

SPECTROPHOTOMETRIC ANALYSIS 208

Determination of Elemental Metals Using the HVG-1 Hydride Vapor Generator (No. 2)

The flame atomic absorption analysis is now employed widely as an indispensable technique in the field of analysis for trace metals, and in particular it is most suited to the field of water quality analysis. Recently, in order to measure ultra traces of harmful metals quickly and at high

sensitivity, analysis has been attempted using accessories such as a graphite furnace and hydride vapor generator.

This is to show examples of measurement of Hg, Sb and Bi in wastewater using the HVG-1 hydride vapor generator.

Construction of HVG-1

As shown in Fig. 1, the HVG-1 generates metal hydrides in the gas phase by the introduction of solutions of 5M hydrochloric acid and 0.5% sodium borohydride into the reaction unit, and feeds the vapor into the absorption cell.

The absorption cell is heated by air-acetylene flame, and the hydride is decomposed into atoms, whose absorptions are measured. In the determination of mercury, the cell is not heated.

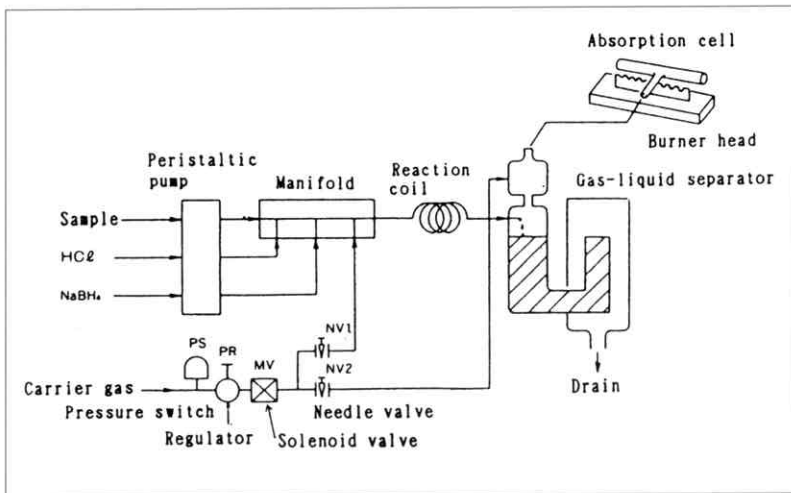


Fig. 1 Flow Path Diagram

Determination of Hg

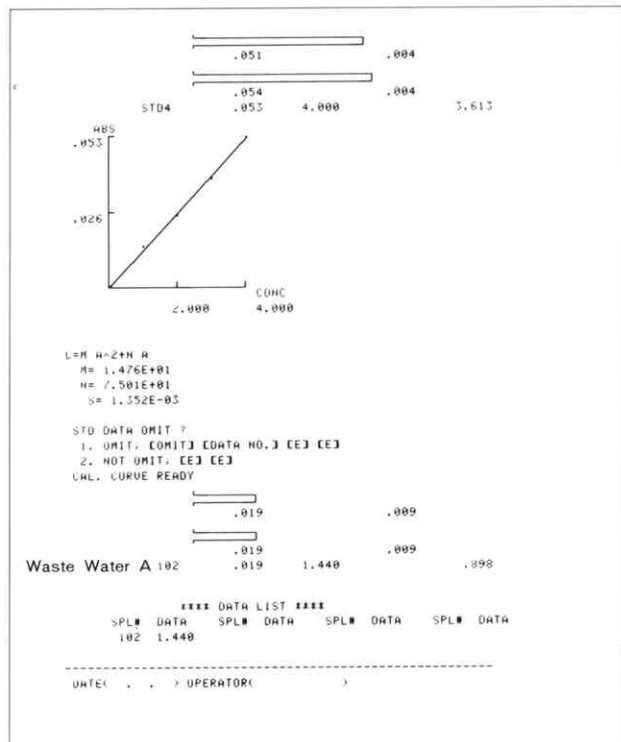
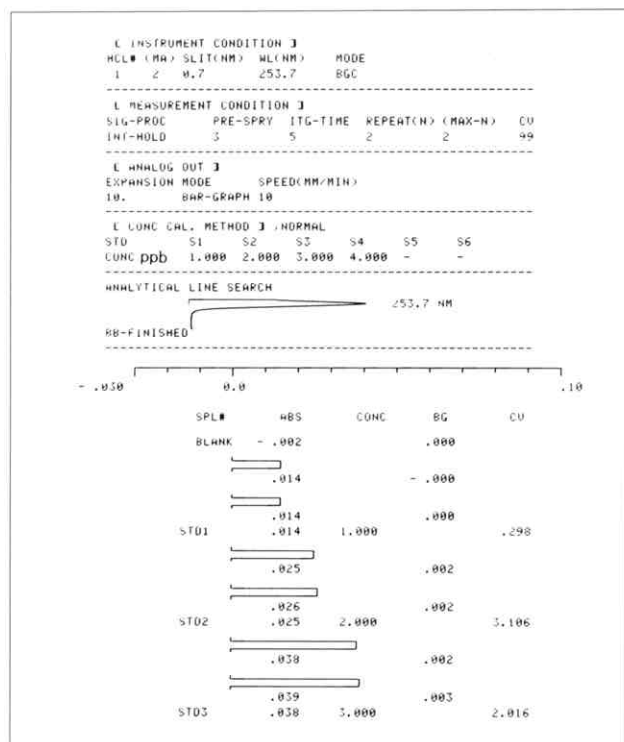


Fig. 2 Determination of Hg

■ Determination of Sb

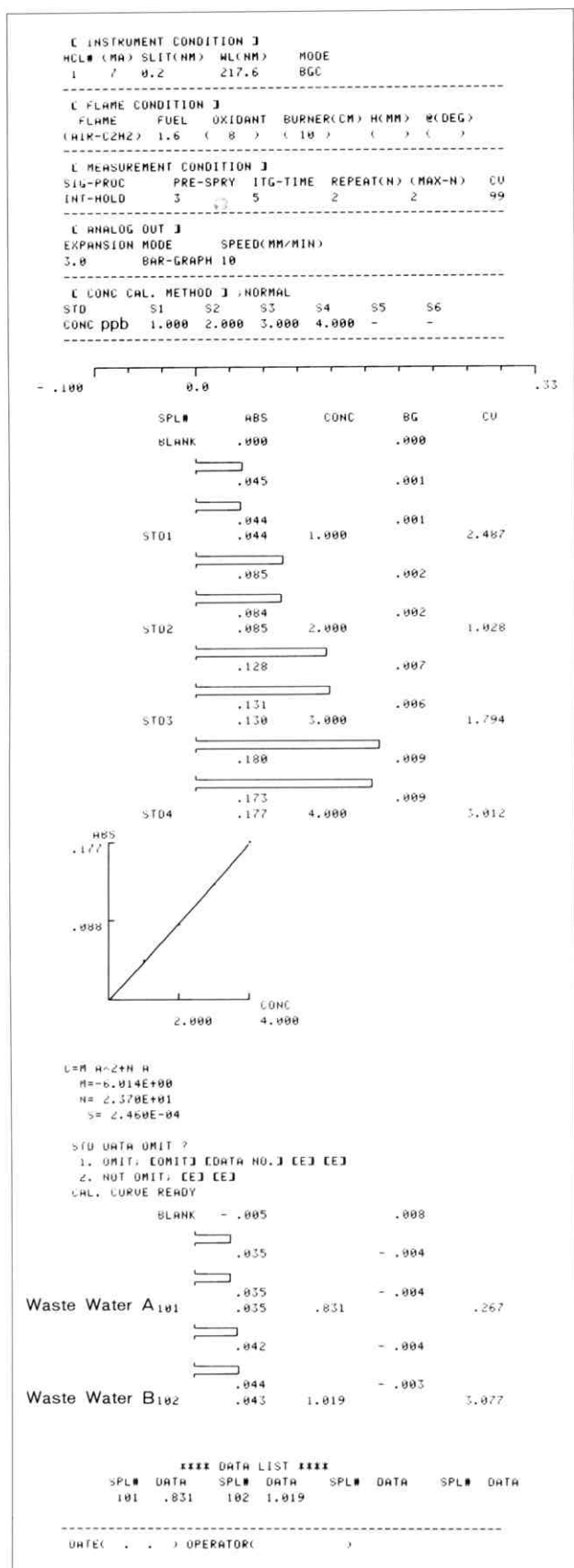


Fig. 3 Determination of Sb

■ Determination of Bi

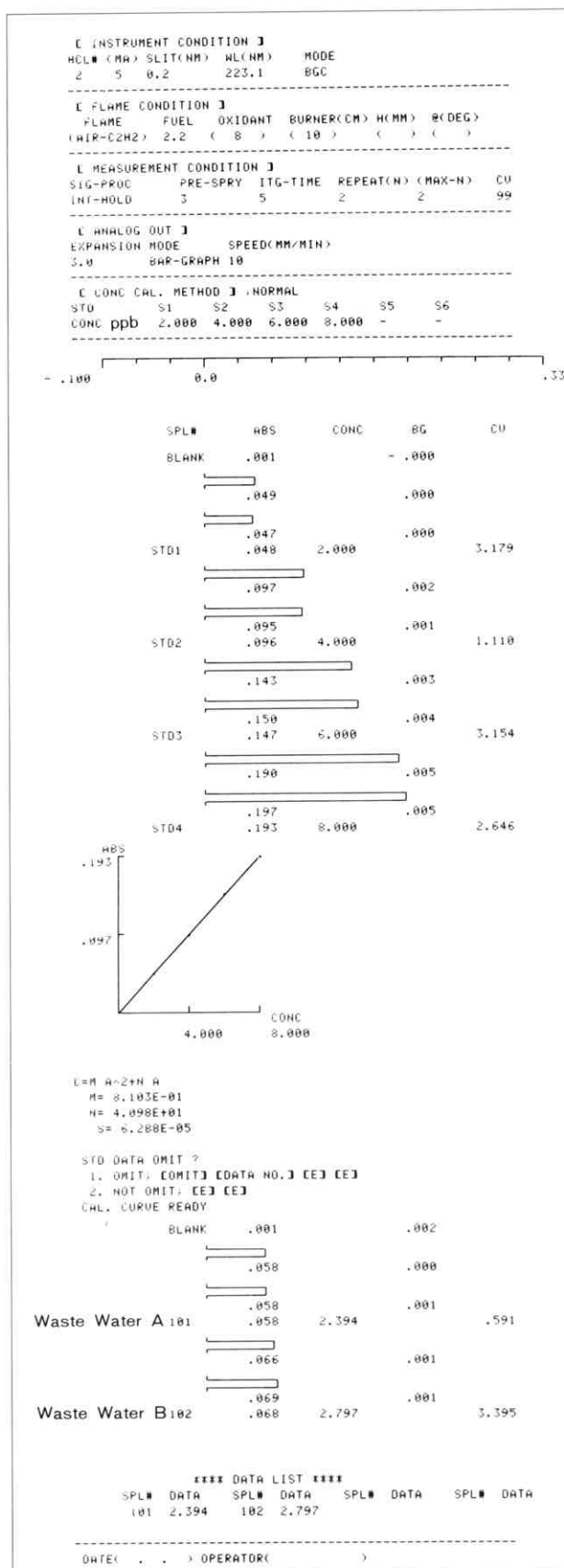


Fig. 4 Determination of Bi



SHIMADZU CORPORATION, International Marketing Division

3, Kanda-Nishikicho 1-chome, Chiyoda-ku, Tokyo 101, Japan Phone: 81(3)3219-5641 Fax: 81(3)3219-5710

Cable Add: SHIMADZU TOKYO Overseas Telex No. 0232-3291 (SHMDT J)