METHOD #: 272.2	Approved for NPDES and SDWA (Issued 1978)
TITLE:	Silver (AA, Furnace Technique)
ANALYTE:	CAS # Ag Silver 7440-22-4
INSTRUMENTATION:	AA
STORET No.	Total 01077 Dissolved 01075 Suspended 01076
Optimum Concentration Range: **Detection Limit:**	1-25 μg/L 0.2 μg/L

1.0 Preparation of Standard Solution

1.1 Stock Solution: Prepare as described under "direct aspiration method".
1.2 Prepare dilutions of the stock solution to be used as calibration standards at the time of analysis. These solutions are also to be used for "standard additions".
1.3 The calibration standard should be diluted to contain 0.5% (v/v) HNO_3.

2.0 Sample Preservation

2.1 For sample handling and preservation, see part 4.1 of the Atomic Absorption Methods section of this manual.

3.0 Sample Preparation

3.1 Prepare as described under "direct aspiration method". Sample solutions for analysis should contain 0.5% (v/v) HNO_3.

4.0 Instrument Parameters (General)

4.1 Drying Time and Temp: 30 sec-125°C.
4.2 Ashing Time and Temp: 30 sec-400°C.
4.3 Atomizing Time and Temp: 10 sec-2700°C.
4.4 Purge Gas Atmosphere: Argon
4.5 Wavelength: 328.1 nm
4.6 Other operating parameters should be set as specified by the particular instrument manufacturer.

5.0 Analysis Procedure

5.1 For the analysis procedure and the calculation, see "Furnace Procedure" part 9.3 of the Atomic Absorption Methods section of this manual.

6.0 Notes

6.1 The above concentration values and instrument conditions are for a Perkin-Elmer HGA- 2100, based on the use of a 20 μL injection continuous flow purge gas and non-pyrolytic graphite. Smaller size furnace device or those employing faster rates of atomization can be operated using lower atomization temperatures for shorter time periods than the above recommended settings.

6.2 Background correction may be required if the sample contains high dissolved solids.

6.3 The use of halide acids should be avoided.

6.4 If adsorption to container walls or formation of AgCl is suspected, see NOTE 3 under the Direct Aspiration Method 272.1.

6.5 For every sample matrix analyzed, verification is necessary to determine that method of standard addition is not required (see part 5.2.1 of the Atomic Absorption Methods section of this manual).

6.6 For quality control requirements and optional recommendations for use in drinking water analyses, see part 10 of the Atomic Absorption Methods section of this manual.

6.7 If method of standard addition is required, follow the procedure given earlier in part 8.5 of the Atomic Absorption Methods section of this manual.

6.8 Data to be entered into STORET must be reported as μg/L.

7.0 Precision and Accuracy:

7.1 In a single laboratory (EMSL), USing Cincinnati Ohio tap water spiked at concentrations of 25, 50, and 75 μg Ag/L, the standard deviations were ±0.4, ±0.7, and ±0.9, respectively. Recoveries at these levels were 94%, 100% and 104%, respectively.