Title **Analysis of Spirits for Haloanisole Taints**

Client

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Sample Details

SWRI No.	Client Reference	Description
S19-0121	MS 231 1405	Milagro Tequila
S19-0122	MS 224 1204	Milagro Tequila
S19-0123	Rotation 7030 27/06	Balvenie Doublewood 12yo
S19-0124	Rotation 8045 07/11	Balvenie Doublewood 12yo
S19-0125	Rotation 6587 10/04	Balvenie Doublewood 12yo

Analysis Methods Determination of congeners - OP 283 using mass spectrometry

Comments The analysis used headspace solid phase micro-extraction (SPME) couple with gas chromatography - mass spectrometry to test for the presence of haloanisole taints.

The limit of detection for this analysis was
0.015µg/l for 2,4,6-trichloroanisole,
0.044µg/l for 2,3,4,5-tetrachloroanisole,
0.058µg/l for 2,3,5,6-tetrachloroanisole and
0.050µg/l for 2,4,6-tribromoanisole.

Comments (cont). Quantification used only headspace peak areas due to interferences with the internal standard, particularly in S19-0121 and S19-0122. The concentrations therefore are representative of the odour impact of the anisole as opposed to a measure of the solution concentration.

Conclusions The levels of 2,4,6-trichloroanisole in samples S19-0122 and S19-0125 would give rise to a noticeable musty taint in these products.

The concentrations of chloro- and bromoanisoles in the remaining products were below the limit of detection.

Signatories			
For and on behalf of SWRI Services Limited	**Name**	John Conner BSc PhD	Signature
	Position	Senior Scientist	Date
	Name	Shona Harrison BSc, Dipl.Distil	Signature
	Position	Analytical Services Manager	Date

Table No. 1
Determination of congeners

Sample (SWRI No.)	**S19-0121**
	No analytes were present above their limits of detection.
Sample (SWRI No.)	**S19-0122**
	The concentration of 2,4,6-trichloroanisole was above the calibration range used for this analysis. Extrapolation of the calibration gives an estimated concentration of 1.7µg/l. At this level 2,4,6-trichloroanisole would cause a serious taint in the product.
Sample (SWRI No.)	**S19-0123**
	No analytes were present above their limits of detection.
Sample (SWRI No.)	**S19-0124**
	No analytes were present above their limits of detection.
Sample (SWRI No.)	**S19-0125**
	2,4,6-trichloroanisole was present at a concentration of 0.11µg/l. This concentration would cause a noticeable taint in the product.