Short audit physical aerosol properties – Checklist
Version 2.0 AW/TT 2014

Station name: _______________________________________________________________
Date:  _____________________
Auditors: _____________________

- Manuals for instruments available on site  yes  no
- Written logbooks for each instrument  yes  no
- General impression  excellent  good  fair  poor

Comments:_______________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Note: All flow rates of inlet and instruments should be measured!
Type of reference flow meter:____________________________ Serial number:_________
Aerosol inlet:

Inlet: PM10 NOAA other________

Material: stainless steel conductive tubing other________

Design: vertical ___ meters horizontal ___ meters bends ___________

tube diameter: ___ mm flow rate: ___ l/min

Calculated Reynolds number (use aerocalc): ______________

Calculated residence time in tube: ______________

Aerosol dryer: yes no type:______________________________

Relative humidity of aerosol: ____% RH not available

Inlet according to recommendations: yes no

Comments:________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Absorption:

Aethalometer       MAAP       PSAP       Other: ___________________________    n/a
Type: ________________    Serial number: ________________
Wavelengths: ______________________________________________
Firmware version: _________________________________________
Software version: _________________________________________
Data format: ___________________________(e.g. scientific=12 for MAAP)

Last calibrated: ____________________________ by ____________________________
Nominal flow rate: ____________ measured flow rate: ____________ at __________ hPa, __________ C
Flow rate indicated on front panel: ____________________________
Indicated concentration with absolute filter: ____________________________
Current transmission: ____________ %
Last filter change: ____________ at ____________ % transmission

Condition of instrument:      excellent  good  fair  poor

Data submitted to data centre: yes    no

Comments: ____________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________
Scattering Coefficients:

Nephelometer: TSI  Ecotech  Radiance Research  Other: ___________  n/a
Type: _________________  Serial number: ___________________
Wavelengths: ______________________________________________
Firmware version: _________________________________
Software version: _________________________________

Gases for span check:  CO₂  SF₆  n/a
Last zero check: ______________  last span check: _______________
Last calibrated: ______________  by _____________________________

If possible ask for calibration of the instrument by station personnel.
Compare new calibration constants with previous calibrations recorded in logbooks.
Nominal flow rate: ___________  Measured flow rate: ___________  at ___ hPa, ___ C

Condition of instrument:  excellent  good  fair  poor

Data submitted to data centre:  yes  no

Comments: ____________________________________________________
______________________________________________________________
______________________________________________________________
Mass concentration:

TEOM Filter based Other: ___________ n/a

TEOM:
Type: _______________ S/N control unit: ____________ S/N sensor: __________
Firmware version: _______________________________
Software version: _______________________________
Temperature settings: Sample:_______ Sensor:_______

Indicated concentration with absolute filter: _______________________________

Separate inlet yes type:_______ no
Nominal sample flow rate: ________ measured: ________ at ___hPa, ___C
Sample flow rate indicated on front panel: _______________________________
Nominal bypass flow rate: ________ measured: ________ at ___hPa, ___C
Bypass flow rate indicated on front panel: _______________________________
Nominal total flow rate: ________ measured: ________ at ___hPa, ___C

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Filter based measurements:

Nominal sample flow rate: _________ measured: ________ at___hPa, ____C
Volume calculated from Gas meter Flow rate and time
Filter weighing on site: yes no

If filter weighing on site: Weighing room temperature: ______
Weighing room rH: ______
Type of microbalance: ________________ S/N: ______
If weighing off site: Filter shipping documented yes no

Data submitted to data centre: yes no

Comments:________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Particle number size distribution:

Type of instrument:_________ Manufacturer:_______ S/N: ________________
Type of charger_________ Nominal Activity_____ Date manufactured_______

Aerosol dryer: yes no Type________________________________________
Sheath air dryer: yes no Type________________________________________
Temperature sensor aerosol: yes no
Temperature sensor sheath air: yes no
Humidity sensor aerosol: yes no
Humidity sensor sheath air: yes no

Nominal sheath air flow rate _____ l/min
Measured sheath air flow rate: _________ at ___ hPa, _______ C
Nominal aerosol flow rate ______ l/min
Measured aerosol flow rate: _________ at ___ hPa, _______ C
Indicated concentration with absolute filter: __________________________________
Instrument built according to recommendations: yes no

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_______________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Particle number concentration

Type of instrument: ___________ Manufacturer: ___________ S/N: ______
Nominal ______ flow rate: ______ measured: ______ at ______ hPa, ______ °C
Last flow calibration: ____________________
Last efficiency calibration: ________  Material: ______ Which lab: ___________
Indicated concentration with absolute filter: __________________________________
Condition of instrument:  excellent  good  fair  poor

Nominal ______ flow rate: ______ measured: ______ at ______ hPa, ______ °C
Last flow calibration: ____________________
Last efficiency calibration: ________  Material: ______ Which lab: ___________
Indicated concentration with absolute filter: __________________________________
Condition of instrument:  excellent  good  fair  poor

Nominal ______ flow rate: ______ measured: ______ at ______ hPa, ______ °C
Last flow calibration: ____________________
Last efficiency calibration: ________ Material: ______ Which lab: ___________
Indicated concentration with absolute filter: __________________________________
Condition of instrument:  excellent  good  fair  poor

Data submitted to data centre:  yes  no

Comments: ________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Cloud condensation nuclei concentration

Type of instrument: ___________  Manufacturer: _______________  S/N: ______

Supersaturations used: 0.1  0.2  0.3  0.5  1.0  other: ________________________

Software status lights green: yes  no: __________________________________

Aerosol ______ flow rate: _______ measured: _________ at ______ hPa, ______ C

Total ______ flow rate: _______ measured: _________ at ______ hPa, ______ C

Indicated concentration with absolute filter: _________________________________

Last flow calibration: ____________________________

Last supersaturation calibration: _________ Material (NH₄)₂SO₄  other: ______

Last OPC calibration (optional): ________________

Condition of instrument: excellent  good  fair  poor

Data submitted to data centre: yes  no

Comments: _______________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
General remarks:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Date:__________________  Signature:_______________________________