# Florida Department of Environmental Protection

# 2018
# Annual Air Monitoring
# Network Plan Addendum

## Division of Air Resource Management
## Office of Air Monitoring
## December 2018

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# 1.0 Introduction

This addendum provides information to the USEPA to approve the relocation or closure of the sites and monitors listed in Table 1.1, below.

**Table 1.1 Site and Monitor Closures and Relocations**

| AQS Site # | Site Name | Type | Pollutant | Modification |
|---|---|---|---|---|
| 12-057-3002 | Sydney | SLAMS | $PM_{10}$ (Primary and collocated monitors) | Close |
| 12-103-2008 | Gateway | SLAMS | CO | Close |
| 12-031-0108 | Pepsi Place | SLAMS | $PM_{10}$ | Relocation to Mandarin site |
| 12-009-0007 | Melbourne | SLAMS | Ozone, $PM_{2.5}$, $PM_{10}$ | Relocation on property |
| | | SPM | Continuous $PM_{2.5}$ | |

# 2.0 Monitor Closures

The Sydney and Gateway monitors mentioned in Table 1.1, meet several scenarios defined in EPA's Network Assessment Guidance and 40 CFR 58.14(c), where the state or local agency can confidently request approval for the shutdown of a SLAMS monitor. These include:

- The monitors showed attainment during the last five years;
- The probability is less than 10% that these monitors will exceed 80% of the applicable NAAQS during the next three years based on the concentrations, trends, and variability observed in the past;
- The monitors are not specifically required by an attainment plan or maintenance plan, as it is an attainment area which is expected to remain in attainment; and
- The monitors have not measured violations of the CO or $NO_2$ NAAQS in the last five years.

A summary of the evaluation DEP performed for these monitors using EPA's Ambient Air Monitoring Network Assessment Guidance (AAMNAG) document is provided below in Tables 2.1 and 2.2.

**Table 2.1 Monitor Evaluation Summaries for Discontinuation**

| AQS Site # | Site Name | Type | Pollutant | Showed Attainment 2013-2017 | Probability <10% Monitor Will Exceed 80% of NAAQS | Monitor Specifically Required by Attainment or Maintenance Plan | Last Monitor in Nonattainment or Maintenance Area | CFR Required | Modification | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 12-057-3002 | Sydney | SLAMS | $PM_{10}$ | Yes | Yes | No | No | No | CLOSE | See calculation results in Table 2.2 |
| | | SLAMS | $PM_{10}$ | Yes | Yes | No | No | No | CLOSE | Collocated monitor. See calculation results in Table 2.2 |
| 12-103-2008 | Gateway | SLAMS | CO | Yes | Yes | No | No | No | CLOSE | See calculation results in Table 2.2 |

Note: Section 4.1 of the AAMNAG states that a monitor can be removed (after Regional Administrator approval) if it is currently in attainment with the applicable NAAQS standard and if the following four tests can be met:

1. The $PM_{2.5}$, ozone, CO, $PM_{10}$, $SO_2$, lead, or $NO_2$ monitor showed attainment during the previous five years.
2. The probability is less than 10% that the monitor will exceed 80% of the applicable NAAQS during the next three years based on the concentrations, trends, and variability observed in the past. This can be done using the following equation:

$$\bar{X} + \frac{t*s}{\sqrt{n}} < 0.8 * NAAQS$$

$\bar{X}$ is the average design value for the last 5 years

*t* is the student's t value for n-1 degrees of freedom at the 90% confidence level

*s* is the standard deviation of the design values

*n* is the number of records (i.e., number of design values), and

NAAQS is the standard of interest.

3. The monitor is not specifically required by an attainment plan or maintenance plan.

4. The monitor is not the last monitor in a nonattainment area or maintenance area that contains a contingency measure triggered by an air quality concentration in the latest attainment or maintenance plan adopted by the state and approved by EPA.

All monitors listed in Table 2.1 passed these tests and the probability test results are listed in Table 2.2 below.

**Table 2.2 40 CFR Part 58.14(c) and Ambient Air Monitoring Network Assessment Guidance Calculations**

| Site | Site Name | Pollutant | Averaging Period | Design Value | | | | | $\bar{X}$ | s | t | n | NAAQS | 80% of NAAQS | 90% Confidence Interval | Pass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2013 | 2014 | 2015 | 2016 | 2017 | | | | | | | | |
| 12-057-3002 | Sydney | $PM_{10}$[1] | 24-hr | 23 | 34 | 42 | 22 | 36 | 33.80 | 8.29 | 2.13 | 5 | 150 | 120 | 41.70 | **Yes** |
| | | $PM_{10}$[1] Collocated | 24-hr | 24 | 29 | 29 | 21 | 31 | 33.80 | 8.29 | 2.13 | 5 | 150 | 120 | 41.70 | **Yes** |
| 12-103-2008 | Gateway | CO[1] | 8-hr | 0.9 | 1 | 0.6 | 0.7 | 0.8 | 1.32 | 0.50 | 2.13 | 5 | 9 | 7.2 | 1.79 | **Yes** |
| | | | 1-hr | 1.6 | 3 | 1.8 | 1.5 | 1.2 | 2.08 | 0.85 | 2.13 | 5 | 35 | 28 | 2.89 | **Yes** |

[1] The 1st highest concentration for each year was used in probability calculation.

# 3.0 Site and Monitor Relocations

- *City of Jacksonville – Pepsi Place Site: $PM_{10}$ Monitor*

DEP is requesting approval to relocate the $PM_{10}$ monitor located at the Pepsi Place Site (AQS Site #: 12-031-0108) in Jacksonville to the Mandarin Road Site (AQS Site #: 12-031-0098) as it will allow for a more efficient use of resources while ensuring that the $PM_{10}$ monitoring requirements continue to be met for the Metropolitan Statistical Area (MSA). Currently, the Mandarin Road site has a manual and continuous $PM_{2.5}$ monitor, which could be replaced with a single monitor (Teledyne T-640X), once the $PM_{10}$ monitor is relocated to that site. The site review information for Mandarin is presented in Table 3.1, below.

**Table 3.1 Mandarin Road - AQS Site # 12-031-0098**

| | **Mandarin Road Site** |
|---|---|
| **AQS Site #** | 12-031-0098 |
| **City (CBSA)** | Jacksonville |
| **Site Name** | Mandarin Road Site |
| **Statement of Purpose** | Needed by Regulation |
| **Site Review Date** | 1/24/2018 |
| **County** | Duval |
| **Location Latitude** | 30.135874 N |
| **Location Longitude** | -81.634093 W |
| **Address** | 14932 Mandarin Road |
| **Objective** | Population Exposure |
| **Pollutants Monitored** | $PM_{2.5}$ and Continuous $PM_{2.5}$ |
| **Sampling and Analysis Method** | $PM_{2.5:}$ TEI 2025i and TEOM 1405, Gravimetric Analysis |
| **Spatial Scale** | Neighborhood |
| **Operating Schedule** | Continuous and 1-in-3-day |
| **Network Type** | $PM_{2.5}$: SLAMS; Continuous $PM_{2.5}$: SPM |
| **Distance from Inlet to nearest:** | Tree Dripline = $PM_{2.5}$: 11.0 meters, Continuous $PM_{2.5}$: 11.9 meters<br>Road = $PM_{2.5}$ and Continuous $PM_{2.5}$: 82 meters<br>Wall = NA |
| **Access** | Unlimited |
| **Owner of Land** | City of Jacksonville |
| **Other Monitored Parameters** | NA |
| **Inlet Height** | $PM_{2.5}$: 2.6 meters, Continuous $PM_{2.5}$: 4.5 meters |
| **Comments** | $PM_{10}$ monitor will be added by January 31, 2019. |

- *Brevard County – Melbourne Site*

DEP is requesting approval to relocate the Melbourne Site (AQS Site #: 12-009-0007) in Brevard County due to the site's temporary transformer not meeting the City's electrical code. The new shelter will be located on the same property, approximately 108 meters from the current location where a permanent transformer has been established. The site review information is presented in Table 3.2 and Figures 3.1 to 3.5, below.

**Table 3.2 Melbourne - AQS Site # 12-009-0007**

| | **Melbourne Site** |
|---|---|
| **AQS Site #** | 12-009-0007 |
| **City (CBSA)** | Melbourne (Palm Bay-Melbourne-Titusville) |
| **Site Name** | Melbourne |
| **Statement of Purpose** | Needed by Regulation |
| **Site Review Date** | 02/05/2018 |
| **County** | Brevard |
| **Location Latitude** | 28.053695 N |
| **Location Longitude** | -80.628514 W |
| **Address** | 410 W. Florida Avenue |
| **Objective** | Population Exposure ($O_3$, $PM_{2.5}$, $PM_{10}$), Highest Concentration ($PM_{2.5}$) |
| **Pollutants Monitored** | Ozone, $PM_{2.5}$, $PM_{10}$ |
| **Sampling and Analysis Method** | Ozone: Thermo 49i, UV Photometry; $PM_{2.5:}$ TEI 2025, Continuous $PM_{2.5:}$ Thermo 1400AB, Gravimetric Analysis; $PM_{10}$: Thermo 1400AB, Gravimetric Analysis |
| **Spatial Scale** | Neighborhood |
| **Operating Schedule** | Continuous ($O_3$, $PM_{2.5}$ and $PM_{10}$) and 1-in-3-day ($PM_{2.5}$) |
| **Network Type** | Ozone: SLAMS; $PM_{2.5}$: SLAMS; Continuous $PM_{2.5}$: SPM; $PM_{10}$: SLAMS |
| **Distance from Inlet to nearest:** | Tree Dripline = $O_3$: 49 meters, $PM_{2.5}$: 50 meters; Continuous $PM_{2.5}$: 52 meters; $PM_{10}$: 46 meters.<br>Road = $O_3$: 75 meters, $PM_{2.5}$: 70 meters; Continuous $PM_{2.5}$: 73 meters; $PM_{10}$: 77 meters.<br>Wall = NA |
| **Access** | Unlimited |
| **Owner of Land** | City of Melbourne |
| **Other Monitored Parameters** | NA |
| **Inlet Height** | $O_3$: 3.8 meters, $PM_{2.5}$: 2.35 meters; Continuous $PM_{2.5}$: 4.55; $PM_{10}$: 4.5 meters |
| **Comments** | The estimated coordinates and measurements for the new shelter and monitors are: 28.05361111 N, -80.62972222W; Tree Dripline = 15 meters; Road = 40 meters; Wall = NA. Site relocation expected by April 1, 2019. |

- ***Photos and Aerial for the Brevard County: Melbourne Site - AQS # 12-009-0007***

**Figure 3.1 North from Proposed Melbourne Site**

**Figure 3.2 East from Proposed Melbourne Site**

**Figure 3.3 West from Proposed Melbourne Site**

**Figure 3.4 South from Proposed Melbourne Site**

**Figure 3.5 Aerial of Original and Proposed Melbourne Site Locations**