**Daily, Weekly, Monthly, Quarterly, and Annual Preventative Maintenance Examples**

# **Daily Preventative Maintenance Example**

**Sample System Checks – Daily**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item |  | Tag | Set Point | Record Daily Value or Status |
| **Pressures** | Instrument air | **PG1** | >90 psig |  |
|  | Sample pressure | **PG2** | >2 psig |  |
|  | Probe vacuum | **VG1** | <10 inch Hg |  |
|  | Sample probe purge air | **FR1** | >80 psig |  |
| **Flows** | Total sample flow | **RM1** | 4-5 lpm |  |
|  | NOX analyzer flow | **RM2** | ~1.5 lpm |  |
|  | CO analyzer flow | **RM3** | ~1.5 lpm |  |
|  | O2 analyzer flow | **RM4** | ~1.5 lpm |  |
|  | Gas sample total flow | **RM5** | 4-5 lpm |  |
| **Visual checks** | Room/enclosure temperature | HVAC | 75°F, ±5°F |  |
|  | Moisture sensor/filter | **MS1** | Clean and dry |  |
|  | Cooler temp | **GC1** | Green light = okay |  |
|  | Drain pump | **DP1** and **DP2** | Turning approx. 6 rpm |  |
|  | Sample line temp control | **TC1** | 250°F, ±10°F |  |

**Note**: this is only an example list - in this case for a source level extractive CEMS, and that the set points would be for this system only.

# **Weekly Preventative Maintenance Example**

**Sample System Checks – Weekly**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Perform all daily checks. |  |
| Perform manual calibration check. |  |
| Check moisture sensor (**MS1**) and tubing downstream of sample conditioner for moisture. Remove and dry as necessary. Check sample conditioner (**GC1**) for proper operation. |  |
| Verify sample line heater operation by checking current with amp meter. |  |

**DAS Checks – Weekly**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Check/change backup media (CD disk, tape, etc). |  |
| If enabled, verify that automatic backups have occurred for the week. |  |
| Verify there is sufficient disk for another week of data. |  |

# **Monthly Preventative Maintenance Example**

**Sample System Checks – Monthly**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Perform all daily and weekly checks. |  |
| Check sample pump (SP1); replace diaphragms and disks as needed, usually every 4 months. |  |
| Check peristaltic pump tubing (DP1 and DP2), replace as necessary. |  |
| Change desiccant media (DH1 and DH2). |  |
| If equipped with an air compressor:  1. Check/change oil as needed.  2. Check for excessive water build-up |  |
| Check filter on shelter HVAC system. Clean or replace as needed, usually every 2-3 months. |  |
| Check CGA/linearity cal gas bottle pressures > 500 psig. Order new gas bottles as needed keeping in mind the lead time may be several weeks. |  |

\*\*CGA/Linearity Gas Cylinders

# **Quarterly Preventative Maintenance Example**

**Sample System Checks – Quarterly**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Perform all daily, weekly, and monthly checks. Note that all routine maintenance is to be performed prior to the required quarterly audit test. |  |
| If sample gas pressure (**PG2**) shows a decline, perform probe maintenance. Replace the filter element and clean the filter chamber as necessary. Replace O-rings. Verify probe box heater is operating.  If flow is low, check sample pump (**SP1**). |  |
| Verify and calibrate all CEMS alarm switches. |  |
| The rear motor on the drain pumps (**DP1/DP2**) should be given two drops of #20 non-detergent oil. Do not over oil. Clean off any dust or dirt. |  |
| Perform CEMS sample system leak check and flow balance procedure. |  |
| Check ammonia scrubber (**AS1**). When deposits are visible 75% of the way up the length of the scrubber, scrubbing media needs to be replaced. Depending on concentration of NH3 and flowrate, media life may last 30,000 hrs. |  |
| Perform general housekeeping duties inside shelter/cabinet. Dust/clean all equipment surfaces. |  |

# **Annual Preventative Maintenance Example**

**Sample System Checks – Annual**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Perform all daily, weekly, monthly, quarterly, and semiannual checks. Note that all routine maintenance is to be performed prior to the required annual RATA. |  |
| Replace sample pump (**SP1)** diaphragms. |  |
| Inspect and clean thermoelectric cooler fan (**GC1**). |  |
| Inspect and replace as needed Fluororubber, polypropylene, PVC, toalone, and Teflon joints. |  |

**QA Audits – Annual**

|  |  |
| --- | --- |
| Item | Value or Status (Completed, OK, Replaced) |
| Perform any required annual RATA. | All testing completed on: |
| Check results for the RATA Bias Adjustment Factor and enter the BAF into the DAHS record field. |  |
| For Appendix D reporting units: Perform annual fuel flowmeter accuracy check before close of the quarter in which due. | Analysis completed on: |