VA Application Note No. V- 10

Title:	**Zinc, cadmium, lead, copper, iron, nickel and cobalt in NaOH in one run**

***Summary*:**	Determination of Zn, Cd, Pb, Cu, Fe, Ni and Co in NaOH 50% in one run

Sample:	NaOH 50%
Sample Preparation:	none

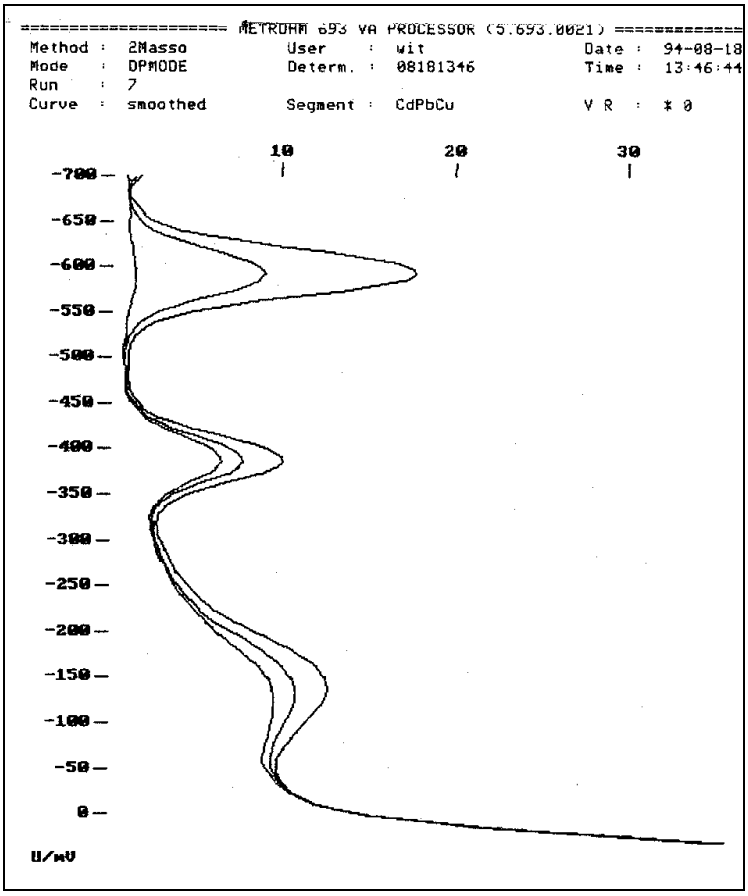
Zinc, cadmium, lead and copper:	
Electrolyte:	Acetate buffer, pH = 4.6 with CH_3COOH, NH_3 and HCl.
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	Zn at the SMDE, U_{start} = -800 mV, U_{end} = -1200 mV Cd, Pb and Cu at the HMDE, DPASV (+50 mV) U_{meas} = -700 mV (90s), U_{start} = -700 mV, U_{end} = +30 mV Ep (Zn) = -960 mV, Ep (Cd) = -600 mV Ep (Pb) = -380 mV, Ep (Cu) = -120 mV

Iron determination in the same vessel:	
Electrolyte:	Add catechol crystals and Pipes buffer. pH = 7.0
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPCSV (-50 mV), HMDE U_{meas} = -200 mV (60s), U_{start} = -200 mV, U_{end} = -600 mV Ep (Fe) = -450 mV

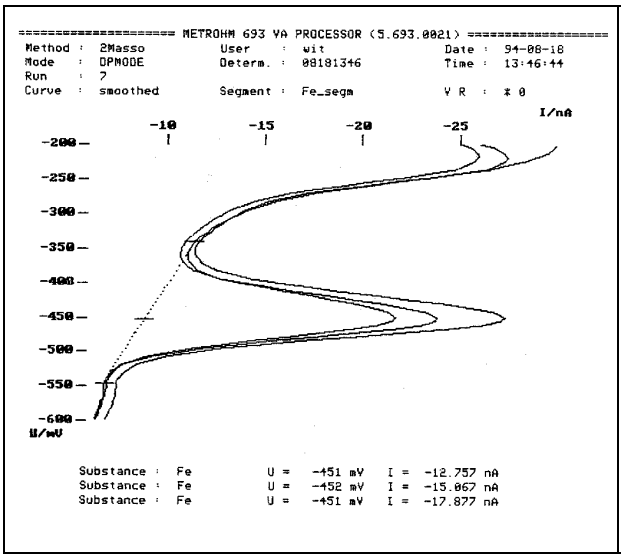
Nickel and cobalt determination in the same vessel:	
Electrolyte:	Add dimethylglyoxime and NH_4Cl / NH_3 buffer
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPCSV (-50 mV), HMDE U_{meas} = -700 mV (30s), U_{start} = -800 mV, U_{end} = -1300 mV Ep (Ni) = -975 mV, Ep (Co) = -1100 mV

Results:	**Zn** mg/L	**Cd** ng/L	**Pb** µg/L	**Cu** µg/L	**Fe** µg/L	**Ni** µg/L	**Co** µg/L
	5.61	**204.9**	**56.3**	**36.4**	**608.4**	**876.7**	**44**

Determination of cadmium, lead and copper (zinc not shown)



Determination of iron



Determination of nickel and cobalt