



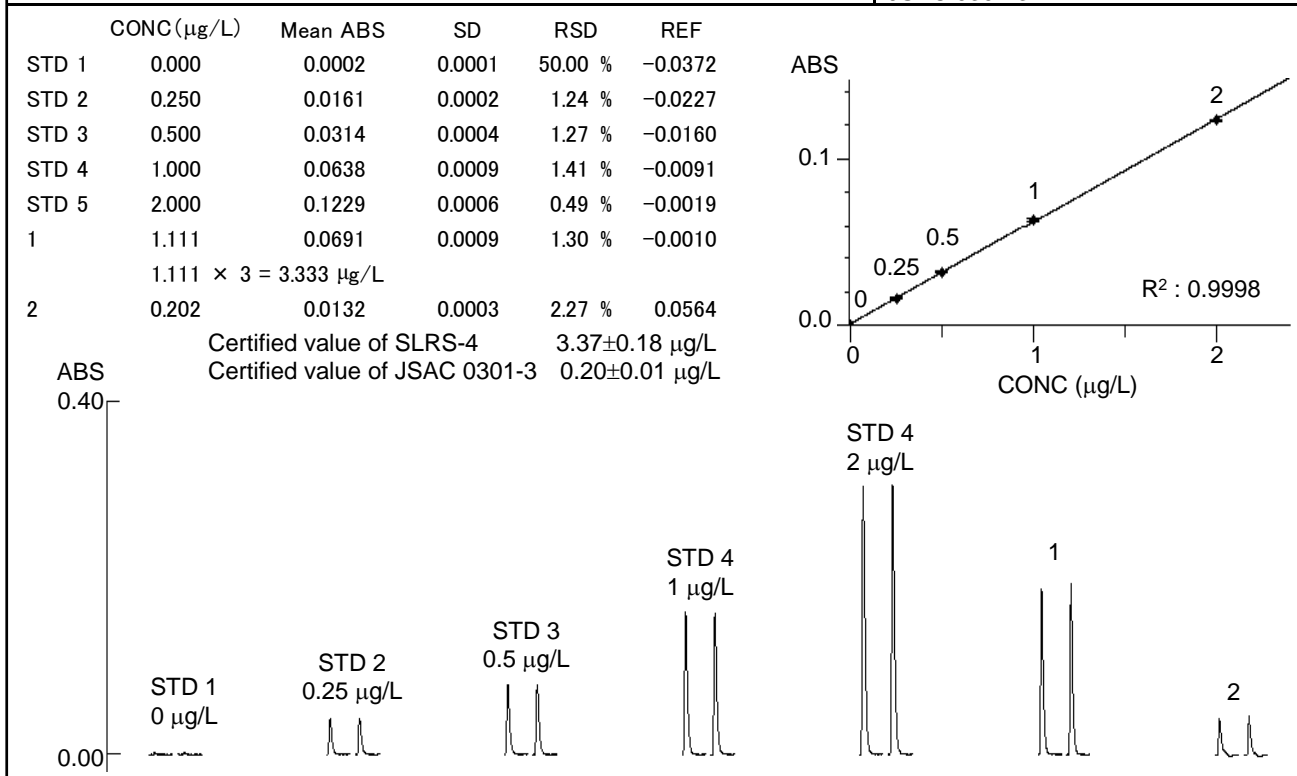
Analysis of Mn in River Water (Electrothermal Method)

ZA3000

INTRODUCTION: Manganese is an element of which concentration is required to measure from high to trace level in the field of environmental analysis. It is classified as an item to be monitored (guideline value of 0.2 mg/L) in environmental standards related to water contamination for health protection established by the Ministry of the Environment. By using the twin injection function, newly installed to ZA3000 series instruments, total manganese was analyzed in two types of river water. By increasing the injection volume to 60 μ L from the standard injection volume of 20 μ L, manganese at a ng/L level can be detected. A sample having a concentration exceeding the upper limit of the calibration curve can be injected at a reduced volume so that the sample can be quantitatively analyzed without any dilution by using the same calibration curve.

ANALYTICAL CONDITIONS	MEASUREMENT PARAMETERS	GA AUTOSAMPLER
Element : Mn Instrument : ZA3000 Atomization : GA Wavelength : 279.5 nm Lamp Current : 7.5 mA Slit Width : 0.4 nm Cuvette : Pyro D HR	Meas. Mode : Working Curve Signal Mode : BKG Corrected Curve Order : Linear Calculation : Peak Area Time Constant : 0.1 sec Temp. Control : ON	Sample Volume : 60 μ L Addition : Speed : 4
		MATRIX MODIFIER
		Matrix Modifier : Volume : μ L Order :

TEMPERATURE PROGRAM					NOTE
Stage	Initial/Final Temperature (°C)	Heating/Keeping (sec)	Gas Flow Rate (mL/min)	Gas	Pyro D HR, a cuvette specially designed for twin injection, was used for the measurement. Injection vol. of Sample 1 is set at 20 μ L, and the sample can be analyzed without dilution. Sample 1: SLRS-4 River Water Reference Material for Trace Metals Sample 2: River water certified reference material (without addition) JSAC 0301-3
1 Drying	80 / 140	40 / 0	200	Normal	
2 Incineration	750 / 750	20 / 0	200	Normal	
3 Atomization	2300 / 2300	0 / 3	0	Normal	
4 Cleaning	2800 / 2800	0 / 4	200	Normal	



KEY WORDS Environmental Analysis Related, Environmental Water, Clean Water, Environmental Chemistry, River Water, Manganese, Mn, Flameless, Graphite Furnace, Twin Injection, AA, ZA3000, GA, Pyro D HR, Environment	Atomic Absorption Photometer (AA)
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