



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY DRAFT - COMPLIANCE SUMMARY REPORT



Date 9/24/24

Plant Wheelabrator North Andover

NOTE: Emission & Process results may change after Startup, Shutdown, Malfunction data validation

Unit Unit 1  
Source Outlet

| Date      | Hour | On-Line Minutes | O2            |        | NOx             |        | SO2             |        |                |        | CO      |        |                 | Carbon Feed |            | FF Temp (deg F) |             | Steam KLbs/Hr |           |            |           |
|-----------|------|-----------------|---------------|--------|-----------------|--------|-----------------|--------|----------------|--------|---------|--------|-----------------|-------------|------------|-----------------|-------------|---------------|-----------|------------|-----------|
|           |      |                 | Out Vol % Dry | Status | Outlet ppm 7%O2 | Status | Outlet ppm 7%O2 | Status | Inlet ppm 7%O2 | Status | Removal | Status | Outlet ppm 7%O2 | Status      | 4 Hr Block | Status          | Lbs/Hr Avg. | 8 Hr Block    | 1 Hr Avg. | 4 Hr Block | 1 Hr Avg. |
| 9/24/2024 | 0    | 58              | 11.1          |        | 142             |        | 21              |        | 42             |        | 51      |        | 2               |             |            | 13              |             | 309           |           | 167.0      |           |
| 9/24/2024 | 1    | 60              | 11.3          |        | 142             |        | 25              |        | 51             |        | 51      |        | 2               |             |            | 13              |             | 310           |           | 167.0      |           |
| 9/24/2024 | 2    | 60              | 11.4          |        | 140             |        | 17              |        | 38             |        | 55      |        | 2               |             |            | 13              |             | 309           |           | 166.1      |           |
| 9/24/2024 | 3    | 60              | 11.0          |        | 142             |        | 21              |        | 39             |        | 48      |        | 1               | 2           |            | 13              |             | 309           | 310       | 170.2      | 167.6     |
| 9/24/2024 | 4    | 60              | 11.1          |        | 142             |        | 9               |        | 26             |        | 68      |        | 4               |             |            | 13              |             | 309           |           | 167.2      |           |
| 9/24/2024 | 5    | 60              | 11.2          |        | 138             |        | 17              |        | 20             |        | 17      |        | 3               |             |            | 13              |             | 309           |           | 166.5      |           |
| 9/24/2024 | 6    | 60              | 11.2          |        | 143             |        | 17              |        | 27             |        | 36      |        | 4               |             |            | 13              |             | 309           |           | 167.3      |           |
| 9/24/2024 | 7    | 60              | 11.1          |        | 139             |        | 17              |        | 27             |        | 36      |        | 3               | 4           |            | 13              | 13          | 308           | 309       | 169.5      | 167.6     |
| 9/24/2024 | 8    | 60              | 11.2          |        | 142             |        | 18              |        | 23             |        | 19      |        | 3               |             |            | 13              |             | 310           |           | 168.3      |           |
| 9/24/2024 | 9    | 60              | 11.2          |        | 142             |        | 18              |        | 28             |        | 37      |        | 3               |             |            | 13              |             | 310           |           | 167.8      |           |
| 9/24/2024 | 10   | 60              | 11.1          |        | 143             |        | 18              |        | 44             |        | 59      |        | 4               |             |            | 13              |             | 309           |           | 167.5      |           |
| 9/24/2024 | 11   | 60              | 11.0          |        | 137             |        | 16              |        | 28             |        | 43      |        | 4               | 4           |            | 13              |             | 309           | 309       | 167.8      | 167.8     |
| 9/24/2024 | 12   | 60              | 10.9          |        | 143             |        | 5               |        | 20             |        | 76      |        | 5               |             |            | 13              |             | 310           |           | 162.3      |           |
| 9/24/2024 | 13   | 60              | 11.1          |        | 142             |        | 17              |        | 26             |        | 36      |        | 3               |             |            | 13              |             | 310           |           | 167.8      |           |
| 9/24/2024 | 14   | 60              | 11.5          |        | 140             |        | 18              |        | 45             |        | 59      |        | 4               |             |            | 13              |             | 309           |           | 166.5      |           |
| 9/24/2024 | 15   | 60              | 11.3          |        | 141             |        | 18              |        | 55             |        | 68      |        | 4               | 4           |            | 15              | 13          | 309           | 310       | 165.7      | 165.6     |
| 9/24/2024 | 16   | 60              | 11.3          |        | 142             |        | 18              |        | 50             |        | 63      |        | 4               |             |            | 15              |             | 309           |           | 168.2      |           |
| 9/24/2024 | 17   | 60              | 11.4          |        | 142             |        | 16              |        | 53             |        | 69      |        | 3               |             |            | 14              |             | 309           |           | 167.3      |           |
| 9/24/2024 | 18   | 60              | 11.2          |        | 143             |        | 17              |        | 47             |        | 63      |        | 4               |             |            | 15              |             | 310           |           | 166.0      |           |
| 9/24/2024 | 19   | 60              | 11.4          |        | 138             |        | 18              |        | 47             |        | 61      |        | 2               | 3           |            | 13              |             | 309           | 309       | 167.5      | 167.2     |
| 9/24/2024 | 20   | 60              | 11.2          |        | 143             |        | 19              |        | 47             |        | 59      |        | 3               |             |            | 14              |             | 310           |           | 166.0      |           |
| 9/24/2024 | 21   | 60              | 11.2          |        | 144             |        | 26              |        | 57             |        | 54      |        | 3               |             |            | 15              |             | 309           |           | 168.5      |           |
| 9/24/2024 | 22   | 60              | 11.3          |        | 140             |        | 25              |        | 60             |        | 58      |        | 3               |             |            | 14              |             | 310           |           | 166.3      |           |
| 9/24/2024 | 23   | 60              | 11.2          |        | 140             |        | 25              |        | 70             |        | 64      |        | 3               | 3           |            | 16              | 14          | 309           | 310       | 168.4      | 167.3     |

|                                     |                           |                              |           |                             |                                 |                                   |                                |                                    |
|-------------------------------------|---------------------------|------------------------------|-----------|-----------------------------|---------------------------------|-----------------------------------|--------------------------------|------------------------------------|
| Average:<br>Geometric Mean Average: | 141                       | 17                           | <b>OR</b> | 54                          | see above                       | see above                         | see above                      | see above                          |
| Limit:                              | ≤ 150<br>24-HR Block Avg. | ≤ 29<br>24-HR Geometric Mean |           | ≥ 80%<br>Removal Efficiency | ≤ 69 ppmc<br>4-HR Block Average | ≥ 12 lb/hr<br>8-HR. Block Average | ≤ 345 °F<br>4-HR Block Average | ≤ 173 klb/hr<br>4-HR Block Average |

**Status Flags**

- I - Invalid
- B - Bad
- C - Calibration
- M - Maintenance
- F - Offline
- P - Purge
- T - Out of Control
- E - Excluded
- ^ - Startup
- \* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY DRAFT - COMPLIANCE SUMMARY REPORT



Date 9/24/24

Plant Wheelabrator North Andover

NOTE: Emission & Process results may change after Startup, Shutdown, Malfunction data validation

Unit Unit 2

Source Outlet

| Date      | Hour | On-Line Minutes | O2            |        | NOx             |        | SO2             |        |                |        |         | CO     |                 |        | Carbon Feed |        | FF Temp (deg F) |            | Steam KLbs/Hr |            |           |
|-----------|------|-----------------|---------------|--------|-----------------|--------|-----------------|--------|----------------|--------|---------|--------|-----------------|--------|-------------|--------|-----------------|------------|---------------|------------|-----------|
|           |      |                 | Out Vol % Dry | Status | Outlet ppm 7%O2 | Status | Outlet ppm 7%O2 | Status | Inlet ppm 7%O2 | Status | Removal | Status | Outlet ppm 7%O2 | Status | 4 Hr Block  | Status | Lbs/Hr Avg.     | 8 Hr Block | 1 Hr Avg.     | 4 Hr Block | 1 Hr Avg. |
| 9/24/2024 | 0    | 58              | 10.5          |        | 139             |        | 0               |        | 36             |        | 99      |        | 7               |        |             | 13     |                 | 310        |               | 167.1      |           |
| 9/24/2024 | 1    | 60              | 10.6          |        | 140             |        | 4               |        | 42             |        | 91      |        | 7               |        |             | 13     |                 | 310        |               | 166.4      |           |
| 9/24/2024 | 2    | 60              | 10.6          |        | 140             |        | 2               |        | 45             |        | 95      |        | 6               |        |             | 13     |                 | 310        |               | 167.3      |           |
| 9/24/2024 | 3    | 60              | 10.6          |        | 139             |        | 2               |        | 40             |        | 96      |        | 7               | 7      |             | 13     |                 | 310        | 310           | 168.2      | 167.3     |
| 9/24/2024 | 4    | 60              | 10.7          |        | 142             |        | 0               |        | 28             |        | 99      |        | 6               |        |             | 13     |                 | 310        |               | 166.7      |           |
| 9/24/2024 | 5    | 60              | 10.6          |        | 138             |        | 0               |        | 27             |        | 99      |        | 6               |        |             | 13     |                 | 309        |               | 166.4      |           |
| 9/24/2024 | 6    | 60              | 10.7          |        | 140             |        | 0               |        | 18             |        | 100     |        | 5               |        |             | 13     |                 | 311        |               | 167.6      |           |
| 9/24/2024 | 7    | 60              | 10.6          |        | 139             |        | 1               |        | 28             |        | 97      |        | 6               | 6      |             | 13     | 13              | 310        | 310           | 168.1      | 167.2     |
| 9/24/2024 | 8    | 60              | 10.7          |        | 140             |        | 1               |        | 27             |        | 97      |        | 6               |        |             | 13     |                 | 310        |               | 166.2      |           |
| 9/24/2024 | 9    | 60              | 10.6          |        | 140             |        | 1               |        | 22             |        | 94      |        | 6               |        |             | 13     |                 | 310        |               | 167.2      |           |
| 9/24/2024 | 10   | 60              | 10.4          |        | 139             |        | 0               |        | 18             |        | 99      |        | 7               |        |             | 13     |                 | 310        |               | 166.5      |           |
| 9/24/2024 | 11   | 60              | 10.6          |        | 139             |        | 0               |        | 22             |        | 100     |        | 6               | 6      |             | 13     |                 | 309        | 310           | 166.6      | 166.7     |
| 9/24/2024 | 12   | 60              | 10.2          |        | 139             |        | 0               |        | 27             |        | 100     |        | 6               |        |             | 12     |                 | 310        |               | 164.0      |           |
| 9/24/2024 | 13   | 60              | 10.1          |        | 142             |        | 2               |        | 51             |        | 96      |        | 6               |        |             | 13     |                 | 310        |               | 167.5      |           |
| 9/24/2024 | 14   | 60              | 10.5          |        | 138             |        | 4               |        | 56             |        | 93      |        | 6               |        |             | 13     |                 | 310        |               | 167.7      |           |
| 9/24/2024 | 15   | 60              | 10.8          |        | 141             |        | 7               |        | 71             |        | 90      |        | 6               | 6      |             | 14     | 13              | 310        | 310           | 167.6      | 166.7     |
| 9/24/2024 | 16   | 60              | 10.6          |        | 139             |        | 6               |        | 60             |        | 90      |        | 7               |        |             | 17     |                 | 310        |               | 166.8      |           |
| 9/24/2024 | 17   | 60              | 10.6          |        | 140             |        | 0               |        | 42             |        | 100     |        | 7               |        |             | 15     |                 | 310        |               | 167.8      |           |
| 9/24/2024 | 18   | 60              | 10.5          |        | 141             |        | 1               |        | 47             |        | 99      |        | 7               |        |             | 16     |                 | 310        |               | 167.3      |           |
| 9/24/2024 | 19   | 60              | 10.7          |        | 138             |        | 2               |        | 47             |        | 95      |        | 6               | 7      |             | 16     |                 | 309        | 310           | 166.0      | 167.0     |
| 9/24/2024 | 20   | 60              | 10.6          |        | 140             |        | 18              |        | 73             |        | 75      |        | 6               |        |             | 17     |                 | 310        |               | 167.3      |           |
| 9/24/2024 | 21   | 60              | 10.7          |        | 141             |        | 20              |        | 69             |        | 71      |        | 6               |        |             | 20     |                 | 310        |               | 167.1      |           |
| 9/24/2024 | 22   | 60              | 10.6          |        | 141             |        | 21              |        | 63             |        | 67      |        | 5               |        |             | 16     |                 | 310        |               | 168.1      |           |
| 9/24/2024 | 23   | 60              | 10.7          |        | 139             |        | 12              |        | 61             |        | 80      |        | 6               | 6      |             | 17     | 17              | 310        | 310           | 164.9      | 166.9     |

Average:  
Geometric Mean Average:

Limit:

|                              |                                    |
|------------------------------|------------------------------------|
| 140                          | 1                                  |
| ≤ 150<br>24-HR<br>Block Avg. | ≤ 29<br>24-HR<br>Geometric<br>Mean |

OR

|                                |
|--------------------------------|
| 98                             |
| ≥ 80%<br>Removal<br>Efficiency |

|                                       |
|---------------------------------------|
| see<br>above                          |
| ≤ 69 ppmc<br>4-HR<br>Block<br>Average |

|   |
|---|
| see<br>above                            |
| ≥ 12 lb/hr<br>8-HR.<br>Block<br>Average |

|                                      |
|--------------------------------------|
| see<br>above                         |
| ≤ 345 °F<br>4-HR<br>Block<br>Average |

|  |
|--|
| see<br>above                             |
| ≤ 173 klb/hr<br>4-HR<br>Block<br>Average |

**Status Flags**

- I - Invalid
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- C - Calibration
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- F - Offline
- P - Purge
- T - Out of Control
- E - Excluded
- ^ - Startup
- \* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 24-Sep-2024

Plant Wheelabrator North Andover  
Unit Unit 1  
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

| Time (hr) | 1-6 min | 7-12 min | 13-18 min | 19-24 min | 25-30 min | 31-36 min | 37-42 min | 43-48 min | 49-54 min | 55-60 min | Average |
|-----------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| 0         | 2       | I        | 2         | I         | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 1         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 2         | 2       |          | 2         |           | 2         | 2         | 1         | 1         | 1         | 2         | 1       |
| 3         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 4         | 1       |          | 1         |           | 2         | 2         | 2         | 2         | 2         | 2         | 1       |
| 5         | 2       |          | 2         |           | 1         | 2         | 2         | 2         | 2         | 2         | 1       |
| 6         | 2       | IC       | 6         | IC        | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 7         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 8         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 9         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 10        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 11        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 12        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 13        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 14        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 15        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 16        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 17        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 18        | 1       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 19        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 20        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 21        | 2       |          | 2         |           | 2         | 2         | 1         | 1         | 2         | 2         | 1       |
| 22        | 2       |          | 2         |           | 2         | 2         | 2         | 1         | 2         | 2         | 2       |
| 23        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |

**Status Flags**

I - Invalid                      C - Calibration                      F - Offline                      T - Out of Control                      ^ - Startup  
 B - Bad                            M - Maintenance                      P - Purge                      E - Excluded                      \* - Shutdown



# WHEELABRATOR NORTH ANDOVER A WIN-WASTE INNOVATIONS COMPANY OPACITY REPORT



Date 24-Sep-2024

Plant Wheelabrator North Andover  
Unit Unit 2  
Source Outlet

Opacity is a measure of how much soot or smoke may be contained in stack emissions. The more smoke that is contained in the emissions the higher the level of opacity. Continuous opacity monitors located after all of the air pollution control equipment measure the opacity of the emissions from each boiler. Typically the human eye can not detect or see smoke that is less than 5% opacity. You won't see smoke from a modern trash-to-energy plant although in colder weather you will see water vapor condensation, similar to seeing your breath on a cold day. This is not considered opacity. We have a permit limit established by the Massachusetts Department of Environmental Protection of 10% opacity averaged every six (6) minutes.

Limit 10 %

| Time (hr) | 1-6 min | 7-12 min | 13-18 min | 19-24 min | 25-30 min | 31-36 min | 37-42 min | 43-48 min | 49-54 min | 55-60 min | Average |
|-----------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| 0         | 2       | I        | 2         | I         | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 1         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 2         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 3         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 4         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 5         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 6         | 1       | IC       | 6         | IC        | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 7         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 8         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 9         | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 10        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 11        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 12        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 13        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 14        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 15        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 16        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 17        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 18        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 19        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 20        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 21        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 22        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |
| 23        | 2       |          | 2         |           | 2         | 2         | 2         | 2         | 2         | 2         | 2       |

**Status Flags**

I - Invalid                      C - Calibration                      F - Offline                      T - Out of Control                      ^ - Startup  
 B - Bad                            M - Maintenance                      P - Purge                            E - Excluded                            \* - Shutdown