



Air Resources Board



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TECHNICAL BULLETIN 801-2

**Xonteck Model 924 Sampler
October 2014**

Issue

The Monitoring and Laboratory Division's (MLD) Northern Laboratory Branch (NLB) and Air Quality Surveillance Branch (AQSB) are implementing a new sample handling procedure and sample make-up requirements for the Xonteck 924 program. This involves sample media from all three channels: Carbonyls, Total Metals, and Hexavalent Chromium.

This sample handling procedure follows the National Air Toxics Trends Stations (NATTS) program thereby allowing our data to be compared to nationwide data. The new sample handling criteria stabilizes the chemical reactions on the sample media, which will provide better recovery of the determined analytes. For consistency, this sample handling procedure utilizes practices from other sample handling programs.

Solution

The technical bulletin describes field procedures for receipt of Xonteck 924 sample media at the site, retrieval of sample media from the Xonteck 924 sampler, and shipment of sample media to the laboratory. In addition, a make-up procedure is provided for the Xonteck 924 program.

Sample media will be shipped to sites and immediately placed in a freezer until sampling. Sample media will be placed on the Xonteck 924 sampler no more than five days prior to sampling date. After sampling, sample media will be retrieved from the sampler within 48-hours and placed in a freezer pending shipment to the laboratory for analysis. If unable to retrieve sample media within the 48-hours requirement, a make-up sample may be requested by staff. An alternate scheduled run procedure is initiated when the 48-hour retrieval from the Xonteck 924 sampler is not attainable, such as when a scheduled sample date falls on a Friday. Samples must be shipped to the laboratory within five days of the sampling date under cold conditions.

Procedure

Effective October 1, 2014 ARB MLD will require station operators to begin following the new sample handling requirements for the Xonteck 924 program. The new sample handling procedures require a temperature controlled shipment of sample media back

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to the laboratory. Therefore, a sample shipment will now contain ice packs and temperature strips in addition to the sample media. The detailed procedure for sample handling is below:

1. Xonteck 924 sample media will be shipped to the site in a bubble wrapped Ziploc bag. Included will be unfrozen blue ice packs and two inactivated temperature strips (one 5°C, one 25°C) to be used when shipping back to the laboratory.
2. The Chain of Custody (COC) form for the Xonteck 924 program has been updated (see attached). Upon receipt of the Xonteck 924 sample media, station operators should:
 - a. Confirm all barcodes (i.e. XK000123) match between the COC and all sample media (Carbonyls, Total Metals, and Hexavalent Chromium). There will be only one barcode for all sample media per sampling date.
 - b. Under the “Chain of Custody Record”, the station operator must sign and print name, date, and time on the COC for receipt of samples from lab (“Site In”).
 - c. Freeze all ice packs for return shipment.
 - d. Place all sample media in freezer until installed on sampler.
3. No more than five days prior to sample date, place all sample media on the Xonteck 924 sampler per AQSB SOP 801.
 - a. On the COC the station operator must complete the following:
 - i. Write the “Sampling Date”.
 - ii. Circle either “Scheduled” or “Non-Scheduled”.
 - iii. Write the “Sample Load Date/Time”.
 - iv. Circle the appropriate “Sample Type” and fill in necessary information.
 - v. Write the “Date Last Calibrated” of the Xonteck 924 sampler.
 - b. For Carbonyl cartridge only: Sample media is in a barcoded heat-sealed envelope. Open package and write on the cartridge the “non-zero” barcode digits (i.e. barcode is XK000123, “123” is written) before placing on sampler (see Figure 1). Keep this barcoded envelope. The envelope will be used to ship the sample media back to the laboratory.



Figure 1 Labelled Carbonyl Cartridge with barcoded envelope.

4. Sample media must be retrieved within 48 hours of sampling from the Xonteck 924 sampler and immediately placed in the freezer until they are shipped back to the laboratory.
 - a. The station operator must complete the COC with the following:
 - i. Write the "Sample Retrieval Date/Time".
 - ii. Tape or staple the printout from the Xonteck 924 sampler that shows the data for each channel onto the COC. Verify that the printout is placed in the correct box on the COC.
 - a. If no tag is available (i.e. no printer tape available), then handwrite the necessary data on the COC.
 - iii. Circle appropriate "Local Sampling Condition Codes".
 - iv. Fill out the "Invalidation Status" and additional comments, as necessary.
 - b. Verify that all labelled sample media correspond with the barcoded COC.
 - i. For Carbonyl cartridge only: Place the labelled cartridge in the appropriately barcoded envelope and reseal securely.
5. A laboratory issued annual calendar depicting the sample schedule (based on U.S. EPA's Sample Schedule), sample media from the laboratory, and make-up dates (due to 48-hour retrieval criteria) will be sent to all station operators.

Make-up guidelines:

- a. Make-up only the invalid sample channel. Do not use the other sample media, but ship them back to the laboratory as "Not sampled". On the COC, check the appropriate box in the "Invalidation Status" section and add comments, as necessary.
 - b. For sample dates not allowing the 48-hour retrieval from the Xonteck 924 sampler (such as a Friday or certain Holidays), the previous one-in-six sampling date will be recommended as the alternate scheduled sample run date. For example, if a scheduled sampling date is August 15, a Friday, the alternate scheduled run date will be August 9, a Saturday. However, refer to the laboratory issued calendar for more information pertaining to alternate sample dates.
 - c. For collocated sites, if either the primary or collocated sample is invalid, then samples will be made-up for both Xonteck 924 samplers for the invalid channel(s) only.
6. All samples must be shipped back to the laboratory regardless of sample validation within five days from sampling date at temperatures less than 4°C. Samples must be kept in the freezer until shipment to the laboratory.

- a. Under the “Chain of Custody Record”, the station operator must sign and print name, date, and time on the COC for shipment of samples to the lab (“Site Out”).
- b. Place the sample media listed below in Ziploc bubble wrapped bag:
 - i. Total Metals
 - ii. Carbonyls and KI filter
 - iii. Hexavalent Chromium
 - iv. Chain of Custody
- c. Place sample media in center of the Styrofoam shipping container surrounded by frozen blue ice packs.
- d. Place activated 5°C and a 25°C temperature strips in the Styrofoam shipping container with the sample media.
- e. Mondays through Wednesdays are the preferable shipment dates. This minimizes the amount of time the cold samples are in shipment. Do not ship samples to the laboratory on Fridays.

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Xonteck 924 Chain of Custody

Barcode Here

LIMS ID Number: _____

Site Name: _____ Site Operator/Agency: _____

Site Address: _____ Instrument No.: _____

Sample Collection Data

Sampling Date: _____ Circle one: Scheduled or Non-Scheduled

Sample Load Date/Time: _____

Sample Retrieval Date/Time: _____

Sample Type (Circle One): Regular Collocated Make-Up Date _____ (Add reason in Field Comments below)

Aldehydes (A)
Place Printout Here

Total Metals (T)
Place Printout Here

Hexavalent Chromium (C)
Place Printout Here

Local Sampling Condition Codes (Circle One):

Farming Nearby Forest Fire Highway Construction No Unusual Conditions Construction Nearby
 Structural Fire Other (Add reason in Field Comments below) High Winds Sanding/Salting Streets

Site Quality Control: Date Last Calibrated _____

Invalidation Status: Check appropriate boxes

Invalid Reasons:

Contaminated/Damaged Filter
Erratic Flowrate
High/Low Flowrate
Duration Out of Range

A	T	C

Power Outage
Sampler Malfunction
Not Sampled
Other (Add reason below)

A	T	C

Field Comments: _____

Chain of Custody Record (Need Signature/print name, date, time)

Circle Time
Period

Lab Out	AM	PM
Site In	AM	PM
Site Out	AM	PM
Lab In	AM	PM

Temperature upon receipt in Laboratory (Circle one) < 4°C 4°C - 25°C >25°C

Laboratory Analysis

Lab Comments: _____