

LGC Classification: RESTRICTED

Statement of Denise Stanworth

Page 1 of 9

Lab. Ref. LGC-14226217

PCRN: 5109868/14, SSRN: 2014/16624, URN:14KG9110124029

## Witness Statement

*(Criminal Procedure Rules, r. 27.2; Criminal Justice Act 1967, s. 9, Magistrates' Courts Act 1980, s.5B)*

<b>Statement of</b>	Denise STANWORTH BSc (Hons)
<b>Age</b>	Over 18
<b>Occupation</b>	Forensic Scientist

*with*

LGC Forensics (a division of LGC limited)  
Culham Science Centre, Abingdon, Oxfordshire, OX14 3ED

*This statement, consisting of 9 pages each signed by me, is true to the best of my knowledge and belief and I make it knowing that, if it is tendered in evidence, I shall be liable to prosecution if I have wilfully stated in it anything which I know to be false or do not believe to be true.*

Dated the 10<sup>th</sup> day of September 2014

Signature: Signature .....

### Qualifications and Experience

I am a Bachelor of Science (Honours) in physiology and biochemistry. I was employed for over 16 years by the Home Office Forensic Science Service as a forensic scientist specialising in the analysis of body fluids and other materials for the presence of alcohol, drugs and poisons. The analyses were commissioned mainly by police forces and H M Coroners. While in the Forensic Science Service I was designated an Authorised Analyst under the provisions of Section 16 of the Road Traffic Offenders Act 1988. Since September 1998 I have been employed by Forensic Alliance Limited, now LGC Forensics, in a similar capacity.

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Page 4 of 9

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Blood

Alcohol	low concentration detected (less than 10 milligrams per 100 millilitres)
GHB	greater than 200 milligrams per litre
Citalopram	0.45* milligrams per litre
Diphenhydramine	0.057* milligrams per litre
Chlorphenamine	0.020* milligrams per litre
Quinine	detected
Caffeine	detected
Nicotine	detected

Urine

Alcohol	14 milligrams per 100 millilitres
GHB	greater than 200 milligrams per litre
1-propanol	detected

\*estimated concentration as this was derived from a single aliquot of blood.

The presence of substances related to citalopram, diphenhydramine and chlorphenamine was also detected in the blood.

None of the other substances listed under Nature of Examination were detected in the blood and urine.

**Comment**

These comments are based on the reading and interpretation of scientific and medical literature and should be viewed as general comments only as I am unable to determine precisely how drugs will affect a particular individual at a given time. The comments that follow are based upon the information provided to me but should this information change I may have to revise my comments.

The results are assumed to represent the situation at the time of death but due to post-mortem redistribution this may not necessarily be so.

Signature Signature

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Page 5 of 9

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Alcohol

The concentration of alcohol detected in the blood and urine is very low and for the purposes of comparison is well below the statutory limit for driving of 80 milligrams per 100 millilitres of blood and 107 milligrams per 100 millilitres of urine.

The alcohol detected could be the residue of alcohol consumed at a much earlier time. However, I cannot exclude the possibility that all the alcohol detected could have been generated after death by microbiological activity.

Alcohol is a depressant of the central nervous system slowing down many of the processes of the brain. At low concentrations alcohol produces euphoria and reduces social inhibition leading to increased sociability, talkativeness and some impairment of co-ordination usually seen as clumsiness. At moderate levels, mood, co-ordination and movement is increasingly affected with development of a staggering gait and slurred speech, slowed reaction time, nausea and drowsiness. At a high degree of intoxication previous symptoms are exaggerated with falling over, confusion progressing to stupor, drowsiness progressing to sleep and unconsciousness.

Gamma-hydroxybutyrate (GHB)

GHB is an anaesthetic drug with primarily sedative properties originally developed as a premedication prior to surgery. It gained popularity in the 1980's among body builders for its ability to stimulate muscle development. More recently it gained popularity as a recreational drug particularly on the dance and club scene and has also been implicated in 'date-rape' incidents. Gamma-butyrolactone (GBL) is a related substance that is rapidly converted to GHB in the body. I am therefore unable to say whether GHB or GBL was the substance originally taken by Mr Walgate.

GHB is usually found in a liquid form popularly known as 'liquid ecstasy' but is also sold as a powder or in the form of capsules. GBL is found in liquid form.

At low doses GHB is reported to produce euphoria, to lower social inhibitions and to increase libido. At higher doses euphoria gives way to sedation which may lead to unrousable sleep. Dizziness, nausea and vomiting, amnesia and visual disturbances have also been reported. These effects, which are similar to those of alcohol, start about 15 minutes after administration and may last for several hours. Larger doses produce anaesthesia and may lead to coma and respiratory depression.

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Signature .....

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Page 6 of 9

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The drug is quickly eliminated from the blood stream having a half-life of between 15 minutes and 1 hour.

The concentration of GHB detected in Mr Walgate's blood is high and within the range at which deaths from GHB intoxication have been reported and could therefore account for Mr Walgate's death. I note that Mr Walgate may have lain unconscious for several hours and therefore the concentration of GHB in his blood could have been higher at an earlier time.

As GHB is a depressant of the central nervous systems its effects will be enhanced by alcohol.

#### Citalopram

Citalopram belongs to a group of antidepressant drugs known as selective serotonin re-uptake inhibitors, or 'SSRIs', which are commonly prescribed for the treatment of depression. Citalopram may also be prescribed in the treatment of panic disorder and certain chronic anxiety states.

Common reported side-effects of SSRIs include gastro-intestinal effects such as nausea, vomiting, diarrhoea and abdominal pain; however, neurological effects manifest as either anxiety, nervousness and insomnia or drowsiness and fatigue have also been reported together with headache, tremor and convulsions. The SSRIs are generally considered to be of low toxicity in adults.

The estimated concentration of citalopram detected in Mr Walgate's blood is higher than would normally be expected in clinical samples following the use of therapeutic amounts of this drug. However, it lies within the range frequently encountered at this laboratory in post-mortem samples following the use of therapeutic amounts and the higher level is likely to be due to a degree of post-mortem redistribution. The concentration is lower than is generally associated with toxicity.

#### Diphenhydramine

Diphenhydramine is an antihistamine drug used for the symptomatic relief of allergic conditions and as an anti-emetic in the control of nausea and vomiting such as that experienced in motion sickness. It has pronounced sedative effects and is also used in the short term management of insomnia in preparations such as 'Nytol'. Diphenhydramine is also present in many cough and cold remedies.

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