Arbitration CAS (Oceania Registry) A4/2014 Australian Sports Anti-Doping Authority (ASADA) (on behalf of Athletics Australia) v. Kim Mottrom, award of 21 March 2016

Panel: The Hon. Tricia Kavanagh (Australia), Sole Arbitrator

Athletics (road walking)
Doping (dextran / S5 - Diuretics and other Masking Agents)
Burden and standard of proof
Dextran as a blood (plasma) expander and effect of dextran as masking agent for steroids
Presence of dextran in the athlete's urine and intravenous administration

1. **The burden of proving (presence and use) of a prohibited substance by an athlete lies upon the anti-doping organisation. The standard of proof is comfortable satisfaction, a term of art, in so far as deployed in sports law derived from a decision of a CAS ad hoc panel at the Atlanta Games in 1996 and regularly applied by CAS panels since then.**

2. **To consider the effect of dextran in a urine sample it is necessary to understand the chemistry of sugar and also the digestion of carbohydrates in the human digestive tract. Dextran is a blood (plasma) expander. When in the blood it draws in fluid which increases the fluidity of the blood. The blood volume is expanded. The blood has the ability to transport oxygen around the system releasing energy and thereby assisting acrobat performance. Dextran can also act as a masking agent for steroids.**

3. **If the overwhelming scientific evidence establishes the presence of dextran in the athlete's urine and oral ingestion cannot explain the concentration detected, then the panel is comfortably satisfied that the substance detected in the athlete's sample was by intravenous administration.**

I. INTRODUCTION

1. The Australian Sports Anti-Doping Authority (ASADA) on behalf of Athletics Australia (AA) seeks from the Court of Arbitration for Sport (CAS) an Award in the following terms:

> That Mr Kim Mottrom (the Athlete) has committed the anti-doping rule violations (ADRVs) of:
>
> (i) Presence of a Prohibited Substance (Presence); and
>
> (ii) Use of a Prohibited Substance (Use).

It asks for CAS to impose Sanction in relation to the alleged ADRVs.

2. This Award follows a Partial (Interlocutory) Award of the Hon Justice Emmett (as he then was), dated 27 March 2015 (CAS A4-2014). The Athlete has reserved his right of appeal either to the Appeals Division of the CAS or the Swiss Federal Court, of the above Partial Award.

II. PARTIES

3. ASADA is Australia's national anti-doping organisation, tasked with managing anti-doping rule violations.

4. AA is the national governing body for the sport of athletics in Australia.

5. Kim Mottrom is an athlete in the sport of road walking.

III. FACTUAL BACKGROUND

6. Below is a summary of the relevant facts and allegations based on the parties' written submissions, pleadings and evidence adduced and at the hearing. Additional facts and allegations found in the parties' written submissions, pleadings and evidence may be set out, where relevant, in connection with the legal discussion that follows. While the Sole Arbitrator has considered all the facts, allegations, legal arguments and evidence submitted by the parties in the present proceedings, she refers in her Award only to the submissions and evidence she considers necessary to explain her reasoning.

7. The parties have agreed to the following facts:

- The Athlete is an "Athlete" in the sport of road walking and is a registered member of Athletics, South Australia and the AA Member Associations.

- On 2 October 2013 the Athlete registered with Athletics South Australia via an online membership Registration System (Membership). By reason of the Membership the Athlete was eligible to compete in all Athletics SA, AA and sanctioned State Member Associations' competitions and events. The Membership also resulted in the Athlete being bound to comply with the "Memorandums, Articles and By-Laws of Athletics Australia".

- At 11.30am on 15 December 2013, at the Australian 50km Road Walking Championships held at Fawkner Park Melbourne, the Athlete received notification from ASADA that he was required to provide an in-competition urine sample for drug

testing. As required, a Doping Control Notification form was completed and signed by the Athlete.

- The Athlete provided a sample as requested at 12.10pm. The code number allocated to the Athlete's urine sample was 1239499.

- Sample number 1239499 was tested for prohibited substances at the Australian Sports Drug Testing Laboratory (ASDTL), a World Anti-Doping Agency accredited laboratory.

- On 17 March 2014 the ASDTL reported to ASADA the presence of dextran in Part A of sample number 1239499;

- On 24 April 2014 the ASDTL reported to ASADA the presence of dextran in Part B of sample number 1239499.

- Dextran is prohibited at all times, if intravenously administered, under category S5 (Diuretics and other Masking Agents) of the World Anti-Doping Agency's 2013 Prohibited List (WADA Prohibited List).

- During the period from 17 March 2014 to 19 June 2014, ASADA performed results management for sample number 1239499.

- On 19 June 2014, the Anti-Doping Rule Violation Panel (ADRVP), in accordance with the National Anti-Doping scheme, placed the Athlete's details onto its Register of Findings in respect of the possible ADRVs of "Presence" and "Use" of dextran.

- Pursuant to Articles 15.5 and 15.6 of the AA Policy 2010, ASADA then issued an Infraction Notice, dated 24 June 2014, to the Athlete.

- The Infraction Notice alleged that the Athlete had committed the ADRVs of Presence of Dextran and Use of Dextran.

8. It is also relevant to record that after notification of the presence and use of dextran in his "A" sample, the Athlete accepted a voluntary provisional suspension from 21 March 2014.

IV. PROCEEDINGS BEFORE THE COURT OF ARBITRATION FOR SPORT

9. On 9 July 2014, ASADA, on behalf of AA, filed its application in the Ordinary Division of the CAS against the Athlete, in accordance with Article R38 of the Code. ASADA did not nominate a preferred arbitrator within its application.

10. On 11 July 2014, the Athlete submitted a request for legal aid to the CAS.

11. On 16 July 2014, the CAS Court Office formally notified the Athlete of ASADA's application and invited him to nominate a preferred arbitrator in accordance with Article R40.2 of the Code. The Athlete nominated the Hon Justice Annabelle Bennett as his preferred arbitrator. The CAS Court Office made enquiries with the Hon Justice Bennett, who confirmed she was not available to hear the matter. The Athlete then nominated the Hon Justice Arthur Emmett (as he then was) as preferred arbitrator.

12. On 18 July 2014, upon the agreement of the parties, Justice Emmett was confirmed as sole arbitrator.

13. On 26 August 2014 a preliminary directions teleconference was held between ASADA, the Athlete and the sole arbitrator to confirm the order of procedure. The issue of ASADA's late payment of its advance of costs in accordance with Article R64.2 was discussed.

14. On 29 August 2014 the Vice President of the ICAS made an order on the Athlete's request for legal aid which was notified to the Athlete on 1 September 2014.

15. On 8 October 2014, ASADA filed and served submissions on the issue of the late payment of ASADA's advance of costs.

16. On 16 October 2014, the Athlete filed his response on the issue of ASADA's late payment of its advance of costs.

17. On 23 December 2014, the parties were notified of the CAS Court Office's decision to consent to extending the time limit for the payment of ASADA's advance of costs.

18. On 5 January 2015, the Athlete filed its position statement on the question of jurisdiction with the CAS Court Office.

19. On 9 February 2015, ASADA filed its position statement on the question of jurisdiction with the CAS Court Office.

20. On 27 March 2015, the Sole Arbitrator issued a preliminary award confirming the jurisdiction of the CAS to continue with the proceedings.

21. On 16 April 2015, the parties signed the Order of Procedure.

22. On 24 April 2015, ASADA filed its submissions and evidence with the CAS Court Office.

23. On 1 May 2015, the Athlete submitted a request for an extension of time to file its submissions in response, which was granted.

24. On 22 May 2015, the Athlete submitted a further request for an extension of time to file its submissions in response, which was granted.

25. On 27 May 2015, the Athlete wrote to ASADA to request transcripts of telephone conversations and interviews conducted between ASADA and the Athlete.

26. On 29 May 2015, ASADA provided the Athlete with two audio files recording a telephone conversation and interview conducted with the Athlete.

27. On 11 June 2015, the Athlete filed its submissions and evidence in response with the CAS Court Office.

28. On 7 August 2015, ASADA filed its submissions in reply and reply evidence with the CAS Court Office.

29. On 27 August 2015, the Athlete filed submissions with the CAS Court Office on the issue of 'case-splitting' in ASADA's submissions in reply filed on 7 August 2015. The Athlete also filed submissions in relation to the Athlete's provisional suspension.

30. On 2 September 2015, ASADA filed submissions with the CAS Court Office in response on the issue of the Athlete's provisional suspension.

31. On 12 October 2015, ASADA filed submissions with the CAS Court Office in response to the Athlete's submission on the issue of case-splitting.

32. On 30 October 2015, the Sole Arbitrator informed the parties that it had rejected the Athlete's submissions on the issue of case-splitting. The Sole Arbitrator also informed the parties of the need to appoint an alternate arbitrator, as the Sole Arbitrator was no longer able to complete the arbitration.

33. On 6 November 2015, the parties nominated Dr Tricia Kavanagh as preferred arbitrator.

34. On 19 November 2015, Dr Tricia Kavanagh was appointed as Sole Arbitrator.

35. On 9 December 2015, a hearing was held at the CAS Oceania Registry in Melbourne, Australia. The Sole Arbitrator was assisted by Mr Alistair L. Oakes, Solicitor in Sydney Australia, as *ad hoc* clerk and joined by the following:

For ASADA

- Mr Ben Ihle
- Mr Stephen White
- Ms Bronwyn Fagan

For AA

- Mr Brian Roe

For Mr Mottrom

- Mr Paul Hayes
- Mr Patrick Liptak

36. The following witnesses gave evidence before the Sole Arbitrator:

For ASADA

- Dr Catrin Goebel
- Fiona Johnson
- Professor Paul Pavli (by video)

For Mr Mottrom

- Dr Geoffrey Mark Verrall (by video)

Mr Mottrom also gave evidence before the Sole Arbitrator by telephone.

V. SUBMISSIONS OF THE PARTIES

37. ASADA's submission may be summarised as follows:

The Panel ought to be comfortably satisfied that the dextran detected in the Athlete's urine sample furnished on 15 December 2013 was as a result of intravenous (IV) administration as:

- Such a finding is the only explanation (IV administration) for the Adverse Analytical Finding which has withstood thorough scientific scrutiny.

- The analyses of the Athlete's "A" and "B" samples were in compliance with reported literature on the detection and calculation of dextran concentration pursuant to WADA approved ISO accreditation.

- The Panel is bound to accept, and act on the evidence of the detection and concentrations of dextran reported by the ASDTL.

- The Athlete's urine contained concentrations of dextran well in excess of the imposed minimum standard of reporting. Even at the lowest reported range of concentration, the Athlete's sample contained a very high amount of dextran.

- All experts agree that oral ingestion could not account for the dextran detected in the Athlete's urine.

- The Athlete's bacterial synthesis defence finds no support in the evidence yielded by analysis and contemporaneous medical records.

- Sugars consumed by the Athlete in food and drink cannot explain the high concentrations detected.

- Sucrose can be excluded as a source of the building blocks of the dextran. No significant fructose (one of the two molecules which constitute sucrose) was detected in his sample.

- The high pH of the "A" sample screening aliquot:

    i. Demonstrates that any bacteria present in that segregated part of the A-sample was not producing dextran. If it had produced dextran, the pH measure would have lowered rather than increased;

    ii. The A-sample was frozen on 18 December 2013, as was the B-Sample. The A-sample, and the B-sample were each tested in April 2014. Their pH was

identical, relevantly unaffected by bacterial activity and resulted in the confirmed detection of dextran.

38. Further analysis of the concentration and weight of the urine sample supports the case for IV administration. The dextran present was shown to be high in molecular weight and at a high level of concentration.

39. The Athlete's submissions are summarised as follows:

Generally, ASADA's "intravenous injection" case rests on an unstable foundation of unqualified and inappropriately retained expert witnesses, contaminated urine samples, unexplained and less than thorough scientific analysis by the ASDTL and sloppy speculation. It should be firmly rejected.

- ASADA has failed the evidentiary burden, to prove to a level of "comfortable satisfaction", the Athlete has committed the two ADRVs as alleged.
- ASADA failed to establish, as necessary, when the dextran was administered to the Athlete or the dosage administered.
- The Athlete challenged the independence of one of the ASADA experts, Dr Goebel, given the email chain from ASADA which the Athlete contends influenced her opinions.
- The Athlete challenged the particular expertise of Professor Pavli in relation to the effect of dextrans on a person with neutropenia and his reliance on research should not be accepted as all research referred to related to the use of dextran by a healthy person.
- The Athlete's urine was contaminated by bacteria and the weight of the evidence does not exclude a finding the bacteria contaminated the samples.
- There was an analytical false positive result due to the Athlete's neutropenia – a condition which makes the Athlete more vulnerable to discharging urine containing bacteria.
- The "A" sample test revealed a pH greater or equal to 8.5 which indicated bacterial activity.
- There were no definitive tests taken by ASDTL to ascertain the bacterial levels in each of the "A" and "B" samples; nor a test to identify the sucrose levels.
- It is common for bacteria to be in urine.

- Professor Pavli's evidence should be rejected as it was based upon the condition of the objectively "healthy person" and the Athlete had the condition of neutropenia which created asymptomatic bacteria in his urine.

- Alternatively, after heavy sugar consumption and rigorous exercise the gut of the Athlete became permeable and absorbed the dextran into the blood stream.

- ASADA called no witnesses sufficiently qualified in the microbiology re dextran in urine.

- The Athlete rejects the evidence of the unqualified or inappropriate expert witnesses.

- If either alleged ADRVs are proven, the Athlete accepts he is automatically subject to two year periods of ineligibility to compete which should run from the date of his provisional suspension being 21 March 2014.

- Position on costs reserved.

VI. JURISDICTION

40. Article R39 of the Code provides as follows:

> *Unless it is clear from the outset that there is no arbitration agreement referring to CAS, the CAS Court Office shall take all appropriate actions to set the arbitration in motion.*

41. The Athlete was, at the relevant time, bound by the AA Anti-Doping Policy (the AA Policy) by virtue of his membership and participation in AA, or its member organisations' activities and events. He was therefore bound to comply with the AA Policy under the terms of this Membership from 2 October 2013 to 30 September 2014. Through his Membership the Athlete agreed:

> *[T]o abide by the Member Protection Policy, all the Rules and By-Laws of ASA, Memorandums, Articles and By-Laws of Athletics Australia and the Constitution and Rules of the International Association of Athletics Federation as amended from time to time.*

42. This arbitration was convened pursuant to Articles 15.8 and 17 of the AA Policy. The jurisdiction of the CAS was further confirmed by in the Order of Procedure executed by the parties on 16 April 2015.

VII. ADMISSIBILITY

43. Article 17.5.2 of the AA Policy provides as follows:

ASADA will wait 14 days (or a shorter period agreed between ASADA and the Person) after sending an infraction notice and then may appoint to conduct the hearing:

(a) the CAS; or

(b) another Tribunal approved by ASADA.

44. ASADA issued an infraction notice to the Athlete on 24 June 2014. ASADA filed its application in the Ordinary Division of the CAS on 9 July 2014. Therefore, the Sole Arbitrator considers that the application is admissible.

VIII. APPLICABLE LAW

45. Article R45 of the Code provides as follows:

The Panel shall decide the dispute according to the rules of law chosen by the parties or, in the absence of such a choice, according to Swiss law. The parties may authorize the Panel to decide ex aequo et bono.

46. The AA Policy at Article 6.1 incorporates the WADA Prohibited List of substances and methods. The consequence is that dextran, when intravenously administered, is a Prohibited Substance. The presence of intravenously administered dextran in the Athlete's sample would constitute an ADRV under Article 6.1. Article 6.1.1 provides:

> *It is each Athlete's personal duty to ensure that no Prohibited Substance enters his or her body. Athletes are responsible For any Prohibited Substance or its Metabolites or Markers found to be present in their Samples. Accordingly, it is not necessary that Intent, fault, negligence or knowing Use on the Athlete's part be demonstrated in order to establish an anti-doping violation under Article 6.1.*

The commentary is an admissible aid to its interpretation.

> ***Comment to Article 6.1.1**: For purposes of anti-doping rule violations involving the presence of a Prohibited Substance (or its Metabolites or Markers), the Code (and therefore this Policy) adopts the rule of strict liability which was found in the Olympic Movement Anti-Doping Code ("OMADC") and the vast majority of pre-Code anti-doping rules. Under the strict liability principle, an Athlete is responsible, and an anti-doping rule violation occurs, whenever a Prohibited Substance is found in an Athlete's Sample. The violation occurs whether or not the Athlete intentionally or unintentionally Used a Prohibited Substance or was negligent or otherwise at fault. If the positive Sample came from an In-Competition test, then the results of that Competition are automatically invalidated (Article 18 (Automatic Disqualification of Individual Results)).*

47. Article 6.2 of the AA Policy provides that *"Use or Attempted Use by an Athlete of a Prohibited Substance or a Prohibited Method"* constitutes an ADRV. Article 6.2.1 provides:

> *It is each Athlete's personal duty to ensure that no Prohibited Substance enters his or her body. Accordingly, it is not necessary that intent, fault, negligence or knowing Use on the Athlete's part be demonstrated in order to establish an anti-doping rule violation for Use of a Prohibited Substance or a Prohibited Method.*

48. "Use" in the AA Policy means the *"utilisation, application, ingestion, injection or consumption by any means whatsoever of any Prohibited Substance or Prohibited Method"*.

49. Therefore, should the Sole Arbitrator be comfortably satisfied that the dextran was present in the Athlete's sample by reason of IV administration, it follows that it would also be comfortably satisfied that the Athlete has committed the violation of Use.

50. The burden of proving (presence and use) of a prohibited substance by an athlete lies upon ASADA. As was held in the CAS on appeal in the matter of CAS 2015/A/4059 at [104]:

> *… The standard of proof is comfortable satisfaction, a term of art, in so far as deployed in sports law derived from a decision of a CAS ad hoc panel at the Atlanta Games in 1996, …, and is being regularly applied by CAS panels since then (see CAS 2009/A/1912).*

51. Article 3.1 of the 2009 WADA Code provides:

> **3.1 Burdens and Standards of Proof**
>
> *… this standard of proof in all cases is greater than a mere balance of probability but less than proof beyond a reasonable doubt.*

The Athlete in submissions contends that the degree of "comfortable satisfaction" within the standard of proof required to establish the ADRVs in the present case will be considerably high … *"because of the inherent seriousness of the sporting events and the anti-doping rule violations alleged by ASADA"*. In such a circumstance, given other ramifications, the Athlete contends ASADA's handling of the urine sample and the conduct of the laboratory test upon the sample must be found to be properly conducted and it must be demonstrated to be performed with the utmost care and caution.

IX. MERITS

A. The Evidence

52. ASADA relied upon reports and/or oral evidence from the Athlete and a number of asserted experts: ASADA called Dr Catrin Goebel from ASDTL and Professor Paul Pavli (by video

link), a Gastroenterologist. Their evidence both oral and via reports included the attachments of relevant scientific literature.

53. Formal documentation was tendered to establish the Athlete's membership and the CAS jurisdiction. The AA Policy was before the Sole Arbitrator, as well as the Athlete's medical records and associated documentation; documentation supporting the sample collection and analysis.

54. The Athlete relied upon his Statement dated 3 June 2015 and oral evidence (by telephone link); two reports and oral evidence from Dr Geoffrey Mark Verrall dated 6 April 2014 and 22 May 2015 including scientific literature; correspondence between Dr Stephen Watt (ASADA) and Daniel Eichner secured by Liptak Lawyers; and emails from ASADA to Dr Catrin Goebel (ASDTL).

55. The Athlete contends ASADA's case in substance collapsed before the Sole Arbitrator when Mr Nair, a scientist from Salt Lake City, who was to be called and whose report had been served by ASADA: in part to undermine the possibility that the presence of bacteria in the Athlete's sample played a role in the production of dextran; but Mr Nair on the day of the hearing refused to give evidence. Accordingly, his evidence was not relied upon by ASADA. ASADA's counsel stated:

> *Mr Nair has not seen evidence sufficient to satisfy him that dextran was present in Mr Mottrom's samples. Given his role in anti-doping analysis and doping control, he is not comfortable in providing further evidence in these matters.*

56. The Athlete relies upon the counsel for ASADA's statement above and asks for a *Jones v Dunkel* inference to be drawn with respect to the evidence originally sought to have been led from Mr Nair.

57. The Sole Arbitrator does not take the decision of Mr Nair to refuse to be called and cross-examined on his report as being seen as a denunciation of the laboratory finding. Very properly the report was not relied upon. The only inference that could be cast in the circumstances is Mr Nair wished to sight laboratory evidence and did not want to give evidence notwithstanding he had given an opinion. That opinion is not before the Sole Arbitrator.

B. The witnesses

58. Both parties in this dispute attacked the credibility of each other's witnesses especially as to their expertise. In the context of this being the first breach of an analytical finding of the presence of dextran in a sportsperson, the Sole Arbitrator rejects each attack.

59. ASADA contends the evidence of Dr Verrall, the expert called by the Athlete was partial, fanciful and far-fetched; irresponsive to questioning; *"unthinking and incorrect and beyond his expertise"*. Dr Verrall has been a sports physician for 23 years specialising in sports medicine. He has a science qualification. He is also Medical Director at the South Australia Sports Institute and currently Chair of Training of the Australasian College of Sports Physicians. He was approached by the Athlete before ASADA took its findings to the Australian Doping Review Violation Panel (ADRVP). He agreed he was a scientist and not necessarily an expert on the product dextran. In his first report he acknowledged he wrote to support the Athlete. He acted on instructions from the Athlete who gave him a direct denial of any IV use of dextran and the Sole Arbitrator accepts the Athlete told him he had the medical condition of Crohn's disease. It was in that context the doctor tried to provide good reason as to why no further steps should be taken against the Athlete.

60. Dr Verrall's first report opined in regard to "oral ingestion" by the Athlete of sugar weighted food and drink, the combined circumstance created:

> *A perfect storm of (1) a high content of Dextran containing foods/drinks prior to the event e.g. Rockstar drink; (2) Dehydration during the 50km walk; (3) Increased permeability of gut due to ulcerative colitis [combined to allow] the large quantity of Dextran ingested to cross the gut barrier to enter the blood stream and thus be measured.*

61. This first proposition was rejected by the ADRVP and some of the basis on which the doctor posited his consideration have now been factually challenged by ASADA.

62. In his second report Dr Verrall gave an alternative hypotheses in defence of the presence of dextran in the Athlete's urine. He agreed he conducted further scientific research as to the substance dextran in writing his second report.

63. Dr Verrall referred, as did the other experts, to the scientific literature on which he based his two separate hypotheses. Those propositions will be examined in this Award in a consideration of the whole of the evidence. However the Sole Arbitrator does not accept that Dr Verrall's evidence should be considered not that of a scientific expert and should be dismissed in its totality. His propositions will be given consideration later and much of the medical/scientific evidence relied upon by ASADA was directed to such a consideration.

64. Counsel for the Athlete, Mr Hayes, attacked the credibility of the Director of the ASDTL, Dr Goebel and the workings of the ASDTL in this case. The Sole Arbitrator accepts ASDTL is independent of ASADA.

65. Email correspondence between Dr Goebel and an officer of ASADA were tendered. They directed her attention to matters which she should address in her report. She provided a draft report to ASADA and addressed in her final report issues raised in the ASADA commentary. Counsel for the Athlete, Mr Hayes, challenged the integrity of all her evidence as not

independent. The Sole Arbitrator accepts the process through email queries and perhaps direction from an officer of ASADA (including the request for a draft report and the suggestion from ASADA if further evidence was produced by the Athlete *"we may look to revise the opinion"*) was not ideal. In entering into such an arrangement Dr Goebel opened the door to such an attack on her independence. Nonetheless, the Sole Arbitrator does not accept the unwise process followed destroys the integrity of her expressed opinions. Dr Goebel is a highly qualified and experienced scientist. She underwent rigorous cross-examination of her opinions. She has worked at ASDTL for many years and has held the title of Director for four to five years. Prior to that she supervised the research area in the laboratory.

66. Under Dr Goebel's directorship and oversight the ASDTL conducts around 6000 urine sample analyses per year. Each of those samples is tested for the presence of dextran. These tests have been developed in accordance with established literature on the testing of dextran. Moreover, Dr Goebel has herself been involved in the administration and excretion studies involving dextran. She has tested samples for other laboratories conducting dextran excretion studies.

67. There was much cross-examination of the doctor where the inference cast was as ASADA was a major client of the laboratory, notwithstanding it is an independent business, the laboratory would try to oblige ASADA. Dr Goebel fiercely defended her and the laboratory's scientific reputation and the Sole Arbitrator accepts both her integrity and that of the procedures followed by the laboratory (the latter will be addressed later).

68. Mr Hayes also attacked the credibility of Professor Pavli who provided two reports and who is a professor at ANU Medical School, the College of Medicine, Biology and Environment and a Senior Specialist, Gastroenterology and Hepatitis Unit, Canberra Hospital (Director from 1997 to 2002 and again from 2003 to 2006). He has many research publications and teaching responsibilities. It was asserted he had no specialty in the workings of dextran. Further, it was asserted all the scientific literature which the Professor reviewed on dextran was based upon samples provided by healthy individuals and not persons with the medical condition, neutropenia. Therefore it was asserted such scientific evidence should be rejected.

69. The Sole Arbitrator accepts the Professor has in fact a special qualification on *"the working of the gut in the process of digestion and the intestinal handling of carbohydrates and … about how sucrose and dextran are digested and stored by the gastrointestinal tract"*. The Sole Arbitrator accepts he holds an expertise in the recognition of dextrans and their effects. The Sole Arbitrator does not accept because the literature referred to was directed towards analysis of samples from persons in good health is a ground to dismiss the expertise of the Professor. His opinions and the cross-examination of the Professor will be given consideration.

C. Dextran

70. To consider the effect of dextran in a urine sample it is necessary to understand the chemistry of sugar and also the digestion of carbohydrates in the human digestive tract.

71. Dextran is a blood (plasma) expander. When in the blood it draws in fluid which increases the fluidity of the blood. The blood volume is expanded. The blood has the ability to transport oxygen around the system releasing energy and thereby assisting acrobat performance. Dextran can also act as a masking agent for steroids.

72. Professor Pavli explained when the dextran is IV administered dextrans are potent osmotic agents: they are large molecules, they do not pass out of blood vessels, but draw fluid into them. They are used to reduce blood viscosity to improve blood flow and as a volume expander in blood dehydration.

73. As a carbohydrate dextran is made of many glucose molecules which form chains of various lengths. The most common sugar molecule in the sports world of energy drinks etc. is glucose. A glucose molecule weighs about 180 Da. A glucose molecule can pass easily through the digestive tract. Glucose molecules can "pair up" and together pass through the digestive tract (which includes the oesophagus and stomach) down into the intestine before entering the urinary tract. For the body to absorb dextran it needs to be in such glucose pairs or chains but probably not above the combined weight of 10 molecules. Dextrans exist in many foods and drinks as a sweetener but it is usually in the form of low molecular weight of low concentration.

74. In the process of digestion of the oral intake of food and drink which contain dextran, the molecules are broken up. They do not enter the bloodstream and thus are not excreted into the urine. Dr Goebel said of the oral compilation of dextran *"the body uses it up and if the body has not used it up or broken it down it gets rid of it through faeces"*.

75. Professor Pavli's opinion was virtually no dextran is in the blood following oral consumption irrespective of the amount consumed. Dr Pavli further stated:

> *In a healthy individual (and in patients suffering from inflammable bowel disease), the only mechanism by which significant levels of dextran can be found in the urine is by intravenous administration.*

76. Dr Verrall reconsidered his first proposition that the Athlete's oral consumption of food/drink with high sugar content was responsible for the presence of dextran. He conceded *"… most orally consumed dextran does NOT make it into the bloodstream. Intravenous (IV) administered dextran on the other hand is poorly broken down in the blood stream with it needing to be metabolised by the kidneys and as such larger amounts of dextran appear in the urine following IV administration"*.

77. Therefore, all experts agreed that given the levels of dextran identified in the "A" and "B" samples of the Athlete it would be impossible to consider solely oral ingestion as an explanation for the presence of dextran. The evidence persuades the Sole Arbitrator that the dextran detected had to have entered the Athlete's blood stream. The issue became how the dextran entered the Athlete's blood stream if not by IV administration.

78. Dextran is prohibited in-and-out of competition (above the recognised level).

D. Sample Analysis

79. It is necessary to first consider the particular evidence in relation to the collection of the Athlete's sample, the laboratory report, then the evidence of how the Athlete's sample was treated in the laboratory, then to consider the significant arguments as to whether the pH reading was such as to establish the "A" sample or even the "B" sample was corrupted by bacteria such as to account for the analytical finding of dextran.

80. In the Report of Analysis of the "A" sample Dr Goebel noted:

> *The above urine sample was received in good order with seal intact.*
>
> *The sample was screened for stimulants, narcotics, diuretics, anabolic agents, corticosteroids, cannabinoids and plasma expanders using methods NlOC/1, NIQC/3, NIOC/8, NIOC/10, NIOC/20 and NIOC/21.*
>
> *The presence of Dextran (Plasma expander in Urine) was confirmed in the sample using gas chromatography-mass spectrometry (method NIOC/21).*
>
> ***The sample has a pH greater than or equal to 8.5. Such changes may indicate bacterial activity and need to be treated with caution.***
>
> *Please note: Sample degradation can cause changes in steroid profile and possibly interfere with the detection of drugs and their metabolites. The T/E ratio of degraded samples must be treated with extreme caution.*
>
> (Emphasis added).

81. In the Report of Analysis of the "B" sample she noted:

> *The above urine sample was opened in the presence of Ms S Maginnity, Dr A Lisi (QA Manager ASDTL) and Mr A Hopkins, JP (laboratory appointed witness) on April 2 2014 and was in good condition. The Seal (1239499) was intact prior to opening.*
>
> *The presence of Dextran (Plasma Expander in Urine) was confirmed in the sample using gas chromatography-mass spectrometry (method NIOC/21).*
>
> ***Please note: The B sample detected a low level of glucose in the unhydroHsed sample. This could be due to the noted potential bacterial activity converting some of the dextran to glucose during storage.***

This report replaces RN1017707 Issued on 23 April 2014.

(Emphasis added).

82. Dr Goebel revealed on the laboratory readings and her analysis the dextran that was identified was a high concentration of high molecular weight dextran. This is not the type of dextran used in food, for example ice cream, and drink (sports energy drinks) as consumed by the Athlete.

83. It was revealed by Dr Goebel in evidence that after the first "A" sample pH was identified as 8.5 (normal reading is between 7-8 pH: the higher the reading the more alkaline and oxygen rich the urine is) and the "B" sample reading was pH 7.4. The "A" sample was reopened and a further aliquot taken from the flask and tested. It showed a pH of 7.4 the same pH reading as the "B" sample.

84. The ASDTL applies the internationally recognised level of cut off for dextran in the urine as below 500 ug/ml. The Athlete's sample "A" revealed dextran concentration of 2000 ug/ml ("A" sample) confirmed by "B" sample analysis of up to 13,000 ug/ml ("B" sample).

85. The Athlete challenged the conduct of the test given the variation in the pH levels in the original "A" sample test. This variation was in fact initially recognised by Dr Goebel herself who noted the sample *"may indicate bacterial activity"* and *"needs to be treated with caution"*.

86. The evidence established the urine sample was collected by an officer of ASADA or Sunday 15 December 2013 at 12 noon. It was a hot day and she placed it in the coolest part of the room, then placed it in an ASADA thermal bag. She drove 1/2 hour to her home, then placed the sample in a courier bag and put it in a freezer. It was picked up the following Tuesday by a courier. The sample arrived at the ASDTL on Wednesday 18 December at 10.20am. An aliquot of the "A" sample was poured off into a ceramic dish, then the flask was resealed and placed in the freezer. The "B" sample was immediately placed in the freezer. The aliquot of the "A" sample was tested in the laboratory on approximately 23 December some five days later. It was refrigerated but not frozen.

87. The Athlete argues the sample was contaminated at that point.

88. All the doctors conceded it appeared the "A" sample in the first period aliquot had bacteria in it and that was reflected in the elevated pH level. However, that finding was not validated once a further aliquot of the "A" sample, frozen with the "B" sample, was retested at the same time and both the retested "A" and "B" samples had a similar pH level of 7.4. The retested "A" sample and the "B" sample were frozen. Bacterial activity ceases with the freezing of the sample urine.

89. All of the samples tested revealed the presence of dextran. The Sole Arbitrator accepts the internal studies conducted by the ASDTL that identified the presence, concentration and the molecular weight of dextran in the Athlete's sample were consistent with published literature and confirmed the methods that the ASDTL employed. The ASDTL used an ISO accredited, WADA accepted method to analyse the Athlete's urine sample.

90. Dr Goebel revealed that as the finding of dextran above the accepted limit was unique, she conducted further tests on the "A" sample all of which verified the laboratory's original formal findings as verified by the "B" sample. Her integrity as a reputable scientist is accepted. The Sole Arbitrator rejects the proposition that the formal findings of the presence of dextran should be rejected because ASDTL did not conduct a particular test suggested by the Athlete's doctor, Dr Verrall. Dr Goebel went out of the way to conduct some further tests to validate the initial results some of which were requested by Dr Verrall.

E. Consideration

91. The Sole Arbitrator accepts that the scientific evidence satisfies as to the presence of dextran and this was not challenged. The challenge was how the dextran entered the Athlete's blood stream.

92. In that context in consideration of the Athlete's explanations of the presence of dextran it is also of relevance to note that under Art 7.2.1 of the AA Policy there is a presumption of regularity of the laboratory result and that must be displaced by the Athlete.

93. Having accepted that the concentration and molecular weight of the dextran identified from 2000 ug/ml to possibly as high as 13000 ug/ml could not have been absorbed by oral consumption the Athlete offers two alternative propositions: firstly, the bacteria in the Athlete's urine asymptomatic became active and created or added to the dextran in the urine. Alternatively or as well, the bacteria in the urine caused a scientific substrate on the sugar/glucose in the urine causing the glucose to break into sucrose (and fructose) that made the dextran and, given the Athlete after rigorous exercise had a permeable gut, the dextran was absorbed into his blood stream.

94. It is relevant to note the athlete contends he has the medical condition of neutropenia which is a blood disorder which renders him more susceptible to bacterial infection than the general population. The medical history of the Athlete was identified and recorded by his general practitioner (GP), Dr Stephan Unterkofler, throughout his clinical notes on 31 October 2010, 23 December 2010, 4 June 2012, 7 August 2012 and 15 August 2012. On 15 August 2012, Dr Unterkofler noted that his illness was longstanding. On 15 October 2012, a gastroenterologist considered the Athlete's neutropenia to be *"quite significant"*. On 7 November 2012 a haematologist diagnosed the Athlete to be suffering from *"autoimmune neutropenia"* or *"chronic idiopathic neutropenia"* and on 28 November 2012 raised the possibility of the Athlete sustaining recurrent bacterial infections in the future. As a consequence of the Athlete's neutropenia Dr

Verrall opines that the presence of asymptomatic bacteria in the Athlete's urine would be more common than in the usual person and that the Athlete is *"more likely to have asymptomatic bacteria in the urine without symptoms"*.

95. Professor Pavli, an eminent gastroenterologist was asked by ASADA to examine the Athlete's medical records. He found:

> *On review of the athlete's medical records, I find no objective evidence that he suffers from inflammatory bowel disease. At colonoscopy on one occasion there "were several areas of erythema, some with erosions associated", but the pathology of the biopsy specimens did not show any evidence of active inflammation to support the diagnosis of Crohn's disease or ulcerative colitis. There is no other clinical or laboratory evidence to support that diagnosis. Other conditions that may affect the absorption of carbohydrates, such as coeliac disease or lactose intolerance, have been excluded by appropriate tests.*

96. Professor Pavli further noted from the records at no time in the past had the Athlete had any identified urinary tract, bacterial infection or complained of, or was treated for, infections generally. While the fact as to whether the Athlete has the condition of neutropenia was in issue, the evidence of that condition is the basis for the athlete's defences and this consideration will be based upon a conditional acceptance of the Athlete's condition notwithstanding it is disputed by ASADA.

97. The Athlete's case was stated by Dr Verrall as *"bacteria produced the dextran found in the Athlete's urine sample"*. He contended further that the bacteria that existed at the time the urine sample was taken was asymptomatic but became active and provided a fuel source which synthesised the glucose into sucrose and fructose and the sucrose created the dextran in the sample.

98. Professor Pavli paraphrased Dr Verrall's propositions in the following way:

> *That the Dextran found in the urine was the result of the metabolism of urinary sucrose by urinary dextran-producing bacteria and that [the Athlete] had medical conditions that facilitated that process by:*
>
> - *delivering increased amounts of sucrose to the urine (irritable bowel syndrome; or possibly Crohn's disease [inflammatory bowel disease]); and*
> - *by permitting bacteria to be present in the urine (neutropenia).*

Mr Hayes for the Athlete stated:

> *And for an abundance of clarity, the case relies upon the presence of bacteria. There are possible causes and as to whether it's a urinary tract infection or not, we don't nail our colours just to that part of the mast.*

99. Professor Pavli examined seven studies and determined that, under normal physiological conditions and even after intense exercise, the gastro tract is very efficient in digesting glucose to its component parts sucrose and fructose:

> *The sucrose that is absorbed in the blood is filtered in the kidney and passes into the urine. Such amounts are not enough to provide an adequate substrate for the formation of large amounts of dextran such as were found in the A's sample.*

100. Further, it was his view that asymptomatic bacteria with or without dextran producing organisms is found in approximately only 1–2% of healthy males. The Professor noted he saw no evidence that the Athlete has the condition of neutropenia. Further and importantly he opined bacterial synthesis of dextran from free glucose molecules reduces pH levels due to the release of organic acids as a necessary by-product of dextran synthesis. Therefore, if the bacteria in the "A" sample had been activated and created glucose which broke into sucrose creating or adding to the dextran, the pH level in the urine should have been lower not higher than the "B" sample pH level.

101. Even accepting the Athlete had a bacterial infection in his urinary tract; that such bacteria was dextran-producing and that the bacteria was allowed to flourish by other microbial infection and that bacteria synthesised dextran, Dr Goebel opined there were insufficient glucose building blocks present to arrive at the high concentration of the large dextran molecules that were detected.

102. The theory of Dr Verrall that in the Athlete's sample glucose splits into sucrose and fructose molecules through androgynous bacterial activity is rejected. As Dr Goebel noted fructose molecules were not present in the urine and would have been detected when the urine was hydrolysed and subject to GCMSMS (Gas Chromatography, Mass Spectrum, Mass Spectrum testing).

103. Dr Goebel opined as to the asserted bacteria activity in the urine as follows:

> *Commercially available dextran high molecular weight products are produced by fermentation of sucrose using a certain strain or substrains of Leuconostoc mesenteroides. Sample 1239499 did show indications of bacterial activity (pH 8.5) but in order for dextran to have been produced in the urine by bacterial activity basic building blocks such as glucose or other simple carbohydrates would need to be present. Analysis of the unhydrolysed urine did not show the presence of glucose or other simple carbohydrates at a concentration high enough relative to the concentration observed for dextran. Therefore it is unlikely that the bacteria present in the urine could have been involved with the finding of dextran in the urine sample.*

104. Professor Pavli also addressed Dr Verrall's proposition in the following way:

> *I think that it is very likely that one of the urine specimens was contaminated, accounting for the pH changes referred to by Dr Verrall, but there is no physiological mechanism by which sucrose could be present in*

the urine to act as a substrate for the formation of large amounts of dextran, even if the necessary bacteria were present (which is unlikely).

105. Dr Goebel was of the view that the pH raised level in the "A" sample could have been accounted for in the contamination of the sample while in the laboratory in the ceramic dish holding the "A" sample which was unfrozen but refrigerated for five days before testing. Professor Pavlic endorsed this opinion as a possible explanation for the variable pH level in the "A" sample.

106. In evidence Dr Verrall further posited that athletes engaged in hard aerobic activity after an hour have greater incidence of gut permeability compared to a normal, regular person. That fact taken with the Athlete's consumption of high sugar content food the night before and on the day of the competition, the consumption of two energy bars and in competition drinking nearly one litre of an energy drink and a glass of water were put to the Professor as foundation for the proposition that, provided there was sufficient sucrose as a consequence there would be a reaction, given the bacteria present, to produce dextran. Professor Pavlic stated he had seen no literature supporting Dr Verrall's opinion as to gut permeability and he referred to the Athlete's intake of sucrose as follows:

> *A.* *No biological system is 100 per cent efficient and there is some leakage - …, there is some leakage of sucrose ... it need not all be completely broken down. A small proportion of it is absorbed and can be excreted in the urine and in my report I gave you some indications of that and it's something of the order of a 10th of 1 per cent is excreted in the urine using modern techniques, such as what were used for this analysis, or 5.2 of 1 per cent are using more old-fashioned techniques. I must say I did a back-of-the-envelope calculation as to whether or not the amount of sucrose that was ingested by Mr Mottrom would generate enough substrate to generate the amount of dextran, even assuming … that there were bacteria in the urine and even assuming that those bacteria could efficiently process sucrose to form dextran. It's important to remember that even bacteria that do produce dextran have at most a 50 per cent efficiency in converting sucrose to dextran ….*

And referring to research:

> *B.* *And if you look at sucrose milligrams … that's 9.4 mg of sucrose in the urine that was collected overnight, which would be of the order of maybe 3 or 400 ml of urine. So in a normal person who ingests 60 or I think the value was in this study 65 g of sucrose but … they excreted 9.4 mg. The urine concentration of dextran that was present in the sample was 30 mg per mil, not per 500 ml but per mil. It was orders of magnitude higher than one would normally expect to see in a person ingesting normal amounts of sucrose in their diet and that's my point, that there may be some linkage of sucrose which are highly improbable but in terms of the argument that's being put, if there were bacteria in the urine and those bacteria were able to convert the sucrose to dextran, we're seeing 30 mg per mil in the athlete's urine, whereas in the average person who ingests sucrose we're seeing, you know, 9.4 mg per 500 ml. So you can see that there's a big difference in these - in the amount of dextran that's produced by the normal person compared to the athlete's specimen ….*

The fact that *"no biological system is 100% efficient and there is some leakage"* was demonstrated in the "B" sample finding of a low level in the unhydrolysed sample of glucose.

107. It was further argued by the Athlete that as there was no evidence of the form of dextran used; from whence it came to him; whether the Athlete holds injection equipment and if others were involved then the Sole Arbitrator cannot be satisfied it was taken intravenously.

108. This dispute has to be considered upon the scientific evidence called. No expert accepted the significant level of dextran found analytically could have been absorbed orally. The Sole Arbitrator has considered Dr Verrall's propositions but is persuaded by the scientific explanation of Dr Goebel and Professor Pavli that there was a proper analytical finding of dextran in the urine sample of the Athlete.

109. The Sole Arbitrator understands that with the "A" sample high acidic pH level and the Athlete's absolute denial that he intravenously injected it was open to him to pursue his defence. Dr Goebel herself warned of the necessary caution given the "A" sample pH finding and clearly followed up with subsequent laboratory tests on the sealed "A" sample.

110. Both the "A" and "B" samples revealed the analytical finding was of high concentration of high molecule weight dextran. It was, even at the lowest reported range, a concentration far in excess of the allowable level. While there may have been a contaminated ceramic dish used that affected the "A" sample with bacteria that does not negate that the detection of dextran and the calculations of its concentration were done by the laboratory in accordance with accredited techniques. The Sole Arbitrator rejects the proposition of Dr Verrall that the dextran was added to or made by the bacterial activity in the sample. The bacterial activity asserted could not have made the type of dextran detected. From the evidence, the Sole Arbitrator accepts the bacteria which was recognised by the laboratory in no way discredited the adverse analytical finding of the presence of dextran.

111. The Sole Arbitrator finds no persuasive evidence that even after rigorous exercise gut permeability is such that it would absorb orally consumed or otherwise present sucrose in the urine into the bloodstream.

112. The Sole Arbitrator accepts as to the substrate defence there was from laboratory testing insufficient glucose building blocks to create the concentration of dextran detected; there were no fructose molecules identified in the urine in the testing so the theory that the bacteria created glucose which broke down to sucrose and fructose modules is rejected. Of relevance in the consideration is also the evidence that had there been bacterial synthesis to create the dextran from free glucose molecules the pH of the "A" sample would have been lower not higher. The Sole Arbitrator rejects the proposition Dr Goebel conceded the "B" sample could have, if tested with the first "A" aliquot read with a pH of 8.5pH. She was aggressively cross-examined on this point but when the proposition was put in the positive to her she replied "Not necessarily".

113. The overwhelming scientific evidence established the presence of dextran in the Athlete's urine. Oral ingestion cannot explain the concentration detected. The Sole Arbitrator is comfortably satisfied on the evidence the dextran detected in the Athlete's sample was by intravenous administration.

114. The Sole Arbitrator is therefore comfortably satisfied that there was a positive analytical finding of dextran in the Athlete's urine above the accepted level. The Sole Arbitrator is further comfortably satisfied that there was a breach of Articles 6.1 and 6.2 of the AA Policy in that the Athlete has committed the anti-doping rule violations of the Presence of a Prohibited Substance and the Use of a Prohibited Substance. Both breaches were committed concurrently.

F. Sanction

115. In accordance with Article 19.2 of the AA Policy the appropriate sanction is two years with credit for the period of the voluntary provisional suspension of the Athlete from 21 March 2014.

ON THESE GROUNDS

The Court of Arbitration for Sport rules:

1. Kim Mottrom has committed two anti-doping rule violations under the Athletes Australia Anti-Doping Policy that of:

   a) The Presence of a Prohibited Substance; and

   b) The Use of a Prohibited Substance.

2. Mr Mottrom is suspended from competition for two years from 21 March 2014 with credit for the period of provisional voluntary suspension served by Mr Mottrom.

(…).