MILLENNIUM APPLICATION BRIEF

TOPIC: Solvent Delivery Reproducibility of the 2690 using Automated Solvent Blending

AUTHOR: Stuart Oehrle **Date: 07/12/96**

INTRODUCTION:

Isocratic, premixed mobile phases are used heavily for the analysis of a wide variety of compounds. Subtle variations in the composition of premixed mobile phases can lead to slight retention time variations depending on the assay. In this case the analysis of explosives using a 88/12 water-isopropanol (IPA) mobile phase was evaluated. A small change in the mobile phase composition can greatly change the retention times of these explosives. The automated solvent blending capabilities (aka. dial-a-mix) of the 2690 was used to evaluate the compositional reproducibility it could provide. A 0.5% change in the composition was programmed and evaluated. Figure 1 shows the effect of a 0.5% change in the mobile phase composition. As can be seen the effect on retention times is quite dramatic. Figure 2 is an overlay of five injections of the explosives mix at each of the compositions. The reproducibility of the automated solvent blending feature on the 2690 is quite dramatic. The value of this is important when one considers the variations possible in premixing mobile phases.

EXPERIMENTAL:

HPLC Analysis

Mobile phase:	A: Water
	B: Isopropanol (IPA)
Flow rate:	1.0 mL/min
	Automated Solvent Blending: (88-12), (87.5-12.5) and (88.5-11.5)
Detection:	254nm
Column:	Nova Pak C8 (3.9 X 150mm)
Temperature:	30 degrees Celsius

FIGURES:

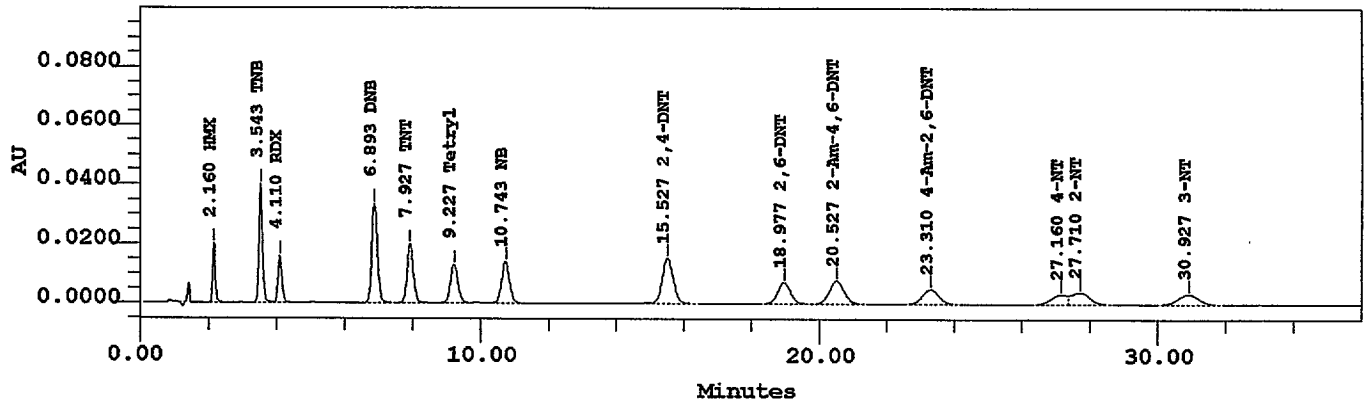
Figure 1: Chromatogram of explosives mix at each composition

Figure 2: Overlay of 5 injections of explosives mix at each compositional level

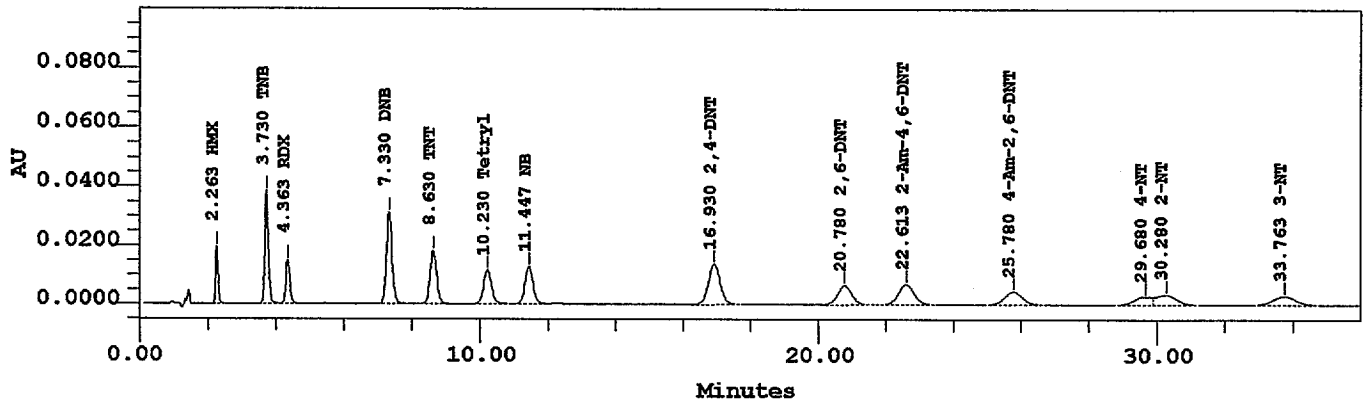
Stuart A. Oehrle
Waters Corporation
Northern Kentucky Lab
Data Report

A L L I A N C E S A M P L E R E P O R T

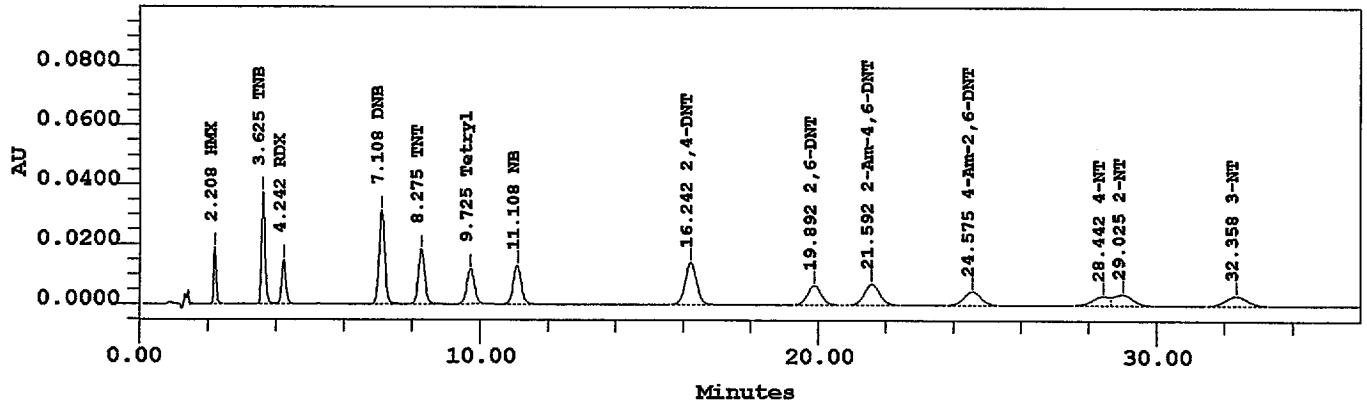
Comments: Nova C8-3.9 X 150mm-1.0 mL/min-87.5/12.5 H2O/IPA-30C

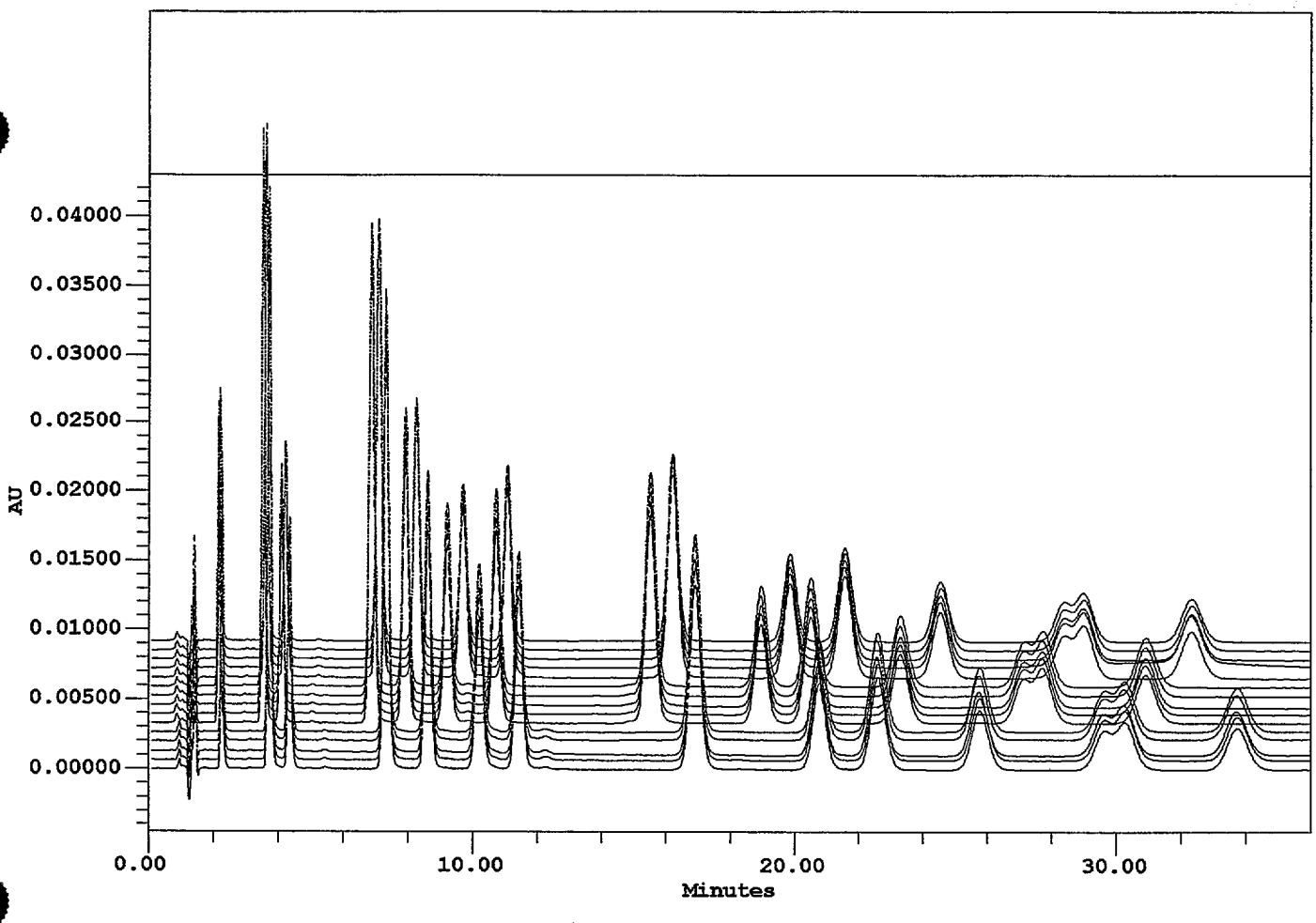


Comments: Nova C8-3.9 X 150mm-1.0 mL/min-88.5/11.5 H2O/IPA-30C



Comments: Nova C8-3.9 X 150mm-1.0 mL/min-88/12 H2O/IPA-30C





Samples

#	Sample Name	Vial	Inj	Channel	Channel Name	Date Processed
1	4 ppm 8330+ (15uL)	11	1	996	254nm	06/19/96 10:14:41 AM
2	4 ppm 8330+ (15uL)	11	2	996	254nm	06/19/96 10:14:39 AM
3	4 ppm 8330+ (15uL)	11	3	996	254nm	06/19/96 10:14:37 AM
4	4 ppm 8330+ (15uL)	11	4	996	254nm	06/19/96 10:14:35 AM
5	4 ppm 8330+ (15uL)	11	5	996	254nm	06/19/96 10:14:33 AM
6	4 ppm 8330+ (15uL)-11.5% IPA	2	1	996	254nm	06/19/96 10:14:31 AM
7	4 ppm 8330+ (15uL)-11.5% IPA	2	2	996	254nm	06/19/96 10:14:29 AM
8	4 ppm 8330+ (15uL)-11.5% IPA	2	3	996	254nm	06/19/96 10:14:27 AM
9	4 ppm 8330+ (15uL)-11.5% IPA	2	4	996	254nm	06/19/96 10:14:25 AM
10	4 ppm 8330+ (15uL)-11.5% IPA	2	5	996	254nm	06/19/96 10:14:23 AM
11	4 ppm 8330+ (15uL)-12.5% IPA	11	1	996	254nm	06/19/96 10:14:21 AM
12	4 ppm 8330+ (15uL)-12.5% IPA	11	2	996	254nm	06/19/96 10:14:19 AM
13	4 ppm 8330+ (15uL)-12.5% IPA	11	3	996	254nm	06/19/96 10:13:58 AM
14	4 ppm 8330+ (15uL)-12.5% IPA	11	4	996	254nm	06/19/96 10:13:56 AM
15	4 ppm 8330+ (15uL)-12.5% IPA	11	5	996	254nm	06/19/96 10:13:53 AM