**Ambient Air Quality Monitoring For 2023/2024 by Laboratory Division**

**By Marcellah Ojiambo**

NEMA on acquisition of the Air Quality monitoring mobile laboratory started monitoring the ambient air in the country.

Recently in the 2023/2024 financial year, Air quality monitoring was done in Nairobi during the 2023 Standard Charted Nairobi Marathon, world environment Day and in Mombasa. The data that was recorded is as follows

**Air quality monitoring data for the standard chartered Nairobi marathon 2023**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter/  Date & Time | **28/10/23 12:00** | **28/10/23 18:00** | **29/10/23 0:00** | **29/10/23 6:00** | **29/10/23 12:00** | **29/10/23 18:00** | **30/10/23 0:00** | **30/10/23 6:00** | **24 hours Average**  **STD** |
| **H2S-ug/m3** | 1.029 | 2.874 | 2.309 | 2.849 | 1.667 | 2.333 | 2.901 | 3.693 | **50** |
| **HUM-%** | 44.456 | 65.943 | 80.17 | 73.398 | 46.442 | 54.696 | 79.923 | 85.881 |  |
| **VOCs ppb** | 49.809 | 106.041 | 22.545 | 34.468 | 25.505 | 29.609 | 19.856 | 151.51 | **600** |
| **CH4-ppm** | 8.58 | 0.474 | 0.475 | 0.478 | 0.478 | 0.482 | 0.482 | 0.461 | **2.4** |
| **NMHC-ppm** | -0.006 | 0.359 | 0.364 | 0.367 | 0.371 | 0.372 | 0.373 | 0.349 | **700** |
| **NO-ug/m3** | 28.979 | 9.692 | 2.764 | 3.814 | 7.214 | 3.731 | 4.06 | 0.346 | **80** |
| **PM10-ug/m3** | 20.635 | 2.826 | 0.94 | 3.403 | 2.198 | 1.023 | 1.329 | 2.331 | **50** |
| **PM2.5-ug/m3** | 7.582 | 2.728 | 0.92 | 2.483 | 1.438 | 0.987 | 1.319 | 2.31 | **50** |
| **WD-Deg** | 115.821 | 94.894 | 164.49 | 144.427 | 151.434 | 154.289 | 141.152 | 124.182 |  |
| **TEMP-0C** | 24.777 | 21.001 | 18.254 | 19.678 | 24.531 | 21.498 | 17.8 | 17.551 | **25** |
| **WS-m/s** | 2.839 | 1.803 | 1.718 | 1.703 | 2.645 | 2.202 | 1.579 | 1.783 |  |
| **THC ppm** | 8.532 | 0.555 | 0.557 | 0.564 | 0.563 | 0.565 | 0.564 | 0.545 | **600** |

**KEYWORDS:** **THC**- Total Hydrocarbons

**PM** -Particulate Matter **WS**- Wind Speed

**NO**-Nitric Oxide **WD**-Wind Direction

**H2S** –Hydrogen Sulphide **TEMP**- Temperature

**HUM** – Humidity **VOCs-**Volatile Organic Compounds

**NMCH-**Non Methane **CH4-** Methane

In Mombasa the Air quality Mobile laboratory was stationed at Makupa police station for ambient air quality measurement.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Timestamp** | **VOCs (ppb)** | **H2S**  **(ug/m3)** | **PM2.5**  **( ug/m3)** | **PM10**  **(ug/m3)** | **NMHC-(ppm)** | **THC**  **(ppm)** |
| 11/2/2023 8:00 | 79.057 | 1.937 | 4.456 | 9.142 | 0.241 | 0.428 |
| 11/2/2023 16:00 | 111.748 | 2.085 | 3.296 | 5.254 | 0.358 | 0.552 |
| 11/3/2023 0:00 | 58.775 | 2.163 | 0.636 | 0.646 | 0.383 | 0.569 |
| 11/3/2023 8:00 | 257.943 | 3.469 | 4.117 | 5.174 | 0.385 | 0.574 |
| 11/3/2023 16:00 | 206.271 | 3.49 | 3.548 | 3.947 | 0.382 | 0.575 |
| 11/4/2023 0:00 | 113.765 | 1.849 | 1.027 | 1.041 | 0.383 | 0.576 |
| 11/4/2023 8:00 | 154.422 | 2.271 | 2.888 | 4.675 | 0.384 | 0.577 |
| 11/4/2023 16:00 | 88.252 | 1.877 | 1.32 | 1.691 | 0.385 | 0.578 |
| 11/5/2023 0:00 | 62.256 | 1.44 | 1.11 | 1.125 | 0.383 | 0.575 |
| 11/5/2023 8:00 | 72.962 | 1.642 | 1.454 | 2.307 | 0.385 | 0.577 |
| 11/5/2023 16:00 | 59.984 | 1.262 | 0.937 | 1.07 | 0.386 | 0.581 |
| 11/6/2023 0:00 | 123.819 | 1.298 | 0.824 | 0.843 | 0.386 | 0.581 |
| 11/6/2023 8:00 | 217.535 | 2.654 | 1.959 | 3.693 | 0.121 | 0.309 |
| **Air quality**  **24 hours Average**  **STD** | **600** | **50** | **50** | **50** | **700** | **600** |

AMBIENT Air Quality Monitory Data for the World Environment Day at St. Hannah Girls, School, Karen, Nairobi

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TIME**  **units** | **H2S**  **ppb** | **NH3**  **ppb** | **VOC’S**  **ppb** | **PM2.5**  **µg/m³** | **PM10**  **µg/m³** | **CO**  **ppb** | **C02**  **ppb** | **03**  **µg/m³** |
| 11:30am | 1.069 | 0.00 | 0.00 | 4.9 | 5.2 | 0.41 | 0.82 | 13.346 |
| 11:45am | 2.309 | 56.03 | 0.03 | 2.7 | 2.6 | 0.47 | 0.81 | 11.939 |
| 12:00pm | 1.776 | 22.73 | 0.006 | 2.1 | 2.5 | 0.48 | 0.81 | 12.223 |
| 12:15 | -0.035 | 15.17 | 0.001 | 3.6 | 3.0 | 0.51 | 0.80 | 12.941 |
| 12:30 | 1.208 | 21.11 | 0.003 | 2.5 | 2.7 | 0.56 | 0.81 | 18.338 |
| 12:45 | 0.670 | 18.92 | 0.004 | 2.5 | 2.8 | 0.55 | 0.80 | 17.638 |
| 13:00 | 0.944 | 60.62 | 0.008 | 2.7 | 3.2 | 0.58 | 0.71 | 21.637 |
| 13:15 | 1.033 | -38.71 | 0.008 | 2.7 | 3.1 | 0.60 | 0.78 | 16.014 |
| 13:30 | 1.190 | 32.84 | 0.009 | 2.6 | 2.8 | 0.61 | 0.80 | 16.309 |
| 13:45 | 1.203 | 6.37 | 0.004 | 1.3 | 1.6 | 0.67 | 0.79 | 19.213 |
| 14:15 | 1.021 | -10.18 | 0.005 | 2.8 | 2.8 | 0.66 | 0.80 | 16.799 |
| 14:30 | 1.296 | 28.22 | 0.007 | 3.2 | 3.2 | 0.70 | 0.78 | 15.258 |
| 14:45 | 1.042 | 43.56 | 0.006 | 2.3 | 3.1 | 0.67 | 0.82 | 16.309 |
| 15:00 | 1.217 | 19.23 | 0.004 | 4.8 | 5.1 | 0.70 | 0.82 | 14.241 |
| 15:15 | 1.228 | -14.19 | 0.019 | 2.7 | 3.2 | 0.72 | 0.82 | 16.742 |
| 15:30 | 0.349 | 144.26 | 0.010 | 3.6 | 4.0 | 0.30 | 0.79 | 16.675 |
| **Air quality**  **24 hours Average**  **STD** | **50** |  | **600** | **50** | **50** |  |  |  |