

# **Demonstration of Metal Sample Collection Using Clean Hands/Dirty Hands Technique**

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## **Preliminary Preparation**

- Laboratory cleans a fluoropolymer sample collection bottle, adds 1 mL double-distilled HNO<sub>3</sub> per liter capacity and double bags the bottle in zip type bags.
- Sample collectors clean and bag sampling equipment.
- Sample collectors prepare sampling packages.

## **Sampling Packages**

- Designated clean cooler containing:
  - Cleaned and bagged sample tubing
  - Zip bags with dust masks and non-talc Class 10 clean gloves
  - Plastic sheet for ground cover
  - Sample bottle (from laboratory)
  - Tyvek suits- (optional)
- Peristaltic pump with easy load head. Extension cord, if necessary.
- Waste bucket.
- Cold storage cooler.

## **Site Preparation**

- Upon arrival at the sampling site, the sample collectors unload equipment and prepare for sample collection.
- Anything covering the sample site, such as a grate, is removed and set aside.
- Plastic is laid out for ground cover, with coolers on the ends to secure.
- Set up peristaltic pump.
- Clean Hands (CH) and Dirty Hands (DH) sample collectors get into position.
- CH and DH wait ten minutes before beginning sample collection to allow the sampling environment to stabilize.

## **Sample Collection**

- DH opens the cooler and removes plastic bags containing gloves and masks.
- CH and DH put on dust masks first and then gloves.
- DH removes the bag containing the sample tubing from the cooler.
- DH opens the bag.
- CH removes the tubing and does not allow the tubing to touch anything.
- CH removes the protective covering from the inlet side of the tubing.
- CH lowers the weighted end of the tubing into the sampling location.
- Once the inlet end of the tubing enters the sample stream, DH holds the tubing to make sure the inlet end and sides of the tubing do not contact anything.

- DH inserts the flexible portion of the tubing into the peristaltic pump, while CH holds the discharge end of the tubing, protecting it from contamination.
- CH removes the protective covering from the discharge end of the tubing and holds it over the purge container.
- CH tells DH to turn the pump on.
- CH holds the sample line over a purge container while purging for a minimum of five minutes.
- After purging, CH tells DH to turn the pump off.
- DH opens the cooler containing the double-bagged sample bottle.
- DH opens the outside bag and does not touch the inside bag.
- CH removes the inside bag (containing the sample bottle).
- CH opens the bag and sample bottle.
- CH holds the discharge end of the tubing over the sample bottle and tells DH to turn the pump on.
- Once the sample bottle is filled, CH tells DH to turn the pump off.
- CH tightly caps the sample bottle and reseals it in the inside plastic bag.
- DH holds the outside bag open and CH places the inside bag, with the sample, into it.
- DH reseals the outside bag.
- The sample is then placed into the cold storage cooler.
- Sampling site is cleaned and the sample is transported to the lab.

