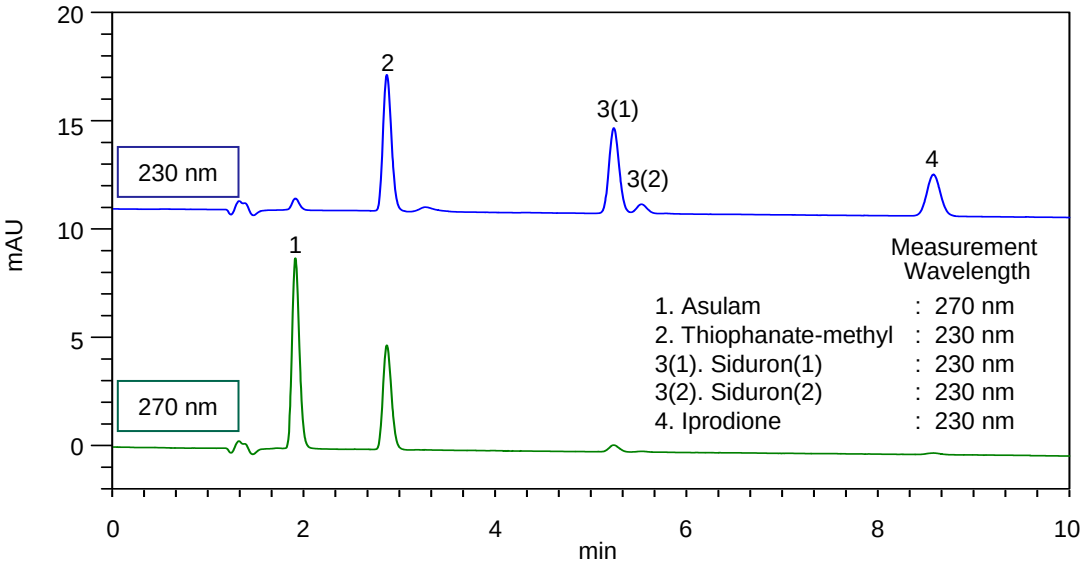
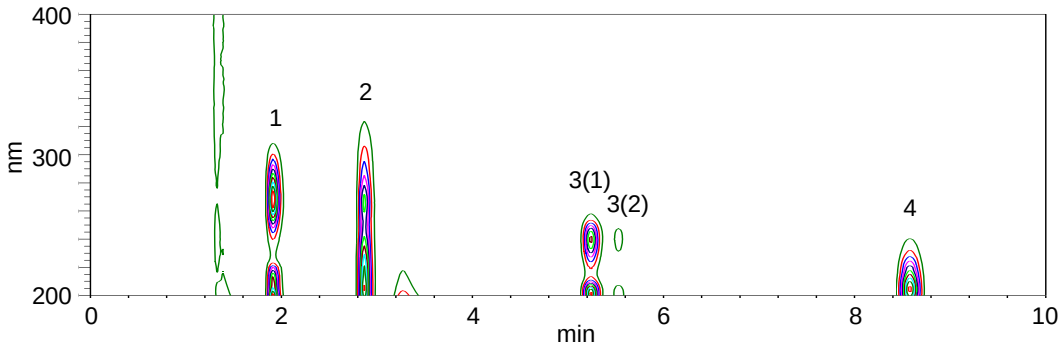
Analysis of 4 Pesticides in Water-Quality Control

Among the pesticides specified under the “Complementary Items for Water Quality Management in Japan”, four components, iprodione, asulam, thiophanate-methyl, and siduron, are to be analyzed at the same time by HPLC or by using the LC/MS method. As for the analysis accuracy, it is stated that the analysis for 1/100 of the target value (0.003 mg/L, 0.002 mg/L for asulam) must be performed with the variation coefficient of 20 % or less. As the sample is concentrated by 500 times during the preparation, the concentration to be measured by HPLC is 1.5 mg/L (1.0 mg/L for asulam). By using the DAD system which provides a high sensitivity, the sufficient analysis is possible. The analysis conditions were studied in accordance with “Appendix 9”.





[Contour Lines]

SAMPLE 10 μL of Std. Soln. (1 mg/L each) *	PRESSURE
PACKING MATERIAL HITACHI LaChrom C18 (3 μm)	TEMPERATURE 40 °C
COLUMN SIZE 4.6 mm I.D. × 150 mm (P/N : 891-5035)	SEPARATION METHOD Partition/Adsorption
ELUENT 50 mmol/L KH_2PO_4 (pH 3.0) / CH_3CN = 45 / 55 (v/v)	DETECTOR DAD 230, 270 nm INSTRUMENTS Chromaster 5110 (Pump), Chromaster 5210 (Autosampler), Chromaster 5310 (Column Oven), Chromaster 5430 (Diode Array Detector)
FLOW RATE 1.0 mL/min	

NOTE * The standard was prepared with acetonitrile.

KEY WORDS
Environmental Analysis Related, Clean Water, Environmental Water, Inorganic Chemistry, Environment, Water Quality, Water Quality Pesticide, DAD, Chromaster, Lachrom C18, Partition/Adsorption

High Performance Liquid Chromatograph (HPLC)

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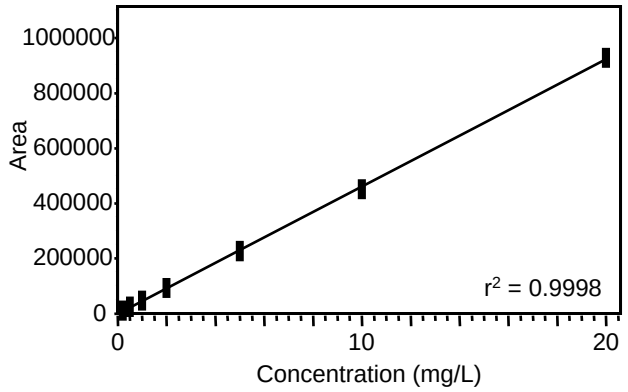
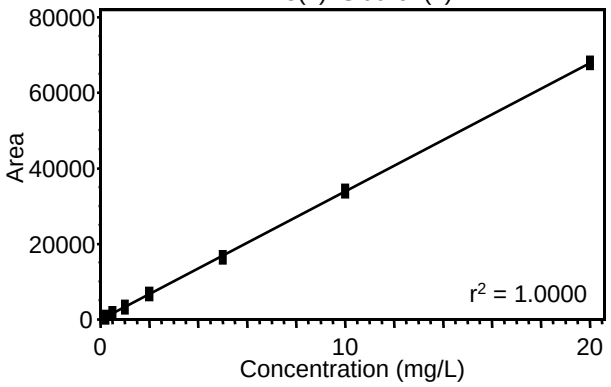
Calibration Curves of Pesticides

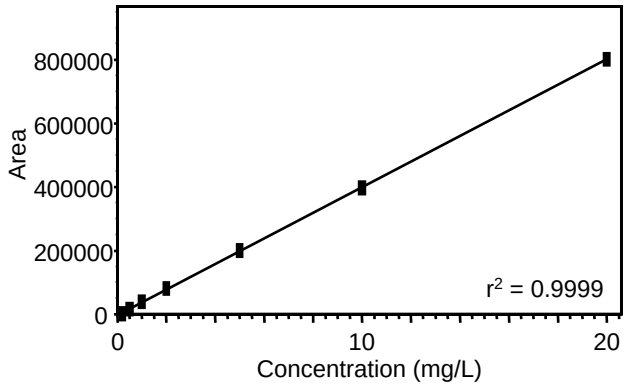
1. Asulam



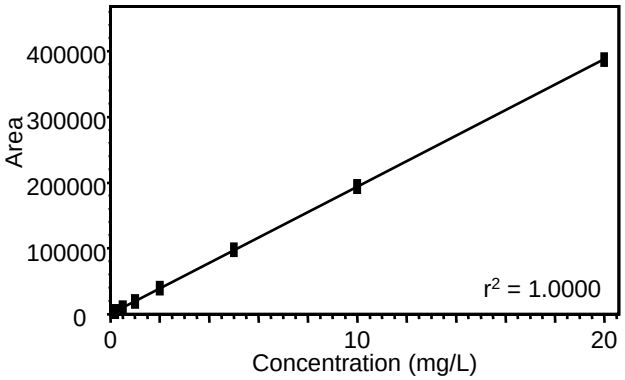
3(2). Siduron(2)



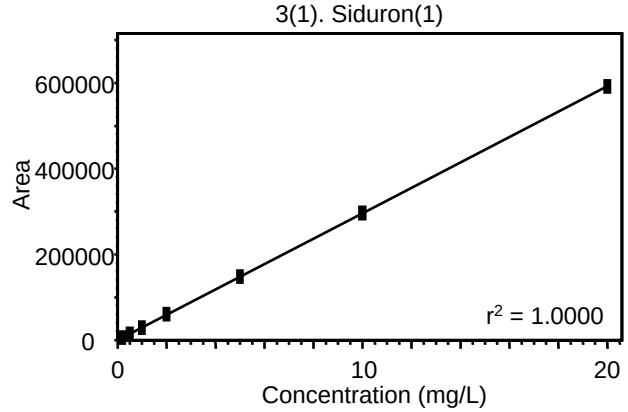
2. Thiophanate-methyl



4. Iprodione



3(1). Siduron(1)



[The range of the calibration curve is 0.2 - 20 mg/L]

High Performance Liquid Chromatograph (HPLC)

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