

**The National Environment and Planning Agency Guidelines
and User Guide Manual for Monthly Reporting of Air Quality
Data**



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Executive Summary

This document seeks to outline to the users of the Air Quality Monthly Report Excel Spread Sheet and Web Enabled Format the data entry procedures and requirements. It includes general information on monthly reporting, outlines what is required by the users as well as explains the format of the data that is required. It gives the user a step by step approach and guides them in the use of each of the data sheets and windows that are included in the report.

1.0 GENERAL INFORMATION

Background

The Natural Resources Conservation Authority and the National Environment and Planning Agency have seen the need for stringent reporting regimes due to inadequate environmental data and the continued degradation of the environment on a daily basis.

In order to effectively manage the rapid changing quality of our countries ambient air, air emissions and climate change, monthly reporting is seen done as a means of keeping up with and assessing the trends. Air Quality and by extension air pollution is dynamic and shifts rapidly with production shifts, weather patterns and operations. Real time data is what is required in the 21st century to meet the public's need for information, analysis and the protection of their welfare. Monthly Reporting on Air Quality data is the Regulators means of being as close as possible to pollution trends and health impacts on the general public without being overly burdensome on the reporters.

Reporting Time Frame

A 1998-2003 VERSION MICROSOFT EXCEL FORMATTED monthly report shall be submitted in the prescribed format laid out by the National Environment and Planning Agency by no later than the **last Friday** in the **third week** of the **month following** the reportable month. The **reportable month** in this case is the month on which the facility is required to report on.

Units of Measurement

All units of measurement shall be reported as **Metric Units**. The appropriate conversion factors should be applied by the reporter to the data before entry into the report spread sheets. Reports that contain units other than metric will be deemed unacceptable and returned to the facility for correction and resubmission.

Use of spread Sheets

Users are allowed to add Columns, Cells and Spread Sheets as needed but **must maintain the general format of the report** when doing so. Reporters are also allowed to delete Cells, Rows and Spread Sheets that do not apply to their facility without changing the general format of the report. This may become a necessity for printing a report or transferring a table to a MICROSOFT WORD document or a PDF document.

Submission of a Report

The 1998-2003 VERSION MICROSOFT EXCEL FORMATTED monthly report should be submitted via email to the Air Quality Focal Point in the National Environment and Planning Agency. The email address of this person will be available by contacting the

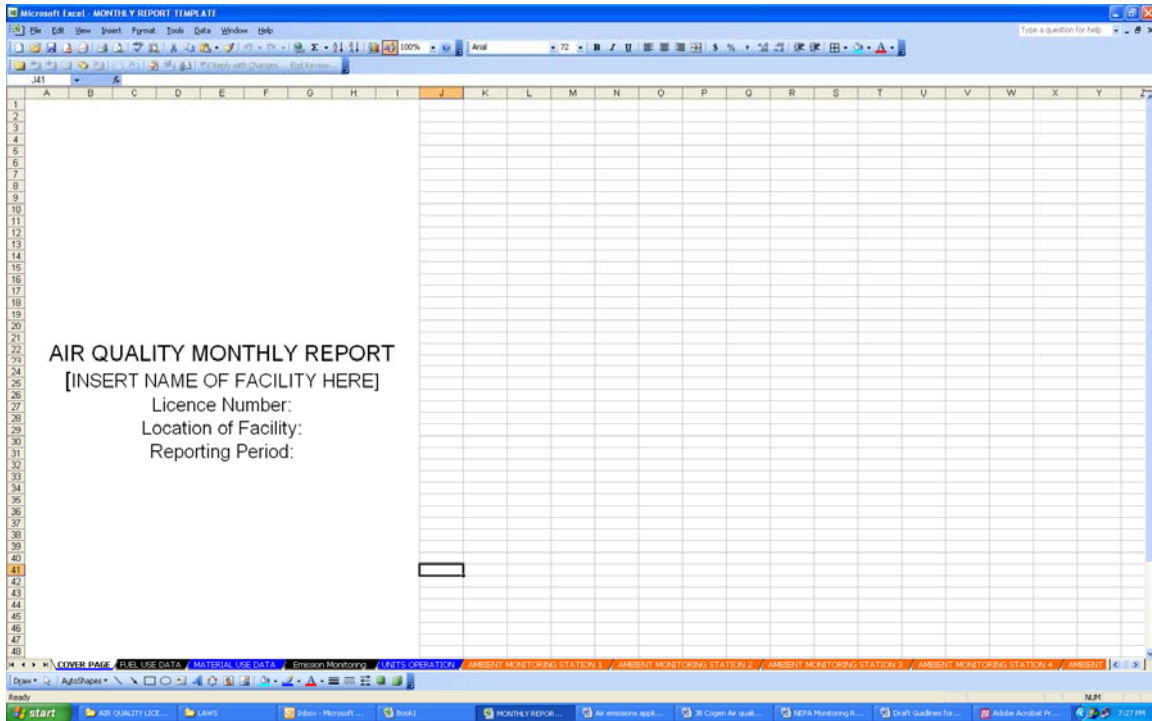
National Environment and Planning Agency on any of its channels. A printed Hard Copy of the report must be submitted to the Offices of the National Environment and Planning Agency 10 & 11 Caledonia Avenue, Kingston 10.

As soon as the Web Enabled version of the report is commissioned reporters will no longer be required to submit the report using MICROSOFT EXCEL but will still be required to submit reports hard copy.

Use of Formulae in Cells

The use of formulae to produce data that result from data entry in cells is encouraged and makes the reporter's task of data entry much simpler. Users however must be aware of the errors that may occur from this practice and must ensure that all formula used are checked using their own quality assurance methods.

2.0 COVER PAGE

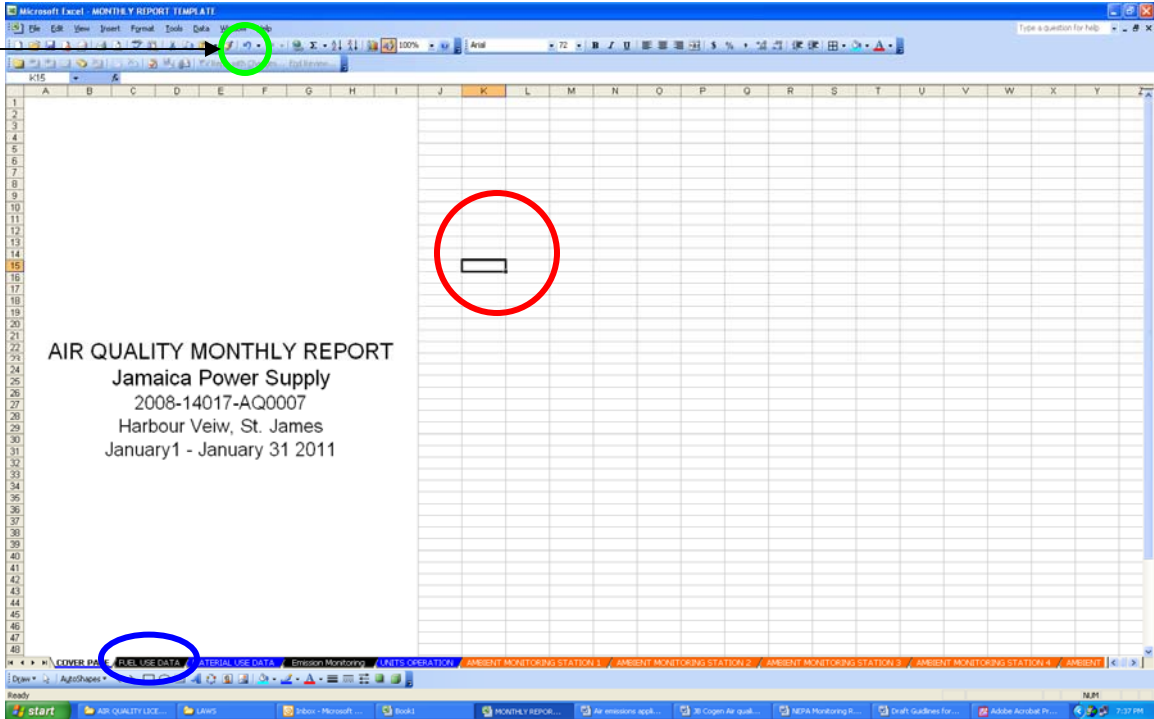


The screen Shot shows the blank template for the cover page of your report. This is the first page of the Excel sheet

1. To use this page simply left click using your mouse, when your cursor arrow is positioned in the cell, to access the Cell.
2. Double left click again with your cursor in the Cell.
3. Delete the phrase INSERT NAME OF FACILITY HERE and write the name of your facility
4. Repeat step 3 for your Licence number, Location of Facility and Reporting Period

When you have completed this sheet it should look like the screen shot below

“UNDO
BUTTON”

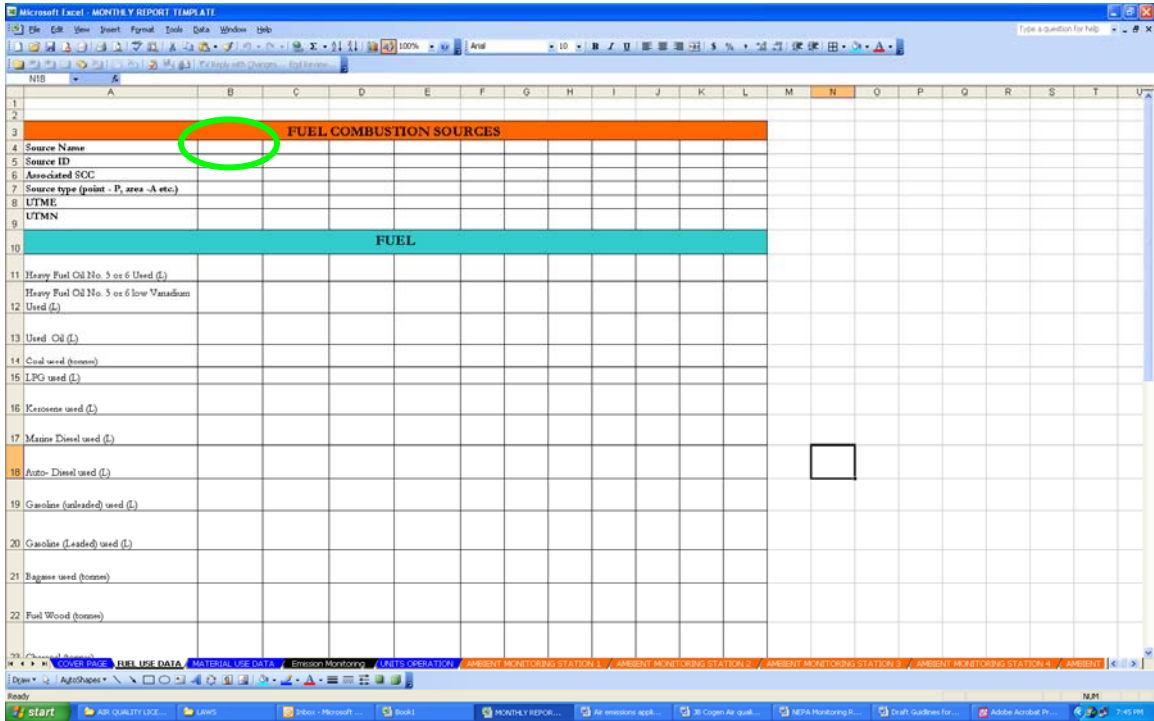


If you have made any errors, left click using your mouse on any position outside of the cell as highlighted by the red circle above.

Then left click the “undo button” highlighted by green circle above and repeat the steps 1-4 above.

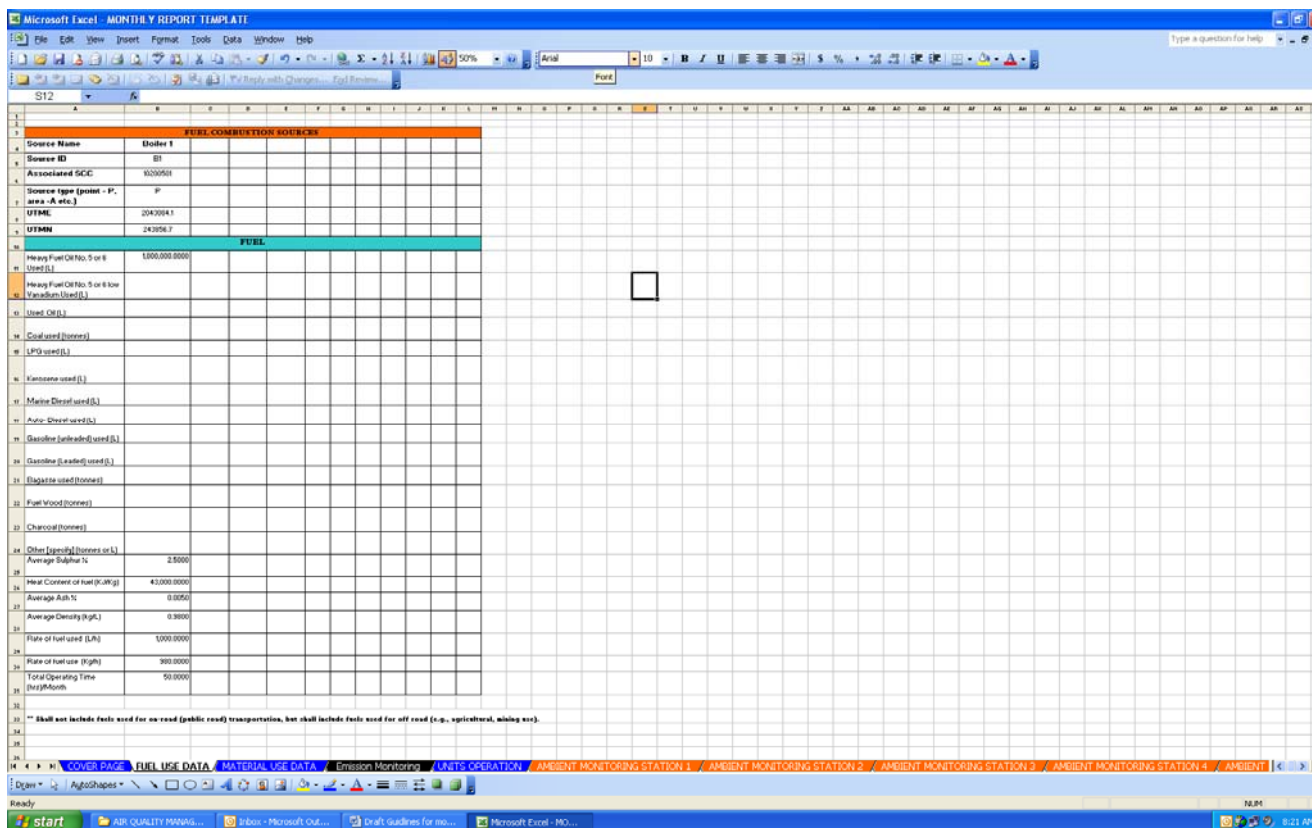
To move to the FUEL USE data entry sheet use your mouse to left click on the sheet marked FUEL USE DATA highlighted above in blue circle.

3.0 FUEL USE DATA



The screen above is the shot of the fuel use data sheet

1. the first step in using this sheet is to left click into cell B4 highlighted in green above
2. You should now begin entering data into the fields
3. Each column represents a source at the top in row labelled SOURCE NAME enter the name of the source as presented in the application documents submitted for the Licence.



The screen shot above represents what one column should look like after completing data entry for one source.

Data Sets

❖ Source Name

Your Source Name is the name given to the reference source when an application for the Air Pollutant Discharge Licence was made. If it is a new source or if your company did not receive a Licence but is still required to submit a Report use the reference name for the source used by your operations personnel at the facility

❖ Source ID

The source ID is a code that was listed for each source when an application for Air Pollutant Discharge Licence was made. The ID usually consist an abbreviation of the Source Name and a Number. If it is a new source or if your company did not receive a Licence but is still required to submit a Report use the reference name used by your operations personnel at the facility and a number to create an ID for your source. **View** Example Below.

If company X has two Boilers

Source Name: Boiler 1 and Boiler 2
Source ID: may be XB1 and XB2 were;
X- Represents the first letter of the facilities Name
B- Represents the first letter of units source Name.

In some cases facilities may have multiple sources and the first letter of these sources may be the same. For example:
A facility may have a Boiler 1 and a Bin 1 in such a case differentiation in ID can be made by using the more than one letter as an abbreviation for a source, hence in this case Boiler 1 would have ID: B1 and Bin 1 would have ID: BI1 or even BIN1.

There is no limit to the length of the name that can be used to ID a source however it must be representative of the source.

❖ **Associated SCC (Standard Classification Code)**

This is an international classification number that is related to the type of process equipment or combustion equipment used by the facility. These codes should have been assigned to each source listed in the application documents submitted for the Air Discharge Licence. The codes can also be sourced from the websites <http://www.state.nj.us/dep/aqm/es/scc.pdf> and <http://www.epa.gov/ttn/chief/ap42/index.html>

❖ **Source Type**

The types of air pollutant emission sources are commonly characterized as point, line, area or volume sources:

- **Point source** — A point source is a single, identifiable source of air pollutant emissions (for example, the emissions from a combustion furnace flue gas stack). Point sources are also characterized as being either elevated or at ground-level.
- **Line sources** — A line source is one-dimensional source of air pollutant emissions (for example, the emissions from the vehicular traffic on a roadway).
- **Area source** — An area source is a two-dimensional source of diffuse air pollutant emissions (for example, the emissions from a forest fire, a stockpile, a landfill or the evaporated vapors from a large spill of volatile liquid).
- **Volume source** — A volume source is a three-dimensional source of diffuse air pollutant emissions. Essentially, it is an area source with a third (height) dimension (for example, the fugitive gaseous emissions from piping flanges, valves and other equipment at various heights within industrial facilities such as oil refineries and

petrochemical plants). Another example would be the emissions from an automobile paint shop with multiple roof vents or multiple open windows.

To identify the source types use the first letter of each source type. For example,

- Point – P,
- Line- L,
- Area-A,
- Volume-V

❖ **UTME/UTMN** (Universal Transverse Mercator Easting and Northing)

These are the coordinates that would identify your source(s) on a map. The coordinates of the source(s) were listed in the application documents submitted for Air Pollutant Discharge Licence. If this is not available use a GPS or any other suitable device to map the coordinates.

❖ **Fuel Use data**

Input monthly data on fuel use for each unit that is used by your facility as well as the operational hours and rate of fuel use for each unit. The fuel characteristics such as your % Sulphur Content and Ash Content can be found on your Certificate of Analysis which your facility should receive with every batch of oil purchased.

For companies who use Bagasse and Used oil the requirement is that fuel analysis is carried out on each batch of fuel you burn. The same is expected for the users of all other fuel types other than fuel oil.

Each company is required to submit quarterly copies of their Analysis Certificates to National Environment and Planning Agency. The facility must attach these to the Hard Copy Monthly Report of the final month in the third quarter

4.0 MATERIAL USE DATA

Row	Material	Column 2	Column 3	Column 4	Column 5
19	Lime				
20	Flocculant				
21	Grain				
22	Lime Stone				
23	Hydrox Alcohol				
24	Sugar Cane				
25	Crude Oil				
26	Clinker				
27	Other (please Specify)				
28					
29					
30	* Only use fields that apply to your facility				
31					
32					
33	Total Products made for the month		How stored	How shipped	
34	Hydrate				
35	Anhydrous alcohol				
36	Steam				
37	Sugar				
38	Propane				
39	Butane				
40	Naphta				
41	Turbo Fuel				
42	Auto Diesel Oil				
43	Heavy Fuel Oil				
44	Asphalt				
45	Cement				
46	Clinker				
47	Gasoline				
48	Iron				
49	Molasses				
50	Bauxite				
51	Alumina				
52	OTHER (specify)				
53					
54					
55					
56					

- ❖ Users may use the information given on pages 6-8 as a guide to fill in information on the source data.
- ❖ Please note that only fields that apply to your facility must be filled in.
- ❖ Note also that **Metric Units** should be used where applicable.

5.0 EMISSION MONITORING

Microsoft Excel - Copy of MONTHLY REPORT TEMPLATE.xls

EMISSION MONITORING

Monitoring for NO_x (check Box with X)

Monitoring for PM (check box with X)

Monitoring for CO (check Box with X)

Monitoring for VOC (check box with X)

Monitoring for Opacity (check box with X)

Monitoring for Pb (check box with X)

OTHER (specify)

HOURLY DATA REPORT SHEET (Only use table if using CEMs and /or Opacity monitoring)

DATE	TIME (Hr)	Method	Date of Last Calibration	SO _x (q/s)	NO _x (q/s)	CO (q/s)	PM (q/s)	Average Opacity	Pb (q/s)	VOC (q/s)
(SOURCE ID)										

COVER PAGE / FUEL USE DATA / MATERIAL USE DATA / Emission Monitoring / UNITS OPERATION / AMBIENT MONITORING STATION 1 / AMBIENT MONITORING STATION 2

- ❖ The screen above is a shot of the Emission Monitoring data sheet to be used **ONLY** by facilities that use Continuous Emissions Monitors (CEMS) and/or Opacity Monitoring by method 9 or any other approved method as part of their monitoring programme.
- ❖ The cell highlighted by the green circle must be completed for **EACH** source identified.

Companies using Method 9 as the means of Opacity measurements should submit hard copies of all data sheets quarterly to the Agency.

6.0 UNITS OPERATION

SOURCE OPERATION											
1											
2	Source Name										
3	Source ID										
4	Associated SCC										
OPERATING PERIOD											
5											
6	Total Down time for schedule maintenance (hrs)										
7	Total downtime for unscheduled maintenance (hrs)										
8	Total Operating Time (hrs)/Month										
9											
10	**Report Only on sources Listed as emission points at your facility (ALL OPERATING TIME FOR SOURCES MUST BE REPORTED IN THIS SECTION (fuel combustion and non fuel combustion sources should be included))										
11	** add columns if necessary										
12											
13											
14											
15											
16											
17											
18											

- ❖ The Units Operation sheet should be used to report all scheduled/unscheduled maintenance as well as the total operating hours of the sources.
- ❖ Reporters should only report on sources listed as emission sources at the facility
- ❖ Details must be given as to the reason for any unscheduled maintenance in the comments column on the extreme right of the sheet.
- ❖ The Reporter may also add additional columns if it is needed.

7.0 AMBIENT MONITORING STATION

The screenshot shows a Microsoft Excel spreadsheet titled 'Microsoft Excel - Copy of MONTHLY REPORT TEMPLATE.xls'. The spreadsheet is divided into several sections. A blue circle highlights a table titled 'CODE FOR REPORTING AMBIENT DATA SET' located in the upper right quadrant. This table has two columns: 'COLOUR FOR CELL' and 'DATA TYPE'. The rows are as follows:

COLOUR FOR CELL	DATA TYPE
999999	Missing data. Give brief comment on missing data.
777777	Maintenance. Must include readings during calibration.
777777	Maintenance. Must include readings during calibration.

Below this table is a section titled 'Conversion factor from ppm to ug/m³'. It contains the text: 'To convert from parts per million (ppm) to ug/m³ at 25°C and 760mmHg, multiply by $M/0.0244T$, where M is the molecular weight of the gas.'

The main data table is titled 'AMBIENT MONITORING STATION ID' and has the following columns:

DATE	WIND SPEED	WIND DIRECTION	PM10 24 Hr Average	PM10 Annual Average gear to date	Run Time PM10 Monitor	TSP 24Hr Average	TSP Annual Average gear to date	Run Time TSP Monitor	SO ₂ 1Hr Average	SO ₂ 24HR Average	SO ₂ Annual Averages	NO _x 1 Hr Averages	NO _x Annual Averages	CO 1 Hr Average	CO 8 Hr Average	Pb 24 hr Average	VOC	ANY OTHER PARAMETER IF NEEDED
	UNITS/m/s	DEGREES	ug/m ³	ug/m ³	Hr	ug/m ³	ug/m ³	Hr	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	ug/m ³	

The spreadsheet also includes a 'Station ID' section with instructions: 'Station ID is a combination of the Licence number and the letter you assign to your station view the example here. If your company X has licence number 2008-10917-AQ00015, then your first station would be 14-915-B, your second station would be 14-915-B etc. Similarly if your Licence number is 2008-416917-AQ00002 then your first station would be ID: 86-902-A. The ID system identifies the first two digits of your parish reference.'

The Ambient Monitoring Station data sheet should be completed for each ambient monitoring station being operated by the facility.

- ❖ The colour codes highlighted in the blue circle should be used for reporting calibration data as well as any anomalies in the data.
- ❖ The **Green** colour should be used to highlight all **calibration data**.
- ❖ **999999** highlighted in **Red** should be used to report missing data, which should be accompanied by a brief comment as to the reason for the missing data in the comments section on the far right section of the sheet.
- ❖ **777777** highlighted in **Orange** should be used to report data that is missing due to scheduled/unscheduled maintenance which must be accompanied by a brief comment in the comments section on the far right section of the sheet.

- ❖ Reporters imputing data should make sure that they observe the units that the data is required to be reported in. If the equipment being used records data as ppm please use the following conversion:

To convert from parts per million (ppm) to ug/m³ at 25°C and 760mmHg, multiply by M/0.02447, where M is the molecular weight of the gas

Data Sets

Station Number

The station number will be assigned by the Agency

Station Name

The station name is assigned by the facility it must refer to the facility and if the facility operates more than one station ensure that a number is included in the name.

For example:

Station Name for company NEPA may be **NEPA AMS 1**

Station ID

Station ID is a combination of the Licence number and the letter you assign to your station view the example here:

- ❖ If your company X has licence number 2008-14017-AQ00015.
- ❖ Then your first station would be 14-015-A your second station would be 14-015-B etc.
- ❖ Similarly, if the Licence number is 2009-06017-AQ00002 then your first station would be ID: 06-002-A.
- ❖ The ID system identifies the first two digits of your parish reference number and the last three digits of your facility reference number in your Licence number

Location

In most cases stations will be located outside the property please provide as best as possible location for these stations. This should include street address and if not a direction reference point to the address.

Station Parameters

- ❖ **The reporter should list the parameters monitored at the station.**

Measurement Method

- ❖ The reporter should give the method of sampling done by the analyzers. Below is a list of minimum requirements for sampling stations

**Minimum Performance Specifications For Ambient
Air Quality Monitoring of Criteria Pollutants**

Specification	SO ₂	NO ₂	CO	O ₃	TSP	PM ₁₀	Pb
Reference Method	Pararosaniline Method	Chemiluminescence	Non-dispersive IR Gas filter correlation spectroscopy	Ultraviolet photometry	Manual High Volume sampler	Hivol sampler	Hivol sampler
Operating Range	0 to 0.5 ppm	0 – 0.5 ppm	0 – 50 ppm	0.01 – 0.5 ppm	2 – 750 µg/m ³	Up to 300 µg/m ³	7.5 µg/m ³
Minimum Detection Limit	0.010 ppm	0.010 ppm	1.0 ppm	0.010 ppm	2 µg/m ³	0.07 µg/m ³	0.07 µg/m ³
Noise	0.005 ppm	0.005 ppm	0.5 ppm	0.005 ppm	NA	NA	NA
Zero drift (24 h)	±0.02 ppm	±0.02 ppm	±1.0 ppm	±0.02 ppm	NA	NA	NA
Span Drift (24 h)					NA	NA	NA
20% of upper range	±20.0 %	±20 %	±10 %	±20 %			
80% of upper range	±5.0 %	±5 %	±2.5 %	±5.0 %			
Precision					3%	≤ 5 µg/m ³ for conc ≤ 80 µg/m ³ and 7% for conc > 80 µg/m ³	5 – 6% within lab RSD 7-9% between lab RSD
20% of upper range limit	0.010 ppm	0.02 ppm	0.5 ppm	0.01 ppm			
80% of upper range limit	0.015 ppm	0.03 ppm	0.5 ppm	0.01 ppm			
Accuracy Annual	±15% 95% CI ≤ ±20%	±10%	95% CI ≤ ±20%	±10% 95% CI ≤ ±20%	±10%	PD ≤ ± 7% for flow rate	Not specified
Completeness (minimum averaging period)	75% (hourly)	90% (hourly)	75% (8h block)	90% (hourly)	75% (Quarterly)	75% (Quarterly)	75% (Quarterly)
Averaging time	1 h	1 h	1 h	1 h	24 h	24 h	24 h

Last Calibration

- ❖ The date of the last calibration should be provided

Current status

- ❖ Give current status of the station if it is operating, under maintenance etc.

8.0 WEB ENABLED

The document will be updated as soon as this version is available

9.0 PENALTIES

All penalties for non-submission, false information and non-compliance of reporting information will be the same as those governed under the Natural Resources Conservation Authority (Air Quality) Regulations 2006 schedules and articles.