | 8          | 5          | 6          | 6          | 4          | 5          | 4          | 2          | 3          | 7          | 4          | 5          |
|                 | pH                            | mg/L       | 8.4        | 7.5        | 7.8        | 8.4        | 7.5        | 8.1        | 8.2        | 7.1        | 7.9        | 8.28       | 7.65       | 8.09       | 8.2        | 7.4        | 7.9        | 8.2        | 7.5        | 8.0        |
| HSM Drain       | <b>Parameter</b>              | <b>UoM</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Avg</b> |
|                 | Oil & Grease                  | mg/L       | 4.0        | 1.2        | 2.0        | 2.8        | 1.2        | 2.2        | 3.2        | 1.2        | 2.2        | 3.4        | 1.6        | 2.6        | 3.6        | 2.0        | 2.8        | 3.2        | 1.6        | 2.3        |
|                 | Total Suspended solids        | mg/L       | 89         | 24         | 44         | 74         | 26         | 47         | 55         | 23         | 39         | 65         | 25         | 45         | 55         | 26         | 44         | 51         | 20         | 39         |
|                 | Chemical Oxygen Demand, COD   | mg/L       | 94         | 29         | 58         | 99         | 37         | 75         | 85         | 30         | 54         | 74         | 54         | 63         | 65         | 32         | 47         | 17         | 10         | 13         |
|                 | Biological Oxygen Demand, BOD | mg/L       | 15         | 1          | 8          | 37         | 14         | 23         | 21         | 15         | 18         | 13         | 9          | 11         | 10         | 5          | 7          | 6          | 4          | 5          |
|                 | pH                            | mg/L       | 8.2        | 7.4        | 8.0        | 8.4        | 7.5        | 8.0        | 8.3        | 7.8        | 8.1        | 8.21       | 7.60       | 8.01       | 8.2        | 7.4        | 7.9        | 8.3        | 7.9        | 8.1        |

Note: Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

d. Noise Level Monitoring Report

| Sl. No.   | Area                                    | Apr-14   |            | May-14   |            | Jun-14   |            | Jul-14   |            | Aug-14   |            | Sep-14   |            |
|-----------|---|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|
|           |   | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time |
| <b>A)</b> | <b>SILENCE ZONE</b>                     |          |            |          |            |          |            |          |            |          |            |          |            |
| 1         | TMH (Near Status)                       | 66.3     | 60.4       | 44.6     | 33.1       | 66.2     | 61.9       | 68.3     | 60.2       | 44.0     | 41.0       | 55.2     | 54.1       |
| 2         | JUSCO School Kadma                      | 64.7     | 58.1       | 46.2     | 26.7       | 67.6     | 67.6       | 76.7     | 70.1       | 62.0     | 57.3       | 71.6     | 60.3       |
| 3         | Kerala Public School Bistupur           | 71.1     | 61.2       | 43.5     | 31.2       | 68.5     | 64.2       | 74.2     | 65.1       | 55.0     | 49.2       | 54.2     | 50.3       |
| 4         | South Park School Bistupur              | 68.5     | 54.2       | 40.5     | 21.1       | 63.6     | 59.8       | 71.2     | 54.1       | 58.0     | 47.5       | 58.7     | 51.1       |
| 5         | Old Court Area (Jubilee Park)           | 75.7     | 68.1       | 48.2     | 23.4       | 77.2     | 75.3       | 78.9     | 53.2       | 60.0     | 52.7       | 70.2     | 66.2       |
| <b>B)</b> | <b>RESIDENTIAL ZONE</b>                 |          |            |          |            |          |            |          |            |          |            |          |            |
| 1         | Circuit House Area (North)              | 70.3     | 55.2       | 50.4     | 40.1       | 64.2     | 60.8       | 69.5     | 61.8       | 57.0     | 48.7       | 65.7     | 52.1       |
| 2         | B.H. Area                               | 68.2     | 48.9       | 46.8     | 26.4       | 62.7     | 61.2       | 71.5     | 66.2       | 68.3     | 54.5       | 71.2     | 60.4       |
| 3         | Farm Area                               | 64.7     | 57.2       | 49.1     | 32.5       | 63.4     | 60.1       | 73.2     | 54.1       | 66.8     | 52.3       | 67.8     | 56.2       |
| 4         | Baridih Basti                           | 66.2     | 56.4       | 51.8     | 41.6       | 70.3     | 65.2       | 69.1     | 62.7       | 70.0     | 55.6       | 69.1     | 55.4       |
| 5         | Carriage Colony Burma Mines             | 69.4     | 54.3       | 52.4     | 40.3       | 69.8     | 63.9       | 70.3     | 58.4       | 68.7     | 57.4       | 68.6     | 57.2       |
| 6         | Agrico Colony                           | 71.2     | 59.7       | 49.9     | 39.8       | 70.1     | 66.7       | 74.5     | 64.3       | 67.6     | 53.1       | 65.9     | 50.3       |
| 7         | South Park                              | 70.1     | 66.2       | 52       | 36.4       | 64.3     | 58.5       | 73.7     | 52.4       | 66.9     | 56.5       | 68.7     | 55.2       |
| <b>C.</b> | <b>COMMERCIAL ZONE</b>                  |          |            |          |            |          |            |          |            |          |            |          |            |
| 1         | Sakchi Market                           | 79.3     | 61.5       | 61.8     | 50.1       | 81.3     | 78.3       | 78.1     | 72.1       | 75.7     | 63.2       | 80.8     | 71.4       |
| 2         | Golmuri Market                          | 74.1     | 59.2       | 60.8     | 49.1       | 76.2     | 70.5       | 76.2     | 63.2       | 73.4     | 66.3       | 69.3     | 53.2       |
| 3         | Burma Mines Market                      | 70.8     | 58.1       | 61       | 43.5       | 72.8     | 68.7       | 73.1     | 62.4       | 74.6     | 64.1       | 72.7     | 60.8       |
| 4         | Apna Bazar Bistupur                     | 72.1     | 60.2       | 59.8     | 50.7       | 79.5     | 71.4       | 74.6     | 62.1       | 67.1     | 56.5       | 68.3     | 54.2       |
| 5         | Rq Road Bistupur (Behind Nalanda Hotel) | 75.8     | 57.3       | 63.9     | 46.2       | 73.7     | 69.8       | 70.3     | 61.9       | 69.7     | 58.3       | 70.6     | 50.7       |
| <b>D)</b> | <b>INDUSTRIAL ZONE</b>                  |          |            |          |            |          |            |          |            |          |            |          |            |
| 1         | EAST SIDE                               | 70.5     | 60.1       | 62.5     | 60.0       | 66.1     | 65.9       | 71.2     | 66.4       | 68.6     | 73.5       | 75.9     | 65.3       |
| 2         | WEST SIDE                               | 69.5     | 49.5       | 68.9     | 66.8       | 60.4     | 69.8       | 69.5     | 58.2       | 67.4     | 67.2       | 77.4     | 61.8       |
| 3         | NORTH                                   | 72.3     | 58.8       | 64.6     | 70.9       | 61.4     | 78.5       | 65.3     | 50.4       | 67.5     | 78.7       | 79.1     | 70.2       |
| 4         | SOUTH                                   | 63.5     | 42.3       | 68.9     | 59.1       | 54.7     | 62.3       | 64.7     | 54.2       | 69.8     | 65.2       | 73.8     | 62.5       |
| 5         | NORTH EAST                              | 65.2     | 48.7       | 65.4     | 70.2       | 60.5     | 73.5       | 68.4     | 62.1       | 71.5     | 74.8       | 78.2     | 70.3       |
| 6         | NORTH WEST                              | 69.7     | 55.4       | 68.5     | 54.8       | 49.9     | 63.7       | 71.0     | 60.6       | 58.1     | 50.3       | 58.1     | 49.6       |
| 7         | SOUTH EAST                              | 66.4     | 50.4       | 70.1     | 57.8       | 55.4     | 67.9       | 73.1     | 62.2       | 55.3     | 59.2       | 69.3     | 55.6       |
| 8         | SOUTH WEST                              | 63.2     | 47.9       | 63.4     | 61.7       | 58.7     | 59.1       | 68.3     | 56.5       | 65.2     | 68.7       | 78.9     | 62.7       |

Note: Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000