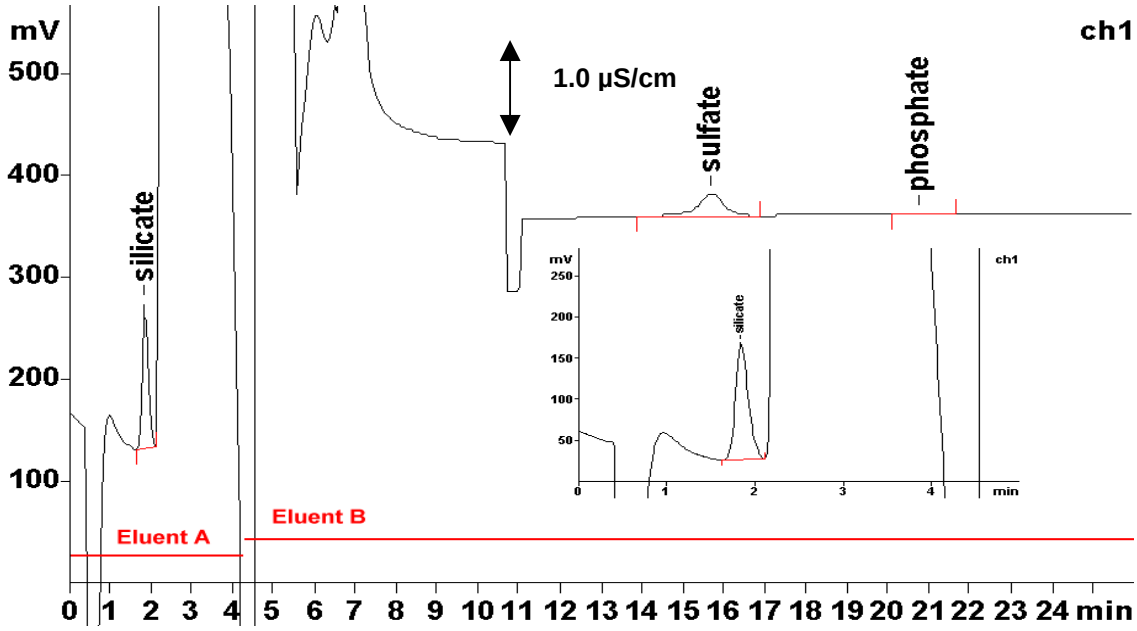
IC Application Note No. S-142

Title:	**Silicate, sulfate and phosphate in a clay extract**

***Summary*:**	Determination of silicate, sulfate and phosphate in clay extract using anion chromatography with conductivity detection before and after chemical suppression. Applying a step gradient and valve switching to work with or without chemical suppression.

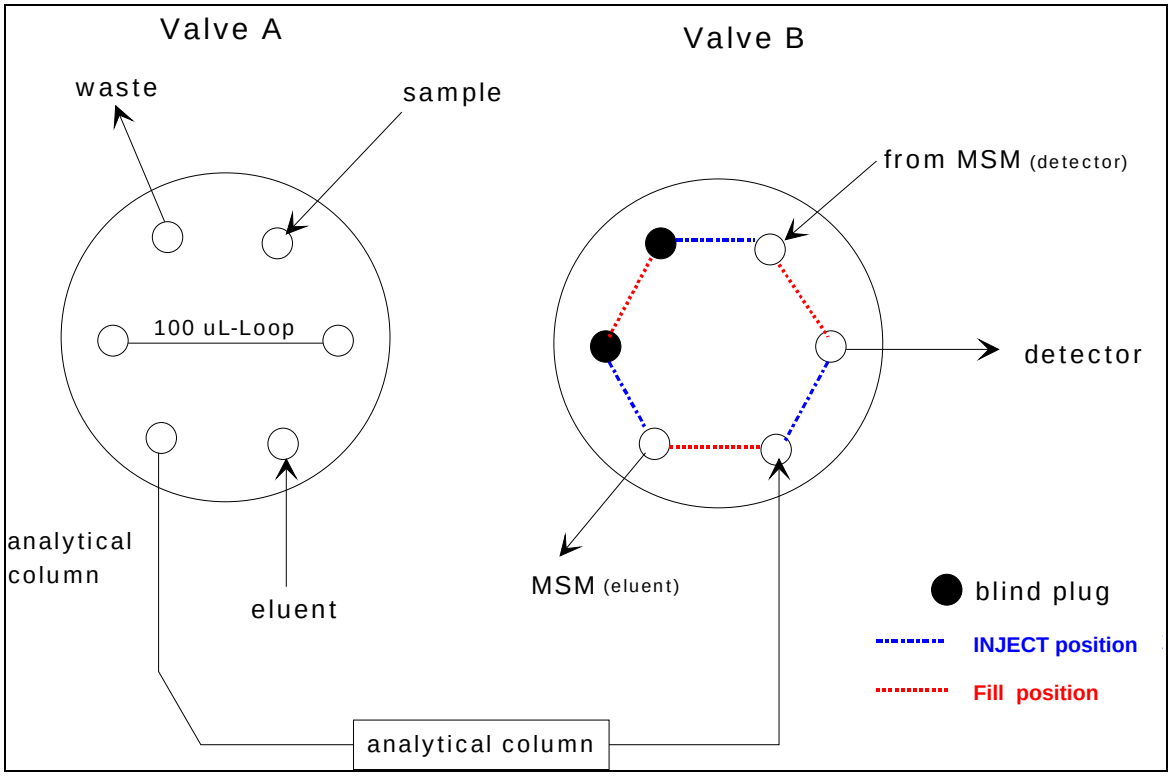
Sample:	Clay extract
Sample preparation:	Dilution 1 : 200, injection after filtration

Column:	6.1005.100 Phenomenex StarIon A 300
Eluent A:	1.0 mmol/L sodium hydroxide, 0.1 mmol/L sodium carbonate
Eluent B:	1.0 mmol/L sodium hydroxide, 1.0 mmol/L sodium carbonate
Suppressor:	MSM (50 mmol/L H_2SO_4)
Flow:	2.0 mL/min
Injection Volume:	100 µL



Results:	Silicate as SiO_2 mg/kg	Sulfate mg/kg	Phosphate mg/kg
	1970	**498**	**9**

Switching from non-suppressed to suppressed mode



Valve B:

Time 0.0 … 4.5 min	INJECT position, i.e. non-suppressed mode for silicate polarity = –
Time 4.5 … 30 min	FILL position, i.e. suppressed mode for sulfate and phosphate polarity = +