3(4) New Aerosol Observing Systems

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ASR, Science Team Meeting, Baltimore, MD

RECOVERY.GOV

Atmospheric Radiation Measurement Climate Research Facility
A National User Facility for the Scientific Community

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Equipment

MAOS

- CCN-200
- PSAP
- ***Aethalometer***
- PASS-3
- ***SP2*** (~5 GB/h!!)
- Dual Nephelometer Hygrometer
- CPC (>10 nm)
- ***CPC (>2.5 nm)***
- ***UHSAS***
- ***SMPS***
- HTDMA
- ***PILS***
- ***PTRMS***
- ***ACSM***
- ***Carbon Monoxide***
- Ozone
- ***Sulfur Dioxide***
- ***NO_x (NO, NO_2, NO_y)***
- Local Meteorology
- SODAR
- Profiler

AMFII AOS

- CCN-200
- PSAP
- Dual Nephelometer Hygrometer
- CPC (>10 nm)
- HTDMA
- Ozone
- Local Meteorology

TWP-D AOS

- CCN-200
- PSAP
- Dual Nephelometer Hygrometer
- CPC (>10 nm)
- ***ACSM***
- HTDMA
- Ozone
- Local Meteorology

AAF (BNL Participation)

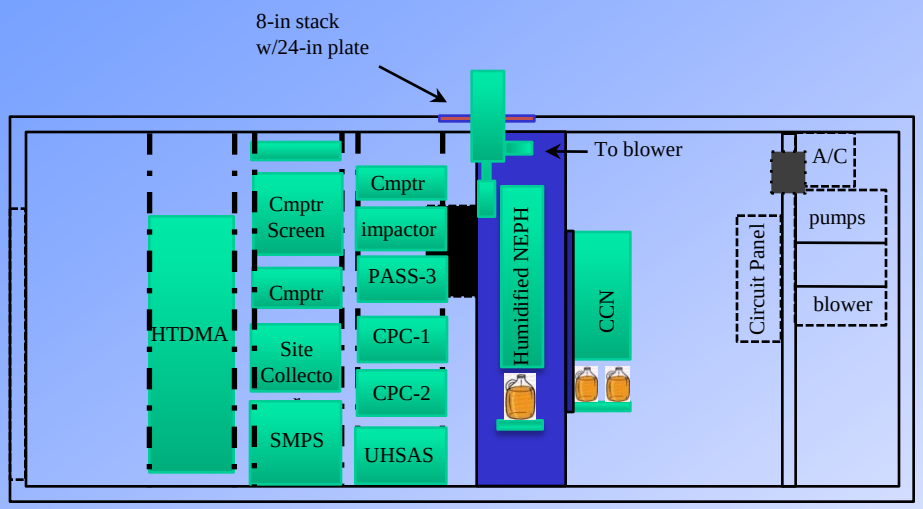
- PILS
- SMPS
- SP2
- Carbon Monoxide
- Ozone
- Sulfur Dioxide
- **NOx (NO, NO2, NOy)**

Character

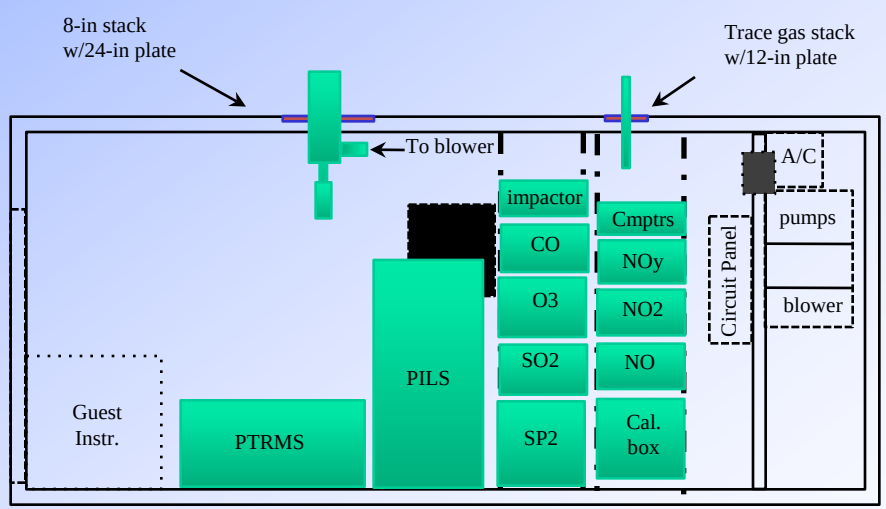
- Self Contained
  - Power
  - Internet
- Portable/Robust
  - Instruments permanently installed (shock mounted), plumbed, wired
  - Pumps, electrical service entrance installed in ventilated vestibule
  - External items shipped internally (inlet)
  - Turtle mode in ~8 h
- Flexible
  - Heat/Cold, Wind
  - Marine/Land
  - Guest instruments (power, rack space, sampling, computers)
  - Bandwidth availability
  - Comparability
- Smart Control
  - ‘Master’ Computer
  - Local/Remote control of individual systems
  - Remote/Auto Restart and Shutdown

Bluish Prints

Mobile Aerosol Observing System (MAOS-A)

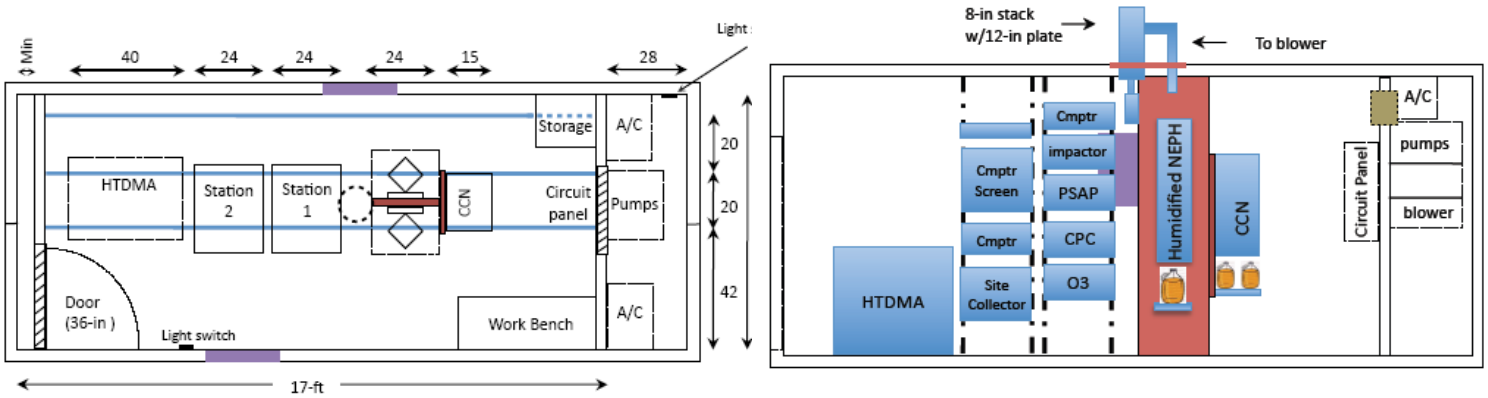


Mobile Aerosol Observing System – C (MAOS-C)



Bluish Prints

PLAN – Tropical West Pacific/Darwin Aerosol Observing System



Notes:

Shares same layout with AMF-II
Insulated Walls (assumed thickness: 4 in)

Station 1: PSAP; Impactor; CNC; O3; power dist.
Station 2: Site Collector; instrument computer; power dist.

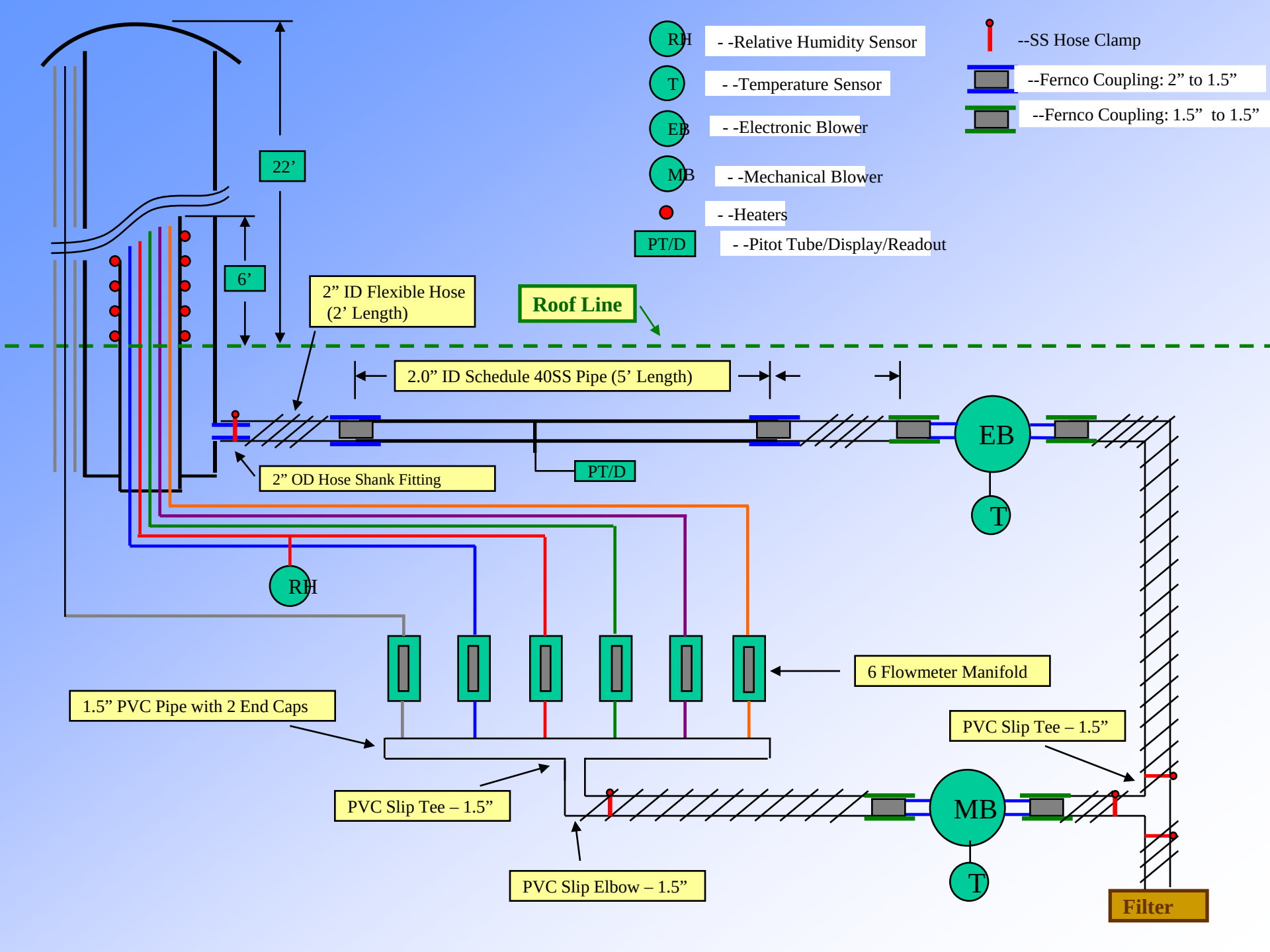
Rails for instrument rack mounting (structural assessment required)

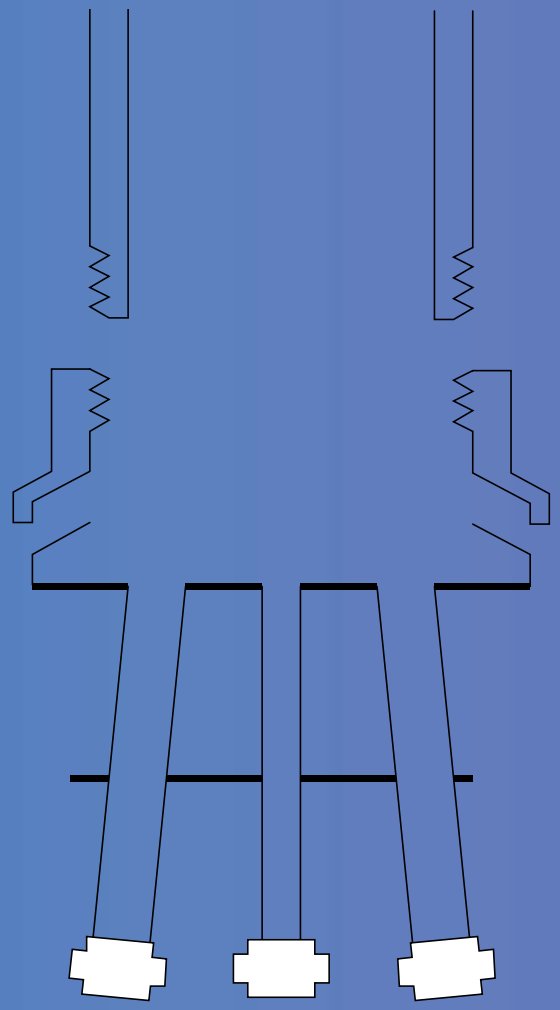
Portal for future use (2' x 2')

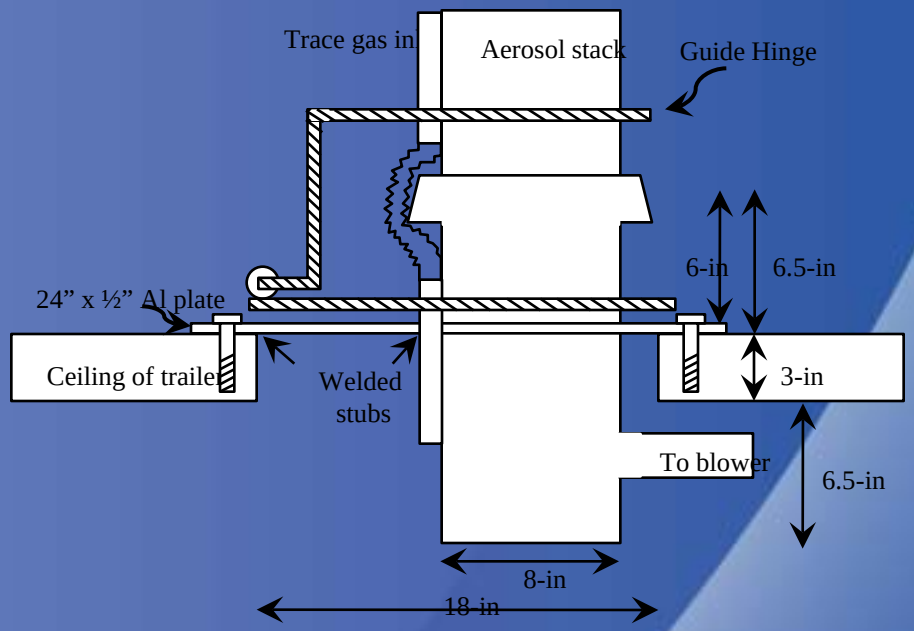
Egress (main door & emergency kick out panel)

Plate for aerosol inlet

BROOKHAVEN NATIONAL LABORATORY	S. R. Springston & A. J. Sedlacek		TWP/Darwin AOS layout
	9/15/09	Revision: 06	Number 1 of 5
	All units inches, unless explicitly stated		File: 090915_TWP_rev6


RH - -Relative Humidity Sensor
T - -Temperature Sensor
EB - -Electronic Blower
MB - -Mechanical Blower
- -Heaters
PT/D - -Pitot Tube/Display/Readout
--SS Hose Clamp
--Fernco Coupling: 2” to 1.5”
--Fernco Coupling: 1.5” to 1.5”
22’
6’
2” ID Flexible Hose (2’ Length)
Roof Line
2.0” ID Schedule 40SS Pipe (5’ Length)
EB
T
2” OD Hose Shank Fitting
PT/D
RH
6 Flowmeter Manifold
1.5” PVC Pipe with 2 End Caps
PVC Slip Tee – 1.5”
PVC Slip Tee – 1.5”
MB
T
PVC Slip Elbow – 1.5”
Filter





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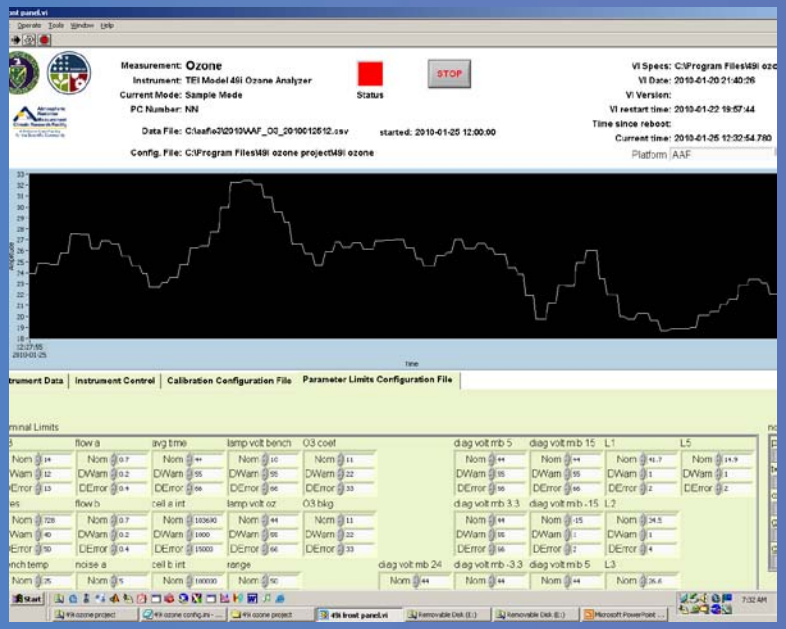
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Instrument: TEI Model 49i Ozone Analyzer
Current Mode: Sample Mode
PC Number: NN
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STOP
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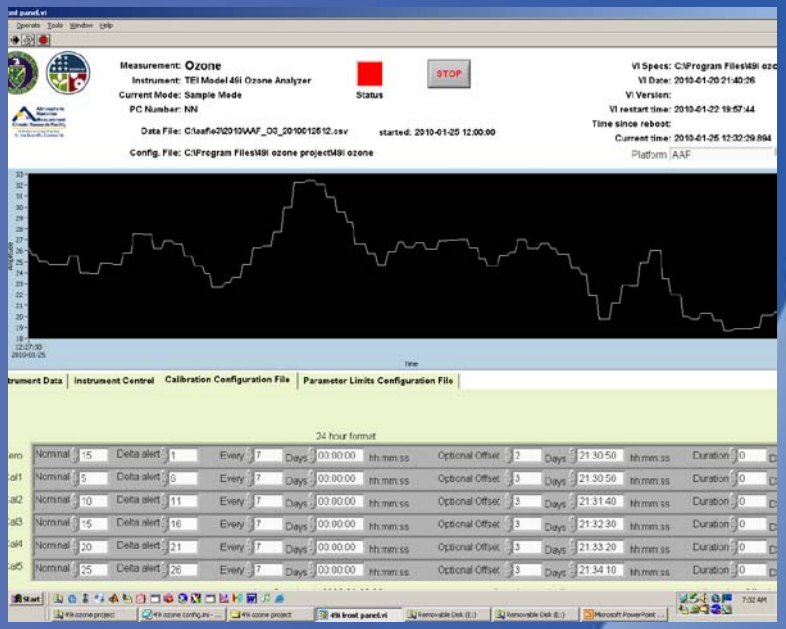
started: 2010-01-25 12:00:00
Config. File: C:\Program Files\49i ozone project\49i ozone
Platform AAF
Instrument Data
Instrument Control
Calibration Configuration File
Parameter Limits Configuration File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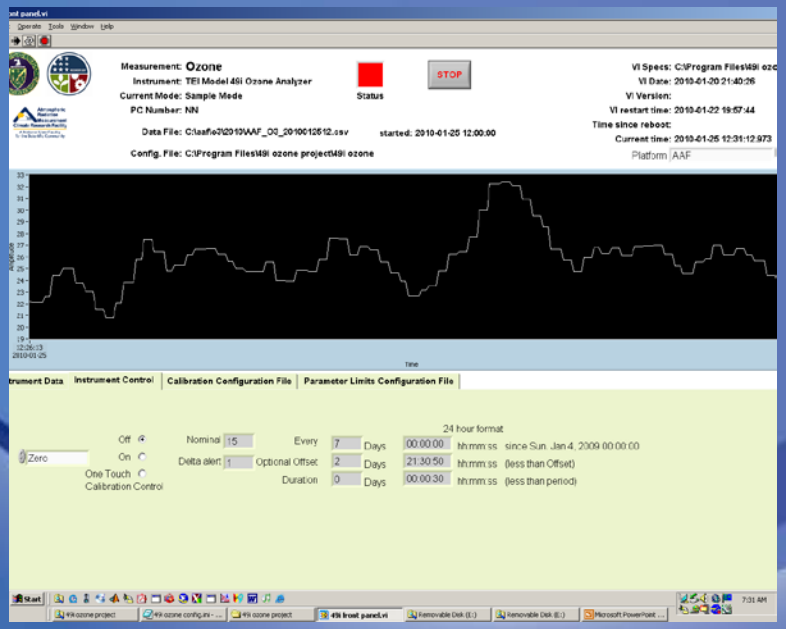
24 hour format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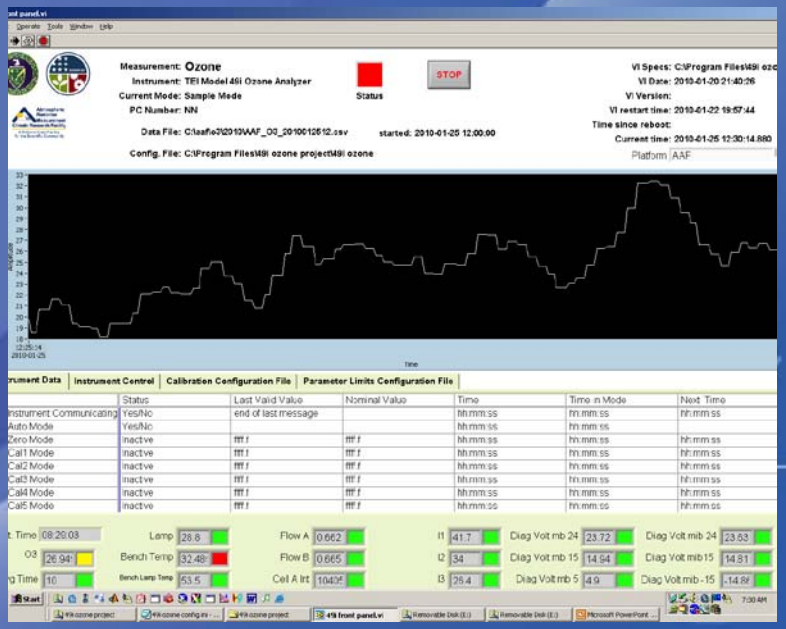
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