Gas Sampling Procedure for High Level Mercury

Equipment Needed

Gas-tight syringe with side-port needle (side-port needle strongly recommended to avoid coring septa material).

Hg-free Air or nitrogen carrier gas (scrub with fresh HGR carbon or other mercury scavenger if needed).

Rotameter or other flow measurement device capable of attaining and regulating the carrier gas at approximately 500 mL/min.

Septa-equipped stainless steel T-fitting (supplied by IGT)

Gold-coated silica bead sampling tube (supplied by IGT).

Sampling Procedure

Assemble the sampling tee as in Figure A. Passivate all surfaces, including syringes, tubing, gas-tight fittings, and so forth, that are exposed to the sample by flushing with multiple aliquots of sample gas. Connect a gold-coated silica bead sampling tube at the downstream side of the tee as in Figure B. The gas-tight syringe is then filled with sample, and the sample aliquot (10-100 ml) is injected onto the gold-coated silica sampling tube.

The injection is made using a gas-tight "T" fitting equipped with a silicone septum at one end of the quartz tube. The septum is placed at a right angle with the carrier gas entering directly in line with the tube. The syringe tip should extend beyond the "T" and into the stream of air flowing into the sampling tube when an injection is made. Quickly withdraw the syringe after the injection, and let the carrier gas flow for 90 sec. Seal the ends of the tube with a gas-tight fitting.

Record ambient temperature, pressure and injection volume and include this information in the shipment to IGT.

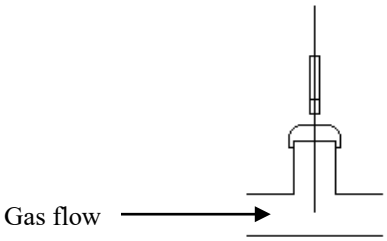

Figure A. N2 or air passivation

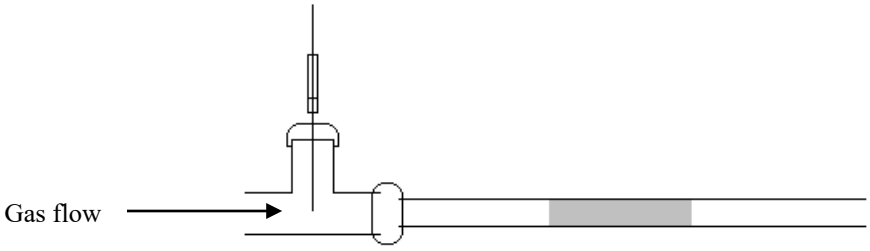

Figure B. Sampling