

## **“Appendix B”**

### **Instructions to expert**

Clint Cochrane

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### **Background**

1. The Commission of Inquiry into DNA testing in Queensland was announced by the Queensland Premier on 6 June 2022 and commenced on 13 June 2022.
2. The Commission was prompted by a number of issues raised publicly regarding the adequacy of forensic DNA testing undertaken at the Queensland Health Forensic and Scientific Services (QHFSS).
3. General and specific concerns have been raised regarding the scientific testing methods undertaken for sperm microscopy in the QHFSS DNA Analysis Unit.
4. In 2016, an issue was identified at the QLD Forensic and Scientific Services (“FSS”) where there was an inconsistency between the levels of sperm detected during the initial evidence recovery microscopy (“ER”) and the levels detected by microscopy after differential lysis extraction had occurred. The ER slides showed no, or very little sperm, whereas the slides produced after differential lysis had occurred identified significant amounts of sperm (2-3 heads). This was problematic because, as of 2016, if the ER slides displayed no sperm (and other presumptive testing produced a similar result), DNA testing of the sample was usually stopped. This created a risk that samples which might provide a usable DNA profile might not be properly tested for DNA because ER microscopy inaccurately indicated there was no or very little sperm. The issue was escalated and resulted in a project proposal at FSS relating to an investigation into the sensitivity of spermatozoa microscopy (Project 181).
5. At some point later in 2016, as a risk management strategy, processes were changed so that all samples underwent differential lysis extraction and a decision about whether to progress testing was based on microscopy undertaken after differential lysis. Project 181 was conducted over the next four years. An interim report, dated March 2017, made a number of conclusions. As a result of these conclusions, it was decided that further investigations would not be of any benefit, and the next step would be to design and test a new ER process.

### **Overview of engagement**

6. You have been engaged to review the documentation provided and determine whether the scientific testing process in respect of sperm microscopy was scientifically sound and conducted in accordance with international best practice.

7. In addition, you will also consider Project #181 and whether the analysis employed was scientifically sound and in accordance with international best practice.

### Instructions

8. You are instructed to:

- (a) consider the briefed material;

- (b) Provide advice to the Commission as to:

1. Whether the methods, systems and processes in relation to sperm detection, testing and analysis was consistent with international best practice when the issue arose in 2016;
2. Whether the identification, investigation and resolution of the sperm microscopy issue, including Project 181 was appropriate and consistent with international best practice, including consideration of the following particular issues:
  - i. Whether it was sufficient for the sperm microscopy testing issue identified to be investigated as a project, or should the issue have been raised as an OQI or an Adverse Event;
  - ii. Whether the response time and duration of Project #181, including from when the sperm microscopy issue was raised in and around 2016 to project finalisation, dealt with the issue with a reasonable time and with appropriate urgency;
  - iii. Whether the project should have included a root cause analysis of what was causing the problem;
  - iv. Whether the project should have considered the issues of how long this issue had existed, what samples it may have affected, and what should be done about those samples;
  - v. Whether, and to what extent, any failure to consider what previous samples were affected by the issue means that useable DNA evidence may not have been obtained by the laboratory;
  - vi. Whether the scope of the review conducted by ESR, and the materials and instructions provided to ESR for that review, adequately identified and addressed the issues identified by Amanda Reeves and others.
3. Whether the amended methods, systems and processes implemented in relation to sperm microscopy was consistent with international best practice;
4. If any deficiency in the methods, systems or processes for sperm microscopy or the resolution of the issue that arose in 2016 is found, the impact of that deficiency on:

- i. Whether the obtaining of a useable DNA profile from a sample by the laboratory was reliable and accurate;
    - ii. Whether DNA profiles obtained by the laboratory are reliable and accurate.
  5. If any deficiency in the methods, systems or processes for sperm microscopy is found, what should be done now to rectify that issue.
  
9. To provide that advice, please:
  - (a) consider all the enclosed material;
  
  - (b) discuss with Counsel Assisting the Commission the adequacy of the instructions and brief to be able to provide the advice sought by **21 September 2022**;
  
  - ~~(c) discuss preliminary opinions with Counsel Assisting the Commission and experts (Dr Rebecca Kogios, Ms Heidi Baker) by **30 September 2022**;~~
  
  - (d) provide oral advice for discussion with Counsel Assisting the Commission, Legal Officers and experts conducting a wider review of the laboratory (Dr Rebecca Kogios, Ms Heidi Baker) by **5 October 2022**; and
  
  - (e) provide a draft report to the Commission by **8 October 2022**;
  
  - (f) provide a final report no later than **3-10 October 2022**.

No.	Document	Date	Inquiry Reference
<b>1.</b>	<b>Letter to Expert</b>		
1.1	Letter of instructions to Clint Cochrane		
1.2	Amended letter of instructions to Clint Cochrane	28/09/22	
<b>2.</b>	<b>Terms of Reference</b>		
2.1	Terms of Reference - Commission of Inquiry into DNA Testing in Queensland	10/06/22	
<b>3.</b>	<b>Standard Operating Procedures</b>		
3.1	QIS #17189v9	24/07/07	QIS #17189v9
3.2	QIS #17189v10	20/09/10	QIS#17189v10
3.3	QIS #17142v12	23/02/15	FSS.0001.0013.2004
3.4	QIS #17189v13	29/07/15	FSS.0001.0013.2025
<i>Current</i>			
3.5	QIS #33798v8 – Examination of sexual cases	17/05/22	FSS.0001.0012.1384
3.6	QIS #33800v7 – Examination of items	15/05/22	FSS.0001.0012.1416
3.7	QIS #17189v17 – Examination for and of spermatozoa	21/03/22	FSS.0001.0012.0205
3.8	QIS #17186v14 – The acid phosphatase screening test for seminal stains	24/04/20	FSS.0001.0012.0186
3.9	QIS #17185v12 – Detection of Azoospermic semen in casework samples	12/08/21	FSS.0001.0012.0181
3.10	QIS #31281v8 – SAIK Forms	13/12/21	FSS.0001.0012.0811
3.11	QIS #17151v14 – Configuration of SAIKS (Sexual Assault Investigation Kit)	26/05/22	FSS.0001.0012.0093
<b>4.</b>	<b>Correspondence/Meeting Minutes</b>		
4.1	Email from Jacqueline Wilson to Amanda Reeves and Justin Howes	04/03/16	FSS.0001.0067.6316
4.2	Email from Amanda Reeves to Justin Howes	04/03/16	FSS.0001.0067.6316
4.3	Email from Justin Howes to Amanda Reeves & ors	06/05/16	FSS.0001.0066.8701
4.4	Email from Matthew Hunt to Justin Howes & ors	09/05/16	FSS.0001.0060.3411
4.5	Email from Anne Lemalu to Justin Howes & ors	11/05/16	FSS.0001.0066.8704

4.6	Management Team Meeting Minutes re: “sperm seen on Diff Lysis extraction slide vs ER suspension slide”	12/05/16	FSS.0001.0003.4332
4.7	Email from Justin Howes to Allan McNevin & ors	12/05/16	FSS.0001.0067.6325
4.8	Meeting Minutes re: initiate a project plan	27/05/16	FSS.0001.0003.4309
4.9	Meeting Minutes re: “Project #181 – Sensitivity of Sperm Microscopy” was “in draft, background being worked on”	09/06/16	FSS.0001.0003.4312
4.10	Email from Amanda Reeves to Justin Howes (forwarding Kylie Rika’s email)	19/07/16	FSS.0001.0067.6328
4.11	Email from Paula Brisotto to Allan McNevin and response	19/07/16	FSS.0001.0052.8289
4.12	Email from Jacqueline Wilson to Amanda Reeves	20/07/16	WIT.0002.0094.0001 (p.27)
4.13	Email from Kylie Rika to Justin Howes	28/07/16	WIT.0002.0096.0001 (p.1)
4.14	Email correspondence attaching meeting minutes	05/08/16	WIT.0004.1133.0001 (pp. 2-4)
4.15	Email correspondence from Allan McNevin re: “minor change to process” – <b>Work around</b>	08/08/16	FSS.0001.0051.5190
4.16	Email correspondence from Kylie Rika to scientists re: change in ER process	08/08/16	FSS.0001.0051.5192
4.17	Email correspondence from Allan McNevin to senior scientists re: project plan and design for Project #181	01/09/16	FSS.0001.0052.7926
4.18	Email correspondence from Allan McNevin to Timothy Gardham, Amanda Reeves and Emma Caunt re: Project #181 - project plan and experiment design.	05.09.16	FSS.0001.0013.2368
4.19	Email correspondence from Amanda Reeves to Allan McNevin	12/09/16	FSS.0001.0013.2216
4.20	Email from Allan McNevin to reporting scientists	17/03/17	FSS.0001.0013.2228
4.21	Email from Matthew Hunt to scientists	27/09/18	WIT.0003.0134.0001
4.22	Emails between Matthew Hunt to ors and AP	13/06/19 – 21/06/19	FSS.0001.0013.2212
4.23	Email from Alicia Quartermain and Matthew Hunt	17/06/19	FSS.0001.0013.2214
4.24	Email from Allan McNevin to others	5/09/19 – 12/09/19	FSS.0001.0013.2231

4.25	Correspondence from Allan McNevin to reporting scientists re: Project #181 – presentation from last management team meeting	07/04/20 – 08/04/20	FSS.0001.0013.2238
4.26	Email correspondence from Allan McNevin re: review final report	02/07/20	FSS.0001.0052.7972
4.27	Email correspondence from Allan McNevin to Matthew Hunt and Chelsea Savage re: consideration of TSI	27/07/20	FSS.0001.0052.7148
4.28	Email correspondence from Matthew Hunt & ors	10/09/20	FSS.0001.0052.7129
4.29	Email correspondence between Allan McNevin & ors	18/11/20	WIT.0006.0003.0001
4.30	Email correspondence from Allan McNevin & Ors (Project #181 implementation)	19/11/20 - 27/11/20	FSS.0001.0060.2890
4.31	Email correspondence from Allan McNevin & Ors (Project #181 implementation)	19/11/20	FSS.0001.0060.3230
4.32	Email from Chelsea Savage and Cathie Allen re: project unsuitable for publication in Australian Journal of Forensic Sciences	07/05/21	FSS.0001.0060.2918
4.33	Correspondence from FSS HEC to Alan McNevin	30/09/21 – 05/10/21	FSS.0001.0060.2924
<b>5.</b>	<b>Project #181</b>		
5.1	Project brainstorming document	Undated	FSS.0001.0013.2171
5.2	Initial Request Form – Project #181	02/06/16	FSS.0001.0013.2386
5.3	Project Plan – Stage 2 – Project #181	20/07/16	FSS.0001.0013.2174
5.4	Feedback Matrix		FSS.0001.0013.2320
5.5	Project Proposal #181 – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt and Allen)	16/08/16	FSS.0001.0013.2145
5.6	Project Proposal #181 - version incorporating feedback post review – <b>SIGNED</b>	13/10/16	FSS.0001.0013.2145
5.7	Presentation – Project #181 – Results after first experiment and proposed next steps	Undated	FSS.0001.0013.4142
5.8	Project #181 (Part 2) - Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Brisotto) – <b>SIGNED</b>	04/05/2017	FSS.0001.0013.2516
5.9	Post experiment 2 feedback matrix	Undated	FSS.0001.0013.2317

5.10	Interim Report – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Allen)	March 2017	FSS.0001.0060.3505
5.11	Project #181 – Schematic for proposed part 3 of project	Undated	FSS.0001.0013.2167
5.12	Project #181 (Part 3) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Brisotto)	May 2018	FSS.0001.0013.2082
5.13	Project #181 (Part 3) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Brisotto) – <b>SIGNED</b>	05/06/2018	FSS.0001.0013.2524
5.14	Post experiment 3 feedback matrix	Undated	FSS.0001.0013.2318
5.15	Project #181 (Part 4) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Brisotto)	Feb 2019	FSS.0001.0013.2125
5.16	Project #181 (Part 4) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Caunt & Brisotto) - <b>SIGNED</b>	08/03/19	FSS.0001.0013.2544
5.17	Project #181 (Part 4 amended) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Savage, Hunt & Brisotto)	June 2019	FSS.0001.0013.2134
5.18	Project #181 – Experiment 4	Undated	FSS.0001.0013.2184
5.19	Project #181 – Experiment 4 – Additional Testing Notes	19/06/19	FSS.0001.0013.2188
5.20	Post experiment 4 feedback matrix (amended)	Undated	FSS.0001.0013.2319
5.21	Project #181 (Part 4 – additional testing) – Investigation into the sensitivity of spermatozoa microscopy (McNevin, Savage, Hunt & Brisotto) – <b>SIGNED</b>	01/07/19	FSS.0001.0013.2532
5.22	Presentation – Project #181 Update (Hunt & Savage)	05/09/19	FSS.0001.0013.4298
5.23	Presentation – Project #181 Update	02/04/20	WIT.0003.0127.0001
5.24	Feedback project finalisation matrix	April 2020	FSS.0001.0013.2321
5.25	Final project feedback matrix	July 2020	FSS.0001.0013.2322
5.26	<b>Final report - Project #181 Spermatozoa Microscopy Sensitivity – SIGNED</b>	05/08/20	FSS.0001.0013.3925
5.27	FSS HEC Retrospective ethics submission	21/10/21	FSS.0001.0013.3563

5.28	Proposed Project #181 implementation workflow	Undated	FSS.0001.0013.2071
<b>6.</b>	<b>Project #181 – Spreadsheets</b>		
6.1	Project #181 Results		FSS.0001.0013.4277
6.2	Project #181 Results (Archive)		FSS.0001.0013.4152
6.3	Project #181 Results back-up (as at 17/02/2020)	17/02/20	FSS.0001.0013.4171
6.4	Project #181 Results back-up (as at 16/12/2019)	16/12/19	FSS.0001.0013.4170
6.5	Project #181 Results back-up (as at 12/03/2018)	12/03/18	FSS.0001.0013.4172
<b>7.</b>	<b>ESR Review</b>		
7.1	Written request to New Zealand Institute of Environmental Science and Research (ESR) to “examine the processing of sexual assault investigation kits in the Forensic DNA Analysis laboratory to ascertain its validity as an acceptable, scientific process”	31/01/17	FSS.0001.0024.1535
7.2	ESR Report – Forensic DNA Analysis (FSS)	2017	FSS.0001.0066.9417
7.3	Provided document – AP paper – False Positive Investigation (Caldwell & McNevin)		FSS.0001.0066.9267
7.4	Provided document – Procedure for examination of sexual assault cases QIS #32106v4		FSS.0001.0066.9256
7.5	Provided document – The Acid Phosphatase Screening Test for Seminal Stains QIS #17186v12		FSS.0001.0066.8897
7.6	Provided document – Examination for and of spermatozoa QIS #17189v13		FSS.0001.0013.2025
7.7	Provided document - Detection of Azoospermic semen in casework samples QIS #17185v10		FSS.0001.0066.9230
7.8	Provided document – Examination of Items QIS #17142v13		FSS.0001.0066.8869
7.9	Provided document – Microscopy of smears QIS #17037v17		FSS.0001.0066.8868
7.10	Provided document – SAIK Medical Form QIS #31281v5		FSS.0001.0066.8965
7.11	Provided document – SAIK Details Record QIS #23898v6		FSS.0001.0066.8918
<b>8.</b>	<b>General/Miscellaneous</b>		



8.1	Workflow used in Forensic DNA Analysis prior to this project being conducted	Undated	FSS.0001.0013.2001
8.2	Workflow being testing during this project	Undated	FSS.0001.0013.2002
<b>9.0</b>	<b>Similar Analysis Work (Unfinished)</b>		
9.1	Unfinalised report – Sexual assault modified process data review	May 2017	FSS.0001.0051.5155
9.2	Sexual assault modified process data review notes	31/03/2017	FSS.0001.0051.5222
9.3	Sexual assault modified process data		FSS.0001.0051.5226
<b>10.</b>	<b>Supplementary Material</b>		
10.1	SOP – Investigating Adverse Events in DNA Analysis		FSS.0001.0024.7828
10.2	Signed statement of Jacqueline Wilson and exhibit (Sperm Microscopy Final Report)		
10.3	Signed statement of Dr Adam Griffin and exhibits		
10.4	Signed statement of Chelsea Savage and exhibits		
10.5	Email from Kirsten Scott to others	27/05/16	FSS.0001.0079.5432
10.6	Email from Allan McNevin to others	27/05/16	FSS.0001.0079.5489
10.7	Email from Adrian Pippa and Justin Howes	27/07/16	FSS.0001.0079.5361
10.8	Signed statement of Matthew Hunt and exhibits		