Commission of Inquiry
to examine DNA Project 13 concerns

Brisbane Magistrates Court
Court 40, 363 George Street, Brisbane

On Monday, 30 October 2023 at 10am

Before: The Hon Dr Annabelle Bennett AC SC, Commissioner

Counsel Assisting:

Mr Andrew Fox SC (Senior Counsel Assisting)
Ms Gabriella Rubagotti (Counsel Assisting)

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1 THE COMMISSIONER: Good morning, everybody. I will just
2 get myself sorted. There have been a few issues just
3 getting ourselves in and ready for this morning in here.
4
5 I want to make a brief opening to outline a couple of
6 matters and then I will take appearances.
7
8 This Commission was established on 5 October 2023 to
9 inquire into matters that have arisen following the
10 conclusion of the Commission of Inquiry Into Forensic DNA
11 Testing in Queensland in November 2022.
12
13 Those matters relate to the extraction of DNA from
14 samples taken from crime scenes using the automated DNA IQ
15 process. The DNA IQ process was implemented in
16 Queensland's Forensic and Scientific Services in 2007. The
17 Queensland Forensic and Scientific Services report on the
18 verification of the DNA IQ process is Project 13.
19
20 Questions relating to the integrity of the work of
21 forensic sciences in Queensland are clearly of importance,
22 in particular insofar as is necessary for the results to be
23 reliable and for people to have faith in the system. This
24 Inquiry is being brought into being because of the nature
25 of concerns that have been privately and publicly
26 expressed.
27
28 The Inquiry is framed by terms of reference. Those
29 terms of reference are:
30
31 That the Commissioner will undertake an open and
32 independent Inquiry to:
33
34 (a) review recent public statements and other
35 documents including but not limited to documents that were
36 provided by Queensland Health in relation to Project 13;
37 and
38 (b) consider whether recommendations in the report -
39 that is the Sofronoff report - are sufficient to address
40 the matters raised in the above materials; and
41 (c) in undertaking (a) and (b), interview any or all
42 experts who provided advice in the Commissions of Inquiry
43 Order (No.3) 2022 in relation to Project 13 or related DNA
44 extraction methods.
45
46 So it can be seen that the terms of reference are
47 reasonably clear and are reasonably narrow in scope and, of

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course, this Inquiry will be confined to those terms of reference.

But first, I appreciate the amount of work that has gone into the statements and responses to notices served. It is my intention to take careful regard of all material relevant to the terms of reference.

Specifically, I must examine public statements and other material about Project 13 and consider whether the recommendations of the Forensic DNA Testing Inquiry are sufficient to address concerns raised in those public statements and other materials.

The Inquiry is working within very strict time frames. It has requested and received a large amount of material under notice to produce from Queensland Health, the Department of Justice and Attorney-General's and other organisations and individuals. These documents, together with public statements and the evidence given at the hearings this week will inform my findings and report.

The Inquiry will undertake its work as transparently as possible. Hearings will be live streamed and transcripts, along with witness statements and exhibits, will be published on the Commission's website where possible.

The first focus of hearings will be the Project 13 report. This morning we will hear concurrent evidence from the scientific officers who were involved in the implementation and review of the DNA IQ process at Queensland Forensic and Scientific Services and who were the authors of the Project 13 report.

Tomorrow, the Inquiry will hear concurrent evidence from scientists who provided expert evidence to the Forensic DNA Testing Inquiry about matters relating to the DNA IQ process and Project 13.

There will then be further evidence, the exact nature of which will probably depend to some degree on what comes out of the first two days' evidence. But it will extend, of course, to looking at current practices as to the extraction and testing of DNA insofar as that relates to the matters within Project 13.

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1 I'm aware of the significant media interest in these
2 proceedings and so I wish to take this opportunity to
3 remind members of the media of the media protocols,
4 particularly in relation to recording, re-broadcasting or
5 publishing the live stream. The media protocols are
6 available on the Commission's website.
7
8 I will now take appearances. Mr Fox?
9
10 MR A FOX SC: If the Commission pleases, I appear with my
11 learned friends Ms Rubagotti, Ms Bembrick and Ms Constable
12 as counsel assisting.
13
14 MR G R RICE KC: I appear for Queensland Health with my
15 learned friends Mr L Dollar and Ms L Dawson, instructed by
16 Crown Law.
17
18 THE COMMISSIONER: Thank you. Are there any other people
19 who wish to announce appearances for the purposes of
20 today's proceeding?
21
22 MS A C FREEMAN: Yes, thank you, Commissioner. My name is
23 Freeman, initials AC, counsel instructed by MinterEllison,
24 appearing with Ms Cooper, initials EJ, for the following
25 people: Ms Gallagher, Ms Iannuzzi, Ms Lundie, Mr McNevin,
26 Mr Muharam and Mr Nurthen.
27
28 MR S C HOLT KC: May it please the Commission. My name is
29 Holt, initials SC, KC I appear with my learned friend
30 Ms Hughes of counsel. We appear for Ms Vanessa Ientile and
31 we're instructed by Holding Redlich, may it please the
32 Commission.
33
34 MR G W DIEHM KC: Commissioner, my name is Diehm,
35 D-I-E-H-M, initials GW. I appear with my learned friend
36 Ms Goldie, initials JM, instructed by Ashhurst, for
37 Professor Linzi Wilson-Wilde.
38
39 MR A McLEAN-WILLIAMS: Commissioner, my name is
40 McLean Williams, initial A. I appear for Ms Amanda Reeves,
41 instructed by Macpherson Kelley.
42
43 THE COMMISSIONER: All right. I think that means that
44 we've now had the formalities dealt with. We're now going
45 to, I think, open up the evidence, after you make an
46 opening, Mr Fox, to outline some of the matters, then we
47 will go into evidence?

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MR FOX: Yes, thank you, Commissioner. There are just a couple of matters by way of introduction, if I may.

THE COMMISSIONER: Sure.

MR FOX: You have already indicated in respect of the terms of reference, which are important in the way in which they have been crafted. May I just say some observations in relation to the way in which this matter finds us here today.

Following the delivery of Mr Sofronoff's final report the Queensland Government indicated that it accepted all of the Commission's recommendations. As part of the implementation of all of those recommendations, a new administrative unit known as the Forensic Science Queensland or FSQ was established to focus solely on the delivery of forensic DNA and chemistry services within Queensland.

That new unit is headed up by Adjunct Professor Linzi Wilson-Wilde, who was appointed as the CEO to lead FSQ through the necessary reform process. To guide that implementation an advisory board was established, which has been chaired by the former Commissioner, Mr Sofronoff KC, and also former president of the Children's Court of Queensland, Ms Julie Dick SC.

The board consists also of senior experts from the criminal justice system, victim advocacy and forensic science agencies. All are expected to play a critical role in restoring the integrity and transparency of the delivery of Queensland's forensic service.

In September 2023, so just over a month or so ago, the advisory board reported to the Queensland Government that in the eight months since it had been established - that is, after the final report had been delivered - almost three-quarters of the Commission's 123 recommendations have been delivered or are currently being progressed.

If I can then make some observations about Project 13. It has been styled in those terms because of a report. The evidence that you will hear this morning from the various scientists who were associated with that task regarded it as an automation project - that is, the implementation of

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automation within the lab.

So Project 13, we constantly refer to by those terms, but just so that people are aware, it didn't have some special name within the lab. There are a series of projects that had developed through the laboratory, each happened to be given a number, and you will hear later today they go up to 21, 22 and indeed into 70.

Now, Project 13 concerns the introduction in October 2007 at the laboratory, then known as the Queensland Health Forensic and Scientific Services, or QHFSS, of a fully automated DNA testing system using a device known as the MultiPROBE II PLUS HT EX forensic work station platform, which I'll just call "the MultiPROBE device". The MultiPROBE device was, at that time, known to be suitable for use in automated testing.

Before October 2007, DNA testing was conducted manually by the staff in the laboratory using a chemistry set known as the DNA IQ protocol, which was manufactured by Promega Corporation in the US.

The DNA IQ protocol had been investigated by a team of seven scientists at the laboratory, together with four other potential extraction kits made by other manufacturers. The team of scientists, which I'll call the Project 9 team, produced a report dated June 2007, known as the Project 9 report. That reported on their investigation of these five extraction kits and recommended that Promega's DNA IQ protocol be the one that be adopted for use in the laboratory.

So that it is clear, there is no suggestion that Promega's DNA IQ protocol was not fit for proper purpose whether for manual extraction or for potentially an automated system but, at that time, Project 9 was only looking at the DNA IQ protocol with respect to suitability for manual extraction.

Now, as was addressed in the course of the first Inquiry, the laboratory was at that time under considerable pressure to reduce a significant backlog of specimens and material for DNA testing. That was addressed as part of the first Inquiry and it is also addressed in the final report, but an important background for present purposes is a 2005 report, dated October 2005, in fact, by the

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1 Ministerial Taskforce, Forensic and Scientific Services,
2 report titled "Report on the Role and Function of Forensic
3 and Scientific Services in the Queensland Government".
4
5 At paragraph 6.4.5 of that report, is a subheading
6 titled "Automation" and it indicates that money was being
7 put aside for the very task of purchasing a robotic system
8 that was to introduce automation of processes so as to
9 assist in reducing this significant backlog that then
10 existed. That particular section of the report also
11 indicated that the process of validation of any automated
12 system might well take up to 12 months to implement. So
13 this is not something that was going to be a quick fix; it
14 was always going to be something that needed to be looked
15 at carefully within the laboratory and, over a period of
16 time, introduced.
17
18 You have also indicated in your opening to the
19 Commission this morning, Commissioner, that recommendation
20 105 is an important recommendation - that is, one where, at
21 the conclusion of the Sofronoff report, the laboratory was
22 tasked with the exercise of investigating, as far as it
23 wished, the notion of retesting and samples that needed to
24 be retested - how far might that go back, how might they
25 engage in that exercise.
26
27 Now, there will be evidence before the Commission in
28 this hearing this week that indicates that a decision has
29 been made by the laboratory to do further testing which
30 goes right back to the origins that I've just been
31 describing - that is, from the very time when the DNA IQ
32 system commenced being used.
33
34 So that that can be made clear that there is not going
35 to be a debate before you during the course of this week as
36 to whether there is a particular point in time where the
37 testing goes back to. The decision has been made that it
38 will go back to the very beginning, so far as there is a
39 capacity to do testing, and that will no doubt be explored
40 during the course of this week.
41
42 Two other matters then just to mention briefly by way
43 of introduction. This is now particularly referable to the
44 experts that we will hear from shortly. I have given an
45 indication of the Project 9 team. Those people are all
46 people that we find their names in the later documents that
47 I will be coming to. So there was consistency in terms of

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1 the personnel. After Project 9, was what was called
2 Project 11, and then I will move to Project 13.
3
4 So the laboratory then investigated - in terms of the
5 commencement of looking at automation, after having done
6 Project 9 and picking the DNA IQ protocol for manual
7 introduction, in manual use, they then start the automation
8 process, at least in terms of investigating the next
9 stages, in around the period June to October 2007.
10
11 That process starts with the Project 9 team producing
12 a new report being a Project 11 report. But what this
13 concerns is investigating and reporting on a modified
14 method of the manufacture's process for the DNA IQ
15 protocol. So what they concluded in the Project 11 report
16 was that certain modifications could be made to the
17 manufacturer's preferred - or settings, if you like, for
18 the DNA IQ manual system, and they then looked at those
19 particular modifications that they made and they say that
20 in the end they concluded that by way of validation, they
21 had satisfied themselves that the amendments or
22 modifications they made were satisfactory.
23
24 Then from that point, we find the scientists moved to
25 testing the full automation, which is Project 13, and here
26 we have the introduction of the modified DNA IQ protocol,
27 with the MultiPROBE device, and that's what we call the
28 automated system. So those are the stages that work their
29 way through.
30
31 I will be dealing with the experts briefly to get us
32 to that particular point. But no doubt they have been
33 listening and to the extent there is any difference of
34 opinion, they will let us know.
35
36 Can I then just introduce each of the various experts
37 who are going to appear today. Before I do so, can
38 I indicate that we have circulated, and there is a hard
39 copy for you, Commissioner, a tender list for today's
40 purposes. I might just provide the Commission with a copy
41 of that.
42
43 I will formally tender documents, Commissioner,
44 whenever you would like me to do so, but at this stage
45 I don't think - for the moment I will just walk you through
46 what the document is.
47

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1 The first row there you will see is what we styled as
2 the first report of Dr Kirsty Wright, which is her
3 assessment of the Project 13 report and the circumstances
4 around it, based on her review of documentation that she
5 had prior to receiving all of the expert statements in
6 this proceeding. Then you will see at rows 2, 3, 4, 5 and
7 6 are the various annexures to that first report and,
8 indeed, row 7 as well.
9
10 Then following, from row 8, are the various statements
11 of the various scientists that are being relied upon for
12 today's purposes. Then what we've done over the page, you
13 will see separately it starts with item 23, the Project 13
14 report, then the Project 9 report, 11, 21, 22 and 70, which
15 I briefly mentioned.
16
17 The other documents that are all there - you will see
18 they have various TN references - those are coming from
19 Mr Nurthen's statement. We just thought it was convenient
20 to have them itemised individually so that if there was
21 a need to bring them up on the screen we can get them
22 quickly rather than being buried through pages of
23 annexures. Strictly, those are all repeated from materials
24 that are there.
25
26 The only other matter to indicate I think is item 52
27 relates to the MultiPROBE device and if we need to go
28 there, I think it is one of the standard operating
29 procedure documents. That's in terms of the tender list,
30 but as I say, I won't formally tender anything unless you
31 would wish me to do so.
32
33 THE COMMISSIONER: No, I think it might be handy to deal
34 with, otherwise we will forget.
35
36 MR FOX: Certainly.
37
38 THE COMMISSIONER: It is probably convenient to admit into
39 evidence before the Inquiry documents 1 to 52 with the
40 document ID references probably the best ways to
41 encapsulate the identification of each document.
42
43 **DOCUMENTS 1 TO 52 ADMITTED INTO EVIDENCE BY REFERENCE TO**
44 **THE DOCUMENT ID REFERENCES ALLOCATED TO THEM**
45
46 MR FOX: So I can then indicate who is going to be in the
47 expert conclave this morning. Firstly, we have Mr Nurthen.

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His role was between September 2004 and June 2006. He was a scientist in forensic biology at Queensland Health, forensic services. Then between June 2006 and October 2008 - so we're then into that very territory of the acquisition of the DNA IQ protocol and the automation - he was a senior scientist in the automation implementation project. His evidence indicates that that was a temporary project position that he held at that time.

Then, after that - that's from October 2008 - he then, through to 2012, was a senior scientist in quality and projects in the DNA analysis. Since 2012, he continues to be employed by what is now known as Forensic Science Queensland, as a reporting scientist in the forensic biology division.

Nextly, Mr McNevin. Mr McNevin was in the analytical team. There is a difference, as you, Commissioner, will appreciate from the evidence that you have read so far, as we have an automation team that deals with the automation implementation project, then there's an analytical team that act separately but, as you will hear, there is some degree of consultation between the two and dealings between the two, so an artificial boundary line that existed in the laboratory between them, separating them.

From September 2004 to June 2006 he was a scientist in the analytical team; from June 2006 to February 2014 he was a senior scientist in that same team; then from February 2014 to October 2021, he was a senior scientist in the evidence recovery team; and from 2021 he is a reporting scientist at QHFSS.

Ms Ientile was the managing scientist at QHFSS from 2004 to July 2009. There was a period, though, where she left the organisation in about July 2008 and then it was Ms Allen, who then assumed the role of the managing scientist.

Mr Muharam, from September 2004 to January 2009, was a scientist in the forensic biology analytical team. Then he left the organisation.

Dr Hlinka, from May 2004 to May 2023, was a forensic scientist within QHFSS, and he was a project leader in 2004 to 2006 of the DNA processing improvement project, and from 2004 to 2008, but mainly he says in his evidence between

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1 2006 and 2008, he was a scientist of forensic biology and
2 a member of the automation project team.
3
4 And finally, Ms Gallagher, she was from March 2006 to
5 the end of 2006, an operational officer, and from the end
6 of 2006 to May 2008, a project scientist in the automation
7 implementation project team.
8
9 Those are the only matters I wish to say by way of
10 introduction. I think Mr Muharam is going to be appearing
11 by videolink.
12
13 Dr Hlinka has not been well and he has kindly
14 indicated - and I appreciate from the dealings that we have
15 had with him that he has made a considerable effort to try
16 to participate today due to his ill health, and we are
17 endeavouring to have him by telephone. Just before you
18 came on, Commissioner, we were able to indicate that he was
19 ready to go and would participate for as long as the
20 process would let him do so, in terms of his physical
21 condition.
22
23 THE COMMISSIONER: I should just interpolate to say that
24 if Mr Hlinka feels at any time, if he is online and can
25 hear me, if he needs to take a break for any reason, we can
26 always take a short adjournment to deal with that.
27
28 MR FOX: Thank you, Commissioner. That's all I want to
29 say by way of opening.
30
31 THE COMMISSIONER: Thank you, Mr Fox. What I propose to
32 do is to ask those people who are going to engage in the
33 first hot tub, as we call them, to come into - over there,
34 is that the witness box? I guess it must be. Over there.
35
36 The first thing we will do is to swear each of them
37 in, and then I will explain - if someone can get them, they
38 are not here; they are not in the room yet - to them the
39 way in which the hot tub will be conducted. It may also
40 assist counsel if I explain that as well. I gather they
41 are now being got.
42
43 MR FOX: Now being gathered.
44
45 THE COMMISSIONER: Are there enough seats? Oh, there are,
46 because two are remote. Yes. Thank you very much.
47 I think if you can come and take seats over here, that

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1 would be very helpful. Just take a seat and make
2 yourselves comfortable. We're going to ask each of you to
3 take the oath or affirmation, depending on whichever you
4 choose, then I'm going to explain to you a little bit about
5 how this is going to work. I will ask you each if you
6 would just - do you want to call them formally, with their
7 names, then we'll just swear them.
8
9 MR FOX: Ms Ientile, would you say your full name to the
10 Commission, please.
11
12 MS IENTILE: Yes, Vanessa Kate Ientile, thank you.
13
14 MR FOX: And Mr Nurthen?
15
16 MR NURTHEN: Thomas Edmund Kersey Nurthen.
17
18 MR McNEVIN: Allan Russell McNevin.
19
20 THE COMMISSIONER: We will start with you, Ms Ientile. Do
21 you wish to take an oath or an affirmation?
22
23 **<VANESSA KATE IENTILE, sworn: [10.24am]**
24
25 **<THOMAS EDMUND KERSEY NURTHEN, affirmed: [10.24am]**
26
27 **<ALLAN RUSSELL McNEVIN, affirmed: [10.24am]**
28
29 THE COMMISSIONER: Thank you. We probably should then deal
30 with the two who are remote. Did you say one was on video?
31
32 MR FOX: Yes.
33
34 THE COMMISSIONER: I can see him.
35
36 MR FOX: Apparently we've got two now, I'm told.
37
38 THE COMMISSIONER: On video?
39
40 MR FOX: Quite so. There are two on video and one by
41 telephone, I think. That's Ms Breanna Gallagher.
42 Ms Gallagher, can you hear us?
43
44 MS GALLAGHER: Yes, I can hear you now.
45
46 **<BREANNA GALLAGHER, affirmed: [10.25am]**
47

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MR FOX: Iman Muharam, are you there?

MR MUHARAM: Yes, I am here.

MR FOX: Can you please state your full name?

MR MUHARAM: Iman (indistinct) Muharam.

<IMAN MUHARAM, affirmed: [10.26am]

MR FOX: Finally, by telephone, we should have Mr Hlinka. Oh, he is by Zoom now. Apparently he is now on video, which is better. Dr Hlinka, can you hear us?

DR HLINKA: Yes. Can you hear me?

MR FOX: Yes, we can, thank you. Would you say your full name to the Commission

DR HLINKA: My full name is Vojtech Hlinka.

MR FOX: Thank you.

<VOJTECH HLINKA, affirmed: [10.28am]

THE COMMISSIONER: Thank you very much.

I'm now going to give a bit of an explanation on the way this is going to work hopefully. It is both formal and not formal, if I can put it that way.

The idea is that you all had different jobs to do during the course of the matters that we're looking at, but we thought it best to put you all in together rather than have someone say, "That wasn't me", and we'd have to call people backwards and forwards. So there will be some questions asked of you and there might be a question directed specifically to one of you, but if anyone else wishes to add anything, if you just indicate, either with a physical hand up, and if we don't see you and if you are on screen, if you know how to work the electronic hand, you can always put that up. Probably after each set of questions I will ask whether anybody wishes to add anything.

So you can add, you can qualify, and if you don't

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1 remember, you don't remember, but we're trying to get the
2 whole of the picture here to the extent that we can for
3 what occurred in this time frame.
4
5 So you should understand that your statements have
6 been read and they will be in evidence. So no-one's going
7 to take you back through all of those matters in your
8 statement. There will be questions asked perhaps around
9 it, and don't feel - if you want to repeat what is in your
10 statement or draw attention to it, that's fine, but we're
11 not going to read them all out now and do that.
12
13 So there will be some questions asked. Each of you is
14 able simply to - anyone who feels they can assist by
15 responding to that, please do so, and if somebody says
16 something and you wish to qualify, change, expand, or even
17 if you don't agree with it, or if you have a different
18 recollection of it, feel free to do that, because what
19 we're trying to do is to get an understanding of what
20 actually happened during the course of the validation
21 procedure.
22
23 Does anyone have any questions? Okay, if anyone feels
24 a need, Mr Hlinka in particular - if anyone feels that they
25 would like a five-minute break for any reason, please
26 indicate it. This is not meant to be personally as arduous
27 as that. We're going to try to make it as sensible as we
28 can, but the whole idea is we're in a short time and this
29 is the most efficient way to get the information to us.
30
31 What will happen is Mr Fox will start by asking some
32 questions. I may intervene and ask my own questions if
33 I want to add anything. Don't worry, my questions don't
34 necessarily have any greater import that anybody else's, it
35 might just be something that I want to have clarified or to
36 help me understand.
37
38 Counsel will get a chance to ask any questions that
39 they feel that they want to draw out from you while you are
40 here. We may have to bring you back if there is something
41 that comes up later but we will try and deal with
42 everything to the extent, in relation to this subject
43 matter, while you are here today.
44
45 As far as counsel are concerned, if we change topics
46 and move on, I might ask if you want to, if there is
47 something desperate that you want to add in to something

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1 because you think it's the right time, just, please, give
2 me an indication.
3
4 To the extent that there is going to be evidence -
5 I mean, it can be either, of course, evidence that you wish
6 to draw and if anyone wishes to cross-examine, of course,
7 there will be an opportunity to do that as well. But some
8 of the questions can be directed generally; the questions
9 can be directed to individual witnesses and we'll just see
10 how we go. Okay? If it gets unruly, I'll indicate that.
11 But it's not meant to be a procedure at this stage, other
12 than to try and understand what occurred. So Mr Fox?
13
14 MR FOX: Could I just inquire of those who are handling
15 the technology as to how we're going in being able to get
16 the faces a bit bigger? We're working on it, okay, great.
17
18 THE COMMISSIONER: In the meantime, for those of you, just
19 so you understand, at this end, we have one slightly larger
20 small picture and two microscopically small pictures of you
21 on the screen. That's because in the middle of the
22 screen - we can do it. But, of course, what happens if we
23 have to put documents up, they are going to go up
24 electronically so everybody can see them, including you,
25 which means that your faces are smaller. So if that
26 happens, you might have to wave frantically if you want to
27 add something, if you feel that you - before I get to you.
28 It's not that we're ignoring you; it's just that
29 electronics are only what they are. Okay?
30
31 All right. Does that cover everything you think we
32 need at this stage, Mr Fox? They can put an electronic
33 hand up or they can call out.
34
35 MR FOX: Yes, or just speak out and then we will
36 hear them.
37
38 THE COMMISSIONER: Or just speak out. Don't worry about
39 speaking out. If I know that you want to say something,
40 I will either take what you want to say immediately or
41 I will just say, "Thank you, I note you were going to say
42 something. I'll come to you in a moment." Okay?
43
44 MR FOX: Thank you. The only other introductory matter
45 I was going to add to it was if at any point during the
46 course of answering questions you consider that you might
47 want to descend into things that are a bit technical, feel

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1 free to just mark it and tell us "I can go into a lot more
2 on the technical side of it, but I can also give you the
3 English version", which will obviously help everybody to
4 understand the general point that you are making and then
5 we can descend from there into the science if we need to.
6 Thank you.
7
8 THE COMMISSIONER: I think you can take it though, that as
9 far as I'm concerned and counsel are concerned, we do
10 understand; having read your statements, we have got an
11 appreciation of what's in those and the technology and
12 terminology that you have used. Okay?
13
14 MR FOX: Thank you. Now, I just wanted to start briefly
15 by just talking about Project 9 so that we are all on the
16 same page as to that, then we can get ourselves into
17 practicalities, which is really the first topic for some
18 questions of you.
19
20 I also appreciate that not all of you were employees
21 through the whole of the chronology that we're dealing with
22 today, and so I'm cognisant of that, if you feel it is
23 important to draw that out at any point, please feel free.
24 But at least all on board initially.
25
26 Now, the Project 9 investigation concerned the
27 selection of the DNA IQ protocol for a manual DNA
28 extraction process. That involved looking at five
29 off-the-shelf, so to speak, chemistry sets and then making
30 a selection, which was the DNA IQ protocol. You'll all
31 remember that? Just say "yes". Yes?
32
33 Yes, all right. I appreciate I'm going to ask this
34 question generally, and amongst yourselves, someone can be
35 the person who wants to go first, and anybody else who
36 wants to can then say anything after it, but is it the case
37 that the DNA IQ protocol was the only one that had been, at
38 least from the manufacturer's perspective, shown that it
39 could be used in an automated environment?
40
41 MR NURTHEN: My understanding or my recollection is that
42 we could have validated any of those chemistries on the
43 robots but it was the only one that we had a protocol that
44 was already built by the manufacturers for that particular
45 platform.
46
47 MR FOX: Does anyone want to add anything to what

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1 Mr Nurthen has just said on that topic?
2
3 MR McNEVIN: No.
4
5 MS IENTILE: No.
6
7 MR FOX: Was there any awareness on your part, at that
8 time, that the DNA IQ protocol was better, so to speak,
9 than the Chelex manual process which had been used to that
10 time in the lab?
11
12 MR NURTHEN: The automated one or the manual?
13
14 MR FOX: The manual, just from a manual perspective.
15
16 MR NURTHEN: We certainly had that experience within the
17 validation to show that it was a better method, it got
18 cleaner DNA.
19
20 THE COMMISSIONER: Does anybody wish to cavil with what
21 Mr Nurthen has just said on that front?
22
23 MS IENTILE: No.
24
25 MR FOX: Thank you.
26
27 THE COMMISSIONER: Can you just clarify, when you say
28 "cleaner DNA", you mean DNA more free of impurities?
29
30 MR NURTHEN: Yes, the Chelex method was renowned for not
31 purifying. You would get a lot of DNA that would often
32 have inhibitors, impurities within it, which make it
33 difficult to get a DNA profile. The virtue of the DNA IQ
34 chemistry allowed for washing of the DNA, which meant we
35 got better quality DNA at the end.
36
37 THE COMMISSIONER: Thank you.
38
39 MR FOX: Then move forward to Project 11. This is, as
40 I understand it, in the period of around June to October
41 2007 that Project 11 is conducted. This is what appears to
42 be the first in the series of steps towards automation.
43 And what this involved was a validation exercise concerning
44 a modified form of the DNA IQ protocol, which had been
45 acquired from Promega; is that right?
46
47 MR NURTHEN: Yes, that's correct.

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1
2 MR FOX: Everyone is in agreement with that?
3
4 MS IENTILE: Yes.
5
6 MR FOX: Sorry, Dr Hlinka or anyone on the - anyone
7 wishing to add anything?
8
9 THE COMMISSIONER: Dr Hlinka, did you wish to add
10 something to that?
11
12 DR HLINKA: No.
13
14 THE COMMISSIONER: Can we just make one thing - just to
15 clarify one thing, I know there has been an issue raised in
16 some of the statements, the difference between
17 a verification and a validation, I think - I know that
18 sometimes people use words reasonably loosely. I think in
19 this case, it might be important for us to make clear, when
20 we're talking about a verification and we're talking about
21 a validation, just as a heads-up.
22
23 MR FOX: Now, Mr Nurthen, in your statement - this is your
24 first statement, which is your principal statement - and if
25 at any point you want me to take you to it, I will --
26
27 THE COMMISSIONER: It is not an exam, you can refer to it.
28
29 MR FOX: Exactly, it is not a test. You indicated,
30 starting at paragraph 14 and you mentioned also at
31 paragraphs 26 and 28, that this was validation work that
32 was being conducted on the modified manual method, the
33 manual DNA IQ method. What did you have in mind by that
34 word "validation"?
35
36 MR NURTHEN: Well, verification would take an existing
37 protocol that had already been optimised and then see how
38 it works in-house. The validation, because we were
39 modifying it, would require more work than what you would
40 normally do for a verification.
41
42 MR FOX: When you say "more work", what did you have in
43 mind by that?
44
45 MR NURTHEN: I think more challenging to make sure that it
46 is actually operational, that it is actually working.
47 Coupled with Project 11 as well, we obviously challenged

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1 the system as a whole through other experiments that may
2 not have been done before, with respect to inhibitors, with
3 respect to different substrates that we were extracting
4 from, and if you are doing a verification you may not
5 necessarily do all of that work.
6
7 MR FOX: Does anyone have any comments they want to make
8 on Mr Nurthen's response just then or is everyone in
9 general agreement with that?
10
11 MS IENTILE: Yes.
12
13 MR FOX: Ms Ientile has just indicated yes but does anyone
14 on the screen want to indicate yes or no or otherwise?
15
16 MS GALLAGHER: Yes.
17
18 DR HLINKA: Yes.
19
20 MR MUHARAM: Yes.
21
22 MR FOX: Thank you. Can we turn to the topic of the
23 modifications that were actually made. Each of you have,
24 where you have been able to, because you have some direct
25 knowledge of it, given an indication about some of the
26 modifications that were made.
27
28 Now, Dr Hlinka, can I start with you on this
29 particular topic?
30
31 DR HLINKA: Yes.
32
33 MR FOX: You indicate in your statement that there were,
34 I think, four modifications that you identify. We're just
35 going to work through each of those and it may be that some
36 of your colleagues wish to have some comments to make about
37 it, or they may want to clarify things that you might say.
38 So let's just start with the first modification that you
39 indicated, which was the inclusion of a lysis step using an
40 extraction buffer in the presence of Proteinase K. That's
41 before the incubation in the DNA IQ lysis buffer. Do you
42 recall that?
43
44 DR HLINKA: Yes, I do. That derives from the Centre of
45 Forensic Sciences protocols, CFS in Toronto, Ontario. So
46 we used the TNE buffer that consisted of - well, the
47 extraction buffer consisted of a TNE buffer, Proteinase K

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1 and SDS to make a total volume of 300 microlitres.
2
3 MR FOX: Thank you. Now, the audio is reasonably good
4 here but not perfect, so just to understand, I think you
5 indicated that this step, this modification, the inclusion
6 of the lysis step, followed the CFS automated protocol;
7 that's correct?
8
9 DR HLINKA: That's correct.
10
11 MR FOX: And so that was not following the Promega
12 automated protocol. That's your evidence; is that right?
13
14 DR HLINKA: No, that's - I don't know what you are
15 referring to regarding a Promega automated protocol.
16 It's --
17
18 MR FOX: So the Promega is the --
19
20 DR HLINKA: The Promega protocol is a manual protocol
21 usually for DNA IQ, yes, for case work samples.
22
23 MR FOX: So if you just look at your statement --
24
25 DR HLINKA: Yes.
26
27 MR FOX: -- you will see on page 11, at point number 2 -
28 it may be that I have misunderstood what you're saying
29 there. Just to understand where you got your understanding
30 of this, if you like, the appropriateness of making this
31 modification, is that it follows the CFS automated
32 protocol?
33
34 DR HLINKA: Yes.
35
36 MR FOX: But it is not one that you saw in the Promega
37 protocol; is that right?
38
39 DR HLINKA: Yes, the Promega DNA IQ has a different -
40 well, similar lysis buffer but it slightly varies in
41 concentration. That's correct.
42
43 MR NURTHEN: Commissioner, if I could just clarify,
44 I think the confusion here is, when we're talking about
45 modifying, we have the Promega protocol, which is one
46 supplied by the manufacturer, and they hadn't supplied an
47 automated one but PerkinElmer did supply an automated one,

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1 which is the CFS protocol.
2
3 THE COMMISSIONER: My understanding is that the CFS
4 protocol - which came with the MultiPROBE, didn't it?
5
6 MR NURTHEN: Yes, it did.
7
8 THE COMMISSIONER: And it had been validated for use on
9 the MultiPROBE?
10
11 MR NURTHEN: Yes.
12
13 THE COMMISSIONER: The CFS protocol had been validated for
14 use on the MultiPROBE; is that correct?
15
16 MR NURTHEN: Yes.
17
18 THE COMMISSIONER: And the DNA IQ, the Promega one, was
19 not identical to that?
20
21 MR NURTHEN: No, it was different, and the CFS protocol,
22 whilst validated by them, already included that TNE step at
23 the start. I think what Vojtech's referring to, at least,
24 is the Promega protocol.
25
26 DR HLINKA: That's correct.
27
28 MR NURTHEN: So what I see the modification, we didn't
29 modify the TNE part of the CFS, our step had the same part
30 of that.
31
32 DR HLINKA: Yes.
33
34 MR NURTHEN: But it was different from the Promega.
35 I think that's where Vojtech, when he answered that
36 question, was referring to the Promega.
37
38 THE COMMISSIONER: Does it come down to the fact that when
39 you started using the MultiPROBE, you started - you worked
40 on the basis of the CFS protocol?
41
42 MR NURTHEN: Yes.
43
44 THE COMMISSIONER: And then adapted that to deal with your
45 own manual?
46
47 MR NURTHEN: Yes.

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THE COMMISSIONER: Your own manual method?

MR NURTHEN: Yes.

THE COMMISSIONER: Is that fair enough, Dr Hlinka?

DR HLINKA: Yes, that's right.

THE COMMISSIONER: Thank you.

MR FOX: Those who can contribute to this discussion agree that that's what was happening and that was the change that was made and why it was made?

MR NURTHEN: That wasn't a change. We started with the CFS protocol and then did some modifications to that. So when we're talking about modifications, I'm referring to modifications to the CFS protocol not the Promega protocol.

MR FOX: Right. Okay.

Then Dr Hlinka, the second modification you talked about in your statement is with respect to the conditions for lysis incubation that was lowered to 37 degrees Celsius, and in your evidence you say that that was to broaden the range of samples that could be used for testing. Do you recall that?

DR HLINKA: Yes, I do. Yes.

MR FOX: Was that bringing the temperature down from around 65 degrees down to 37 degrees Celsius; is that right?

DR HLINKA: Yes, yes, correct.

MR FOX: And again, that followed the CFS automated protocol?

MR NURTHEN: Correct.

DR HLINKA: That's right.

THE COMMISSIONER: Can I just clarify that so I really understand that, because the temperature is an issue. My understanding is that the temperature was reduced in

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1 order - for some of the substrates that were being used, I
2 think nylon was an example, that needed a lower
3 temperature. Then you made the decision to use that same
4 lowered temperature for all samples and you've given
5 reasons for that, which include consistency of practice,
6 which I understand. Did anyone do a double-check to check
7 that that lowered temperature did or did not affect the
8 extraction from other materials that were not nylon or
9 whatever the other one was - nylon polyester.
10
11 MR NURTHEN: I guess it is worth noting that the
12 37 degrees was the temperature from the CFS protocol.
13
14 THE COMMISSIONER: They used it for everything?
15
16 MR NURTHEN: That's their protocol.
17
18 THE COMMISSIONER: Everything?
19
20 MR FOX: For their automated one, yes. So we based off
21 that because it gives you that variety of samples. Gum
22 particularly being an issue that at the higher temperature
23 would go gooey and cause pipetting issues, is
24 my understanding for that. So the 65 degrees, my
25 understanding, is the Promega protocol and each Promega
26 protocol has a separate protocol for the substrate you're
27 working with.
28
29 THE COMMISSIONER: But as far as you were aware, the CFS
30 protocol had validated the use of 37 degrees for all
31 samples?
32
33 MR NURTHEN: Yes, it is called a mixed sample or mixed
34 case work example. Because when you looked at the Promega
35 one you had to run different protocols depending on (a) the
36 material you were trying to extract from and (b) the fluid
37 you were trying to extract from as well.
38
39 THE COMMISSIONER: Does that accord with your - do you
40 want to add anything to that, Dr Hlinka?
41
42 DR HLINKA: Yes, that's basically the general gist of it.
43 It was to encompass a whole range of different sample types
44 to avoid problems with DNA being encased by dissolving
45 samples which would have lowered the yield and so on as
46 well.
47

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1 THE COMMISSIONER: Sorry, do you want to say that again?
2 Can you say that one other thing --
3
4 DR HLINKA: I will rephrase it. If the higher temperature
5 had been used, then heat labile samples could have also
6 encased DNA and lowered the yields, potentially. That's
7 with regard to the 37 degrees Celsius which was present in
8 the CFS protocol.
9
10 THE COMMISSIONER: Thank you. By the way, I'm not trying
11 to stop Dr Muharam or Ms Gallagher from chiming in. If you
12 wish to chime in, raise your hand or say something. That
13 obviously applies to you, too, Ms Ientile and Mr McNevin.
14 Thank you. Sorry Mr Fox, back to you.
15
16 MR FOX: And just on that topic, some of my questions may
17 seem very pointed. I may just have to be direct from time
18 to time with you. But were any of you concerned by the -
19 as a methodological approach, to adopt the CFS protocol
20 in that way - that is, it is seen in that protocol that
21 37 degrees worked across a broad range of samples. But was
22 adopting that, from your perspective, a sound course?
23
24 MR NURTHEN: I think so, yes, because in addition to
25 lowering the temperature, the introduction of the
26 Proteinase K somewhat accounted for the decrease in
27 temperature. That first step is about breaking open the
28 cells and allowing the DNA to get out. So having a lower
29 temperature and then coupling that with the Proteinase K,
30 which actually would allow the cells to break, would
31 counteract then having that 65 degree, which was what was
32 in the Promega protocol.
33
34 THE COMMISSIONER: There are two questions arising out of
35 that. First, just for my knowledge, this has nothing to
36 do, then, with the need to denature the DNA? This is just
37 a lysis step, temperature?
38
39 MR NURTHEN: Correct.
40
41 THE COMMISSIONER: Because you need to decrease the DNA to
42 undo the helix; right?
43
44 MR NURTHEN: Yes.
45
46 THE COMMISSIONER: That's not that step?
47

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1 MR NURTHEN: No.
2
3 THE COMMISSIONER: I have another question just following
4 Mr Fox's. Why, then, did Promega have 65 degrees for
5 different samples? Did anyone sort of think about that?
6
7 MR NURTHEN: I think they optimised that for the
8 particular method that they did and I think there is
9 a reference article Komonski et al, that explored taking
10 that and then trying to automate it. I think, from
11 recollection - I haven't looked at it recently - they found
12 that by putting it in this additional buffer, you were
13 going to get better results than just doing the 65 degree
14 lysis and a wider range of temperatures - sorry, a wider
15 range of substrates.
16
17 DR HLINKA: Might I add to that? 37 degrees Celsius is
18 a perfectly standard and acceptable temperature to perform
19 lysis at. It's not an unusual temperature for different
20 sample types, because Proteinase K works at a broad range
21 of temperatures, so it's not really a critical step.
22
23 THE COMMISSIONER: Proteinase K has optimal or completely
24 satisfactory activity at that temperature?
25
26 DR HLINKA: Yes, that's correct.
27
28 MR FOX: That's your understanding too, Mr Nurthen?
29
30 MR NURTHEN: Yes.
31
32 MR FOX: And Ms Ientile?
33
34 MS IENTILE: I believe so. My role wasn't this detailed
35 part, so I could not add anything to this.
36
37 MR FOX: Thank you. Mr McNevin so far nothing from you?
38
39 MR McNEVIN: No, that sort of thing I usually look up in a
40 book. I wouldn't quote it off the top of my head, sorry.
41
42 MR FOX: Thank you. Can we then move to the third
43 modification you, Dr Hlinka, that you refer to in your
44 statement, Which is now the double elution step. Do you
45 recall giving that evidence?
46
47 DR HLINKA: Yes, I do.

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1
2 MR FOX: This is where the manual and automated
3 DNA IQ methods both involved a double elution step of
4 50 microlitres, whereas the CFS automated DNA IQ protocol
5 had a smaller elution volume towards the lower amount
6 recommended in the Promega manual method - that was using
7 25 to 100 microlitres. Now, would you like to explain
8 about the double elution step and why that was brought in?
9
10 DR HLINKA: Double elution step, we found we - I believe
11 we found we got a higher yield with doing two sets of
12 elutions rather than a single step elution. The volume
13 amount which we ended up using was 100 microlitres to match
14 basic protocol volumes that we had already used in the lab
15 for other methods, and it was a sufficient amount for
16 a workable amount in the lab.
17
18 MR FOX: And Mr Nurthen, you draw attention to this in
19 your main statement about this double elution step, and if
20 I may paraphrase that, you indicated that your recollection
21 was that the experience of the lab was that DNA was still
22 bound to the beads after a single elution step and a double
23 elution step allowed recovery of additional DNA.
24
25 MR NURTHEN: That's correct. I think we even - we may
26 have even tried three elutions as well, but there were
27 diminishing returns and after the third you just diluted
28 out your DNA too much.
29
30 THE COMMISSIONER: That raises the question, doesn't it?
31 As I understand what I'm hearing, you do two elutions
32 because that increases the extraction, the amount you can
33 extract from the beads, but at the same time, you're
34 diluting it, and you're not - let's not go into
35 micro-concentrations but you're not taking any steps to
36 concentrate it again. So wasn't there a concern that by
37 increasing the volume of the elute that you were decreasing
38 concentration of DNA?
39
40 MR NURTHEN: I think that was looked into but I think the
41 pay-off was that we were seeing that much better quality in
42 yields at the double elution than the single elution that
43 meant whilst you would have had a lower yield,
44 concentration - per concentration, it was better to go for
45 the double. Whilst, yes, you might have a slightly lower
46 concentration, with that higher yield, if there was DNA
47 there that if you needed to do additional concentration

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1 down the - through the process, you could do that as well.
2
3 THE COMMISSIONER: Did you do that?
4
5 MR NURTHEN: Additional concentrations? Yes, through the
6 laboratory, microcon concentrations were used to
7 concentrate DNA quite regularly.
8
9 DR HLINKA: And also the advantage of the higher elution
10 was that you could go back and retest the sample if that
11 was required to be done at a later stage. So you have
12 a higher amount to be able to work with for --
13
14 MR NURTHEN: Microlitres of extracted DNA to amplify. If
15 it eluted in 50 you would just get two amplifications, so
16 having a higher elution volume actually gave you a little
17 bit more to work with.
18
19 THE COMMISSIONER: In the later stages?
20
21 MR NURTHEN: In the later stages for amplification.
22
23 THE COMMISSIONER: You needed to do replicates or go back
24 and redo it?
25
26 MR NURTHEN: Yes.
27
28 THE COMMISSIONER: Can I just while we are at it, sorry to
29 keep interrupting, just try and divide up my - help me with
30 my thinking. There is the extraction stage, and there is
31 the - after you have extracted it's then making sure you
32 don't lose DNA during the automated process that takes it
33 through to profiling, whatever else you are doing. I think
34 a lot of what we're talking about here is the extraction
35 stage, the concerns that come out of Project 13, aren't
36 they? The question was not that you were losing DNA after
37 you got it out of the lysis step and put it on to the
38 machine; but somehow, there was an issue about how much
39 extraction you were getting. And that's why I'm thinking
40 about the volumes and things like that, whether or not the
41 various - I think there's another - I'm just looking also
42 at Dr Hlinka. I think this was not the only increase in
43 volume in the procedure that was introduced. I'm not sure
44 about that. I haven't actually followed that through, but
45 I thought there was another increased volume somewhere as
46 well, and that just put into my head the idea of whether or
47 not, you know, you were diluting the DNA down too much.

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1 I was just wondering (a) was that thought about and (b) how
2 did you check for that?
3
4 MR NURTHEN: So broadly I guess answering your question,
5 the way I see the automated procedure is you have the first
6 step, which is the lysis, and that's getting the DNA out;
7 the second step, which I think is far more critical is
8 around the binding of the DNA to those beads and then the
9 release from those beads.
10
11 THE COMMISSIONER: That will all really form part of the
12 extraction process?
13
14 MR NURTHEN: Yes, but we think that - well, I think from
15 the experiments that we've seen, that's the critical part,
16 is that binding and the release. It works on an ionic
17 strength, the way the beads and the way the DNA will bind
18 to the beads. So I don't think we had any issue getting
19 the DNA out of any of the cells. I think the 37 degrees
20 and the TNE buffer worked fantastically. I think the issue
21 we were having was having it bound to the beads and getting
22 them back off the beads, hence the double elution being
23 required because some of that DNA was stuck to the beads.
24 Ideally, one elution should allow it to fully come off.
25 But it wasn't coming off.
26
27 MR FOX: Mr Nurthen, just earlier when you were giving an
28 answer, I think it was in answer to the Commissioner's
29 question about just in terms of the - she asked you about
30 the processes that were engaged in, and you said you had
31 looked into or I think you looked into that. When you use
32 phrases like that, is that just part of the testing, if you
33 like, of the process on a day-to-day basis as part of the
34 validation or verification process?
35
36 MR NURTHEN: Yes, I think it was part of developing that
37 method, so we looked at - we must have seen the results
38 and, at one elution, not been happy with it and gone back
39 and looked at it with an additional elution.
40
41 MR FOX: Everyone has heard, in terms of the experts, what
42 has been said so far about this third modification. Is
43 there anyone who wants to add anything further to what has
44 been said, whether by way of agreement or otherwise?
45
46 MS IENTILE: No.
47

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1 MR McNEVIN: No.
2
3 MR FOX: Thank you. Then we move to the final
4 modification which is in relation to the specific
5 consumable or plasticware, the hardware, that was used.
6 Mr Nurthen, you drew attention to this and also Dr Hlinka,
7 you drew attention to this hardware component. Perhaps
8 Dr Hlinka, if you just indicate as to how significant that
9 was, at all? It may not be that that was particularly
10 a big issue but I'm curious to understand.
11
12 DR HLINKA: Are you talking about the Nunc tube addition?
13
14 MR FOX: That's right, yes.
15
16 DR HLINKA: That was what was being used standardly at the
17 time for storage, at DNA IQ, and it made sense to put the
18 plasticware that we used already in forensics for storage
19 purposes - to put it on to the robot, just for convenience
20 reasons. It wasn't really significant.
21
22 MR FOX: Thank you. This is, just to be clear for those
23 witnesses who are here, present, it is the Nunc Bank-It
24 tubes that are being described at this particular moment.
25 Thank you. So are we in agreement that that wasn't
26 necessarily a particularly major change? That was what
27 Dr Hlinka just indicated then.
28
29 MR NURTHEN: No, I don't think for the Nuncs, but I think
30 you were referring in my statement to the Slicprep device?
31
32 MR FOX: Yes, I think you identified in your statement,
33 paragraphs 31 and 32, about the CFS protocol specifying
34 particular consumables. Would you like to just elaborate
35 on that then?
36
37 MR NURTHEN: Yes. So we wanted to incorporate the
38 Slicprep device, which was a 96-well spin basket, if you
39 will, rather than leave the substrates sitting in the
40 deepwell plate. It was essentially a brand new product
41 that this been available probably around about the time
42 that we had started the validation. It was so new that
43 there was no protocol or various other consumables already
44 built for that particular device already.
45
46 MR FOX: Is this the part where you have described that
47 you needed to cut the plate into a different shape or

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1 different size?
2
3 MR NURTHEN: The way the plate was designed, there are
4 plastic struts all around the plate, and that meant it
5 wouldn't sit on the heating block. So the heating block
6 had to be modified to allow the plate to actually sit in
7 the heating block. Otherwise, it wouldn't heat.
8
9 MR FOX: Right. Before we move on to the next aspect of
10 this, can I just ask, Mr McNevin, did you have any
11 involvement at any point in time in discussing with your
12 colleagues in the automation team about these types of
13 modifications that were being made?
14
15 MR McNEVIN: Yes, so I sat actually physically next to Tom
16 and guys like, you know, Vojtech and Iman, we all sat in a
17 very small desk area. So whilst my role was looking after
18 the day-to-day running of the analytical team, there
19 would - from time to time, we'd have some chats about
20 things or maybe I'd overhear a conversation and have a bit
21 of a chat.
22
23 I think most of my input into the extraction part of
24 it might have been when we had discussions around the
25 actual liquid handling settings on the instrument itself,
26 because I had been involved in some earlier validation with
27 the liquid handling instruments for (indistinct). So I had
28 been trained by PerkinElmer along with Vojtech and Tom, and
29 I can't remember who else, probably Iman, and so was aware
30 of how to do the programming on the instrument, how to
31 adjust those settings and that kind of thing, so - but I
32 remember having some of those conversations. I don't
33 remember a lot of detail.
34
35 The cutting of the heating tile was something that
36 I had completely forgotten about until I read someone's
37 statement and I went, "Oh, that's right. We did do that."
38 So there were things there that I might have, you know,
39 been involved in conversation about, but I was certainly
40 not, you know, the decision-maker and that sort of thing.
41 And it wasn't sort of my - really - it wasn't really my
42 role to get involved and tell Tom and his team how to do
43 their job either, you know, that was their role.
44
45 MR FOX: Ms Ientile, in terms of your more management role
46 at this time, having worked through each of these
47 modifications that you've just heard about, is it the case

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1 that you were consulted from time to time during the course
2 of that work in whether it be informally or were you kept
3 informed of these types of steps that were being taken by
4 the team?
5
6 MS IENTILE: I don't have any direct recollection of being
7 informed of detailed changes. I would have been given
8 progress updates on where the - all the projects were up
9 to, and perhaps in updates we had regular management team
10 meetings, in which senior scientists and team leaders
11 attended and there may have been updates which may have
12 discussed in detail some of those aspects and why some of
13 those things might have been adjusted at the time.
14
15 MR FOX: And that general description that Ms Ientile just
16 provided, and Mr Nurthen, is that something you would agree
17 with, with the way the lab was conducting between yourself
18 on the tools, so to speak, and management?
19
20 MR NURTHEN: Yes, we were given the discretion, if you
21 will, to develop the method and that didn't necessarily
22 mean reporting every change that we'd had made for every
23 part of the - every step of the way, basically.
24
25 MR FOX: Dr Hlinka, you've heard the exchange that just
26 happened then. Are you in agreement with what Mr Nurthen
27 has just said in terms of the way in which the team members
28 interacted with management at the time regarding these
29 modifications?
30
31 DR HLINKA: Yes, except that those modifications are also
32 listed in the final standard operating procedures, so that
33 other people who would have read those procedures would
34 have been aware of them as well. So although they weren't
35 directly communicated to management, it was documented in
36 the standard operating procedures.
37
38 MR FOX: Thank you. Ms Gallagher, I appreciate you had
39 a junior role at the time, but from what you have heard, do
40 you have anything to contribute to the discussion, and
41 I will ask the same question of Mr Muharam after
42 Ms Gallagher has finished. You might want to seamlessly
43 transition into giving your comments about that as well.
44
45 MS GALLAGHER: The comments that have been made so far are
46 within the best of my recollection and I'm in agreement
47 with what has been said.

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1
2 MR FOX: And Mr Muharam?
3
4 MR MUHARAM: Yes, I agree with that as well, that's as
5 best as I can recollect.
6
7 MR FOX: Thank you. Now, can we just then turn, before we
8 get ourselves into the activities around October 2007 --
9
10 THE COMMISSIONER: Can I just ask one more question,
11 sorry? We've heard or we've read about a number of small
12 or big changes that were made, you know, double elution,
13 change the temperature, there are a few others that - I'm
14 not going to get into the heating tile but, you know, there
15 were other extraction volumes - there was another
16 extraction volume somewhere, I've forgotten exactly where
17 it was.
18
19 Isn't it normal that when you do something, that, if
20 you really want to validate it, you change one variable at
21 a time and check for the consequences of that, and then you
22 change a second variable and check for the consequences of
23 that? Was that done here? Or did you then - because you
24 were looking at what you thought was an okay method in
25 another context, you know, that you had validated that in a
26 different context, whether it was a manual one or something
27 or you were looking at the CFS one, that you put it in, all
28 the changes, in one go?
29
30 MR NURTHEN: Sorry, can I just clarify that? From the
31 changes from the CFS protocol, we increased the volume of
32 buffer at the start, which the knock-on effect meant
33 additional lysis buffer had to be added. The temperature
34 remained the same and we changed the elution.
35
36 THE COMMISSIONER: So the big issue there was there were
37 two different steps that introduced increased volume?
38
39 MR NURTHEN: Yes. But I don't think we did them
40 concurrently. I think we would have done the first
41 protocol with the single elution, with just the volume
42 change made, and then, having assessed that, gone back and
43 then done the double elution.
44
45 THE COMMISSIONER: Is that recorded anywhere?
46
47 MR NURTHEN: I don't think so.

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THE COMMISSIONER: Because that is proper procedure, isn't it? I mean, I understand the temperature, you were doing a validated method from CFS, they had the temperature at 37 degrees; right?

MR NURTHEN: Yes.

THE COMMISSIONER: Yes. So what you did change, to bring in your manual method then, as you have just described, as I'm hearing it, is there were probably two different volume changes, one - they may have been consequential, where you had the double elution and then you had the other one that was a - and there was also something about covering the sample sufficiently in the well and you had to increase from 300 to 500 microlitres for that. I guess my question is: did you check for the consequences of each of those changes individually or did you take it that this was the method you were going to use and you put that method in with those modifications in one go to test it?

MR NURTHEN: No, I think my recollection was that we started with just increasing the volumes and putting the Slicprep in - this is for the automated protocol - and then seeing the yields out the other side with the single elution not giving us what we expected, then going and doing the additional elution step. I don't think we would have coupled them.

THE COMMISSIONER: So the double elution step was done after you had used a single elution but with the other increased volume already in there?

MR NURTHEN: Yes. Yes.

THE COMMISSIONER: Thank you. That's helpful. Is that your recollection, Dr Hlinka?

DR HLINKA: I can't honestly recall.

THE COMMISSIONER: Okay, don't worry. That's fine. If you don't recall, that's fine. I just want to make sure that I'm getting everyone who can recall what happened, that I'm getting that input. Does anyone else want to make a comment about that, about the way that was staged?

DR HLINKA: I did want to comment that that - having that

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double lysis volume was what was recommended by the Promega manual DNA IQ protocol. That was not --

THE COMMISSIONER: Yes, I understand.

DR HLINKA: It was not something that was made up.

THE COMMISSIONER: All right. So you didn't bring it from the air, it was recommended from the manual protocol, but it was still a modification to the CFS protocol; you were matching two different protocols together, each of which had been validated to your satisfaction, but you were combining them, in effect, and which meant that there were - there was, let's say, more than one modification to the CFS protocol, by reason of your importing the manual protocol; is that fair?

DR HLINKA: I believe so, yes.

MR NURTHEN: Sorry, can --

THE COMMISSIONER: Although I think, Mr Nurthen, you said no, it happened in two stages, because you tweaked the elution?

MR NURTHEN: Yes, so from what I recall --

THE COMMISSIONER: The concept is the same. You were taking a manual protocol that you had sufficiently validated, you had a validated CFS automated protocol and you wanted to put the validated manual protocol into the CFS protocol?

MR NURTHEN: No, I recall us doing both the manual and the automated concurrently. We didn't do one project and finish that and then move on to the next one. I think they were overlapping somewhat. The manual part was quite straightforward because we could just lift off that entire protocol, the CFS protocol, and then go ahead and do all those - all that other bit of work, and at the same time develop the automated one as well.

So I think, with respect to the two volumes of lysis, that exists both within both protocols, the CFS protocol and the Promega protocol. Because we increased that buffer from 300 to 500, the amount, those two volumes obviously greatly increased as well. So it appears like it is a big

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1 deviation from the CFS protocol, when, in actual fact, it's
2 just a scale-up of their protocol itself.
3
4 THE COMMISSIONER: Yes, but the scale-up increases the
5 dilution factor, doesn't it?
6
7 MR NURTHEN: No, because at the end - because that's the
8 first bit, getting bound on to the beads. Once the beads
9 are on there and it gets washed, you then control how much
10 is in the elution buffer.
11
12 THE COMMISSIONER: Right. So if I can clarify that, so
13 while you increased the volume initially of the lysis step,
14 your evidence is that that did not affect the concentration
15 later of the DNA because that gets it on to the beads?
16
17 MR NURTHEN: Correct.
18
19 THE COMMISSIONER: That elution amount goes, that - the
20 solvent, whatever you want to call it, goes - and you're
21 then eluting off the beads, it is a fresh start in terms of
22 volume --
23
24 MR NURTHEN: Correct, yes.
25
26 THE COMMISSIONER: -- you've got the DNA attached to the
27 beads, and then you use a double elution step off the
28 beads, and that's where you put in the double elution to
29 get the increased DNA, as I'm trying to summarise what
30 I have heard - you accept that that may have - obviously
31 that itself would decrease the concentration of DNA in the
32 sample, but your evidence earlier was, as I understand it,
33 that you felt that the increased DNA you got off was worth
34 it, even though you meant - even though you had to use an
35 increased volume.
36
37 MR NURTHEN: Yes. So for want of a better word, if you
38 had X amount of DNA but you could only get 50 per cent of
39 that DNA off, as opposed - and have it at a higher
40 concentration, as opposed to getting 100 per cent of the
41 DNA off at a lower concentration --
42
43 THE COMMISSIONER: So it was a trade-off.
44
45 MR NURTHEN: It was a trade-off, yes.
46
47 THE COMMISSIONER: It was a trade-off that you evaluated

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1 at the time.
2
3 MR NURTHEN: As I recall, yes.
4
5 THE COMMISSIONER: Dr Hlinka, or anybody else, does
6 anybody want to add anything to that or agree or disagree?
7
8 DR HLINKA: I agree with it, yes.
9
10 THE COMMISSIONER: All right. Thanks, Mr Fox.
11
12 MR FOX: This is still in the same territory that the
13 Commissioner has been asking about. We're now in the
14 territory of validations, and I would like you to describe
15 what steps you took to satisfy yourselves that you were
16 engaging in a rigorous validation process?
17
18 MR NURTHEN: So the manual part is really challenging the
19 chemistry itself, the kit itself, as to how well it's
20 performing under a whole lot of different scenarios. And
21 then the step up to the automated platform was then
22 assuming that it's performing well under all of those
23 conditions, when we move to the automated, we would
24 likewise get similar results, hence the comparison between
25 the automated and the manual.
26
27 MR FOX: And Dr Hlinka, do you have anything to add about
28 that?
29
30 DR HLINKA: No.
31
32 MR FOX: And focusing on steps towards properly validating
33 in a scientific way, what these changes were that were
34 being made?
35
36 DR HLINKA: I think that that was correct, what he said.
37 I don't have any additional --
38
39 MR FOX: You don't have any further comments?
40
41 DR HLINKA: No.
42
43 MR FOX: Ms Ientile, from your perspective, were you
44 seeking to make sure that what changes were made were
45 validated in a scientific way?
46
47 MS IENTILE: I believed that the project team was working

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1 in that manner, yes.
2
3 MR FOX: When you say you "believed", what did you - in a
4 position of management - do to satisfy yourself that that
5 was so?
6
7 MS IENTILE: I would have had regular updates and I think
8 regular updates with Tom that updated the steps that they
9 were doing throughout the process, updates on what they had
10 found at the time and then the next steps they were taking
11 based on those decisions, is my recollection.
12
13 MR FOX: Mr Nurthen, is there data that's gathered in a
14 systematic way that you were looking at and that was then
15 guiding you when changes were made? Was that sort of
16 process being adopted as well?
17
18 MR NURTHEN: My recollection is that we actually
19 started to - well, we planned how we would validate or how
20 we would actually test the system through consulting
21 articles on - you know, that were available, but also
22 talking to the other laboratories that already had
23 experience.
24
25 So Western Australia and South Australia had had
26 experience with both the same systems. We talked to both
27 of them around their approach to validating their
28 particular chemistry or their kit on the MultiPROBE, and
29 I think after reviewing all of that, we had come up with
30 a plan to say, "We will test this; we will test the ability
31 for inhibitors to" - well, whether DNA IQ could actually
32 remove inhibitors, we would test to see if the different
33 size of the substrates would affect the outcome at the end.
34 All of those steps were part of that initial plan, that
35 rigorous testing to ensure that what we got out the other
36 end was suitable.
37
38 MR FOX: Moving along the way there, did anyone want to
39 add anything?
40
41 MS IENTILE: Yes, in preparation for this, reviewing
42 documents that have been made available to me, it does
43 appear that that automation whole project that you referred
44 to before was all of these steps, and that was planned out,
45 and they were part of a users group that had detailed
46 discussions as to what each of those aspects meant.
47

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1 MR FOX: Ms Gallagher, you have heard what has been said
2 about the process of validation. I appreciate, again, your
3 position, but is there anything you wanted to add from the
4 perspective of a junior scientist so much as you can recall
5 back then?
6
7 MS GALLAGHER: I do recall participating in work that went
8 ahead to create the samples that Tom was talking about in
9 terms of different substrates, us having conversations
10 about the types of materials that we were likely to receive
11 within the laboratory at the time, and to create those sort
12 of mock samples to be run through the automated method that
13 was being created, and while I don't recall the specifics
14 of conversations, I do recall us, as a team, reaching out
15 to the other laboratories that had other automated
16 platforms and having conversations with them about how they
17 went about validating the procedures within their own
18 laboratories.
19
20 MR FOX: So you satisfied yourself, through what you have
21 just described then, that what you were doing in the
22 laboratory and what your colleagues were doing appeared to
23 you to be best practice?
24
25 MS GALLAGHER: Yes.
26
27 MR FOX: Mr Muharam, do you want to add anything to what
28 you have heard so far, obviously going back to your
29 perspective in the lab as part of the automation team at
30 that time?
31
32 MR MUHARAM: Sure, I don't have anything significant to
33 add, actually. I agree with everything that has been said.
34 We did, as I think Mr Nurthen mentioned earlier, consult
35 with the wider community, we investigated a lot of
36 different papers, publications, we received - we were able
37 to contact other labs that were, you know, using the
38 chemistry and the technology at the time, and therefore
39 formulated our own plan based on all of that.
40
41 But also, the existing standards and guidelines that
42 were applicable at the time, we made sure that, you know,
43 we were, I guess, trying to do what we thought at the time
44 was best practice. But, of course, these things evolve
45 over time, but definitely I think in terms of what we were
46 trying to achieve during that period, we did the best that
47 we could and we believe that we've ticked all the boxes.

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1
2 MR FOX: Dr Hlinka, do you want to add anything to what
3 you have heard your colleagues say in the last few minutes?
4
5 DR HLINKA: Yes, we also had support from PerkinElmer
6 through Desley Pitcher and those colleagues regarding the
7 setting up and doing things on the robots. So that was
8 a great help when we were doing the validation as well.
9
10 MR FOX: That's the manufacturer of the device, is that
11 right, the MultiPROBE device?
12
13 DR HLINKA: The manufacturer of the MultiPROBE device;
14 that's correct. They supplied us with the protocols and so
15 on, from CFS.
16
17 MR FOX: Thank you. We'll come a little more to the
18 automation process in a second. You otherwise don't have
19 anything else you wanted to add in relation to what you
20 have heard?
21
22 DR HLINKA: No.
23
24 MR FOX: Thank you.
25
26 MR McNEVIN: Can I just add a little bit? As I mentioned
27 earlier, I sat adjacent to these guys and so they would
28 regularly have meetings where I could overhear them
29 planning stuff out. I mean, I wasn't involved in the
30 conversation direct but I can confirm that it wasn't just
31 done, you know, ad hoc; that they were certainly like
32 "Okay, we're going to do this next, you do this, you do
33 that", I can't remember a lot of the detail but I remember
34 those meetings occurring.
35
36 MR FOX: Those are conversations, I think you indicated
37 you sat directly next to them and so --
38
39 MR McNEVIN: Yes, so I could hear that they were having
40 those conversations but obviously I don't recall the
41 details.
42
43 MR FOX: Can I then take you to a topic of the
44 automation - that is, in October 2007. We have what I've
45 described as the modified DNA IQ protocol and it's now
46 being used in conjunction with the MultiPROBE device,
47 otherwise known as the robot - I'm endeavouring to speed

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1 matters up. Now, Mr Nurthen, you have started to talk
2 about this notion of the automated DNA IQ protocols in your
3 main statement, starting at around paragraph 57. Would you
4 just like to explain in your own terms what you mean by
5 that, in terms of that process - that is, the development
6 of the automated DNA IQ protocol?
7
8 MR NURTHEN: Like I said, we based it on the CFS protocol
9 and the idea was to do a manual part of that to say, "Here
10 is that protocol, but if we do it manually, yes, we get
11 good results, test it out really thoroughly", and also we
12 had a benefit being if the robots go down for any
13 particular reason we had a back-up method, a manual method,
14 to be able to extract from with DNA IQ, although not
15 ideally.
16
17 Then the second step should have been move it on to
18 the platform, because when it was done manually, whilst
19 we're trying to align temperatures, volumes, all that kind
20 of stuff to be the same, the reality was the plasticware
21 and the hardware was different in the manual method from
22 the automated method, if that makes sense. So when we were
23 talking about developing it, we were hoping to pick up that
24 method and basically start to use it, but we needed to make
25 changes to that method to incorporate the Slicprep device.
26
27 MR FOX: Does anyone want to make any comment about what
28 Mr Nurthen has just said then just by way of a general
29 introduction? Everyone's comfortable with what he said
30 there?
31
32 MS GALLAGHER: Yes.
33
34 MR MUHARAM: Yes.
35
36 MR FOX: Thank you. When the automated method started to
37 be used, you indicated in your statement, Mr Nurthen - this
38 is at paragraph 89 - that you noticed that there were low
39 yield results that were being achieved. I'd just like you
40 to indicate, when you started to notice this, how it came
41 about and what raised that as a matter of concern in your
42 mind that it was something that needed to be looked at.
43
44 MR NURTHEN: I think it was something that throughout the
45 whole optimisation of that program we were obviously aware
46 of the results as we stepped through them, and that was
47 obviously in the forefront of our minds as to how do we

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1 ensure the yields are the same as the manual? As I said,
2 one of those bits would have been looking at the different
3 volumes, I guess, involved.
4
5 Part of when we talk about modifications - and this is
6 where it tends to get a little bit more technical - on the
7 actual robot itself, the way the robot pipettes is
8 different to the way you would manually pipette. So that
9 involves a number - like, quite a few number of steps that
10 are programmed within the robot that would affect the
11 outcome at the other side, and that's where a lot of that
12 time was spent in optimising things like the dispense
13 heights, how things were mixed, how it was shaken on the
14 robot, and as we were doing that there was no, I guess - we
15 were always cognisant of what was coming out the other end
16 and trying to revise it and make it better, if you will.
17
18 It wasn't that we got to the end and went, all of
19 a sudden, "Oh, the yields were down", it was an ongoing
20 thing. As you do those experiments you become aware the
21 yields aren't giving what you need. So what do we do? We
22 try a different mixing technique because we talked to
23 PerkinElmer and they said, well, perhaps the beads were
24 settling out, so you needed to change the way that
25 parameter worked.
26
27 THE COMMISSIONER: Can you explain something to me,
28 because I think I picked up something in Dr Hlinka's
29 statement about potential for clumping. So I'm trying to
30 work out where the pipettes are going in. I'm assuming we
31 are talking automatic pipettes, even manually, you are not
32 talking about pipetting by mouth, which is something that I
33 think is long gone from my day. So when you get it off the
34 beads - I mean, I think there's a reference to clumping
35 that may have occurred.
36
37 Now, I'm trying to understand, what was being pipetted
38 off, out of what? So if it was a purely clear - if it had
39 been taken off the beads completely clearly and dissolved,
40 why would there be clumping? And I mean, I understand that
41 a machine - picking up what you are saying, a machine just
42 goes like that (indicating) whereas a person can see that
43 there is something at the bottom and maybe tilt the tube
44 before they take something out. So can you give me a bit
45 of an understanding of what it looks like when it comes off
46 the beads?
47

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1 MR NURTHEN: Sure.
2
3 THE COMMISSIONER: Is it crystal clear?
4
5 MR NURTHEN: I'll just take you back a step. The clumping
6 I think refers to the resin itself, so the paramagnetic
7 beads come in a little bottle, quite densely packed, and
8 you have to mix that with a certain amount of lysis buffer
9 to bring it back into solution, and that was a very
10 difficult thing to do, that once you put it on to the deck
11 of the robot, they would tend to settle out back to the
12 bottom of the container.
13
14 THE COMMISSIONER: So the beads - the beads were still
15 there?
16
17 MR NURTHEN: This is before the beads have been added to
18 the sample.
19
20 THE COMMISSIONER: Right.
21
22 MR NURTHEN: So you put it on the deck, it's sitting on
23 the deck in a container. The robot then had to mix that
24 first to get a homogeneous mixture.
25
26 THE COMMISSIONER: This is the lysate?
27
28 MR NURTHEN: No, the beads before it goes into the lysate.
29 So if I step through the broad strokes for the extraction,
30 lysis, extract - you know, basically, here's the substrate,
31 put the lysis buffer on it, after a period of time, take
32 the substrate out, spin it down, get all the lysate, so all
33 you've got left is liquid. You then add the beads to that
34 lysate, let the beads - let the DNA bind to the beads and
35 then you add it to a magnet and then the magnet then pulls
36 the beads to the side with a bound DNA. You then pipette
37 out all the lysate, wash it and then elute from it.
38
39 THE COMMISSIONER: Elute from the beads?
40
41 MR NURTHEN: Elute from the beads. So that step we're
42 talking about, the clumping, would have been around the
43 beads themselves being pipetted into that lysate. It is
44 a very difficult thing to do for a robot, very easy for
45 a person to do, because, like you said, you can sit there,
46 vortex it so you get a homogeneous mixture in between every
47 step, but when you are doing it with a robot it had to mix

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1 it itself.
2
3 THE COMMISSIONER: But surely that would have been part of
4 the design of the automated system itself, and the - that
5 would have been part of the validation of the fact that
6 that worked, the mixing was sufficient as part of the CFS
7 validation, wouldn't it?
8
9 MR NURTHEN: It would be, but even though it's out of the
10 box, it doesn't come out of the box perfect, if that makes
11 sense. And that was our experience with the other
12 laboratories too, that when they tried out those methods,
13 they had to make modifications themselves in order to get
14 it to work to the level that they were happy with.
15
16 THE COMMISSIONER: Was their problem also at that mixing
17 stage? Did they also have problems at that mixing stage?
18
19 MR NURTHEN: I don't know, but I know that that's one that
20 we had to talk to PerkinElmer about around the beads
21 settling out.
22
23 THE COMMISSIONER: Dr Hlinka, is that what you're talking
24 about with the clumping that you refer to?
25
26 DR HLINKA: That's partially it, but there might have also
27 been clumping in the samples when they were prepared and
28 stored. I'm not really certain about that.
29
30 THE COMMISSIONER: I'm sorry, I shouldn't be asking you
31 out of nowhere. In your statement at page 25, you refer to
32 the fact that both manual and automated methods gave
33 sufficient quality DNA profiles although yield and
34 sensitivity appeared significantly lower for the automated
35 method. My interpretation is this could have been
36 potentially partly attributed to sample clumping during
37 preparation. So that's a different clumping?
38
39 MR NURTHEN: That's different. That's putting the cells
40 on the substrate to start with.
41
42 DR HLINKA: Yes, that's correct.
43
44 THE COMMISSIONER: So that's what you were referring to
45 there, the cell stage?
46
47 DR HLINKA: That's the sample preparation.

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1
2 THE COMMISSIONER: And is that also something that - where
3 does the automated - the automation problem work there
4 badly? I mean, we've got the other clumping because you
5 say the machine didn't do it sufficiently with the beads,
6 what was the problem of clumping in an automated system?
7 At what stage was that a problem that you didn't get
8 manually?
9
10 MR NURTHEN: So we're talking about the preparation of the
11 samples?
12
13 THE COMMISSIONER: It says, "sample clumping during
14 preparation and dilution".
15
16 MR NURTHEN: I think that was around the consistency of
17 preparing the samples, that when you tried to take a buccal
18 cell suspension and you tried to make dilutions and pipette
19 them out, getting reliable, consistent dilutions across all
20 of your substrates, all of those replicates, was difficult
21 because of clumping of the cells. So if the cells were
22 homogeneous --
23
24 THE COMMISSIONER: So manually you would spin it or do
25 something to break it up into suspension, at least, but if
26 you waited too long it settled out?
27
28 MR NURTHEN: The cells - if we're talking about the cells
29 now, we're talking about when you initially collect the
30 cells from inside of the cheek, the cells tended to clump
31 to each other. So if you then pipetted that on to 10
32 different swabs, you know, five of them might have 10
33 nanograms of DNA and five of them might have 2 nanograms of
34 DNA. That was around the inconsistency of knowing what you
35 are providing is going to get back out the other end.
36
37 THE COMMISSIONER: And what part of that was manual and
38 what part of that was ultimately automated or during this
39 Project 13 system, that dealt with that issue?
40
41 MR NURTHEN: It wasn't an issue to deal with; it was more
42 around the samples that we were then challenging the robot
43 with, about giving it adequate samples to go, "That's the
44 same, that's the same, that's the same", so that then when
45 you looked at the variants, you were seeing that the
46 variation was due to the robot, not the sample preparation.
47

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1 DR HLINKA: Yes.
2
3 MS IENTILE: Can I ask a question or clarify? I believe
4 what Mr Nurthen is talking about is the preparation of the
5 mock samples to then test the processes on that - that's
6 what you're referring to?
7
8 MR NURTHEN: That's correct, yes.
9
10 MR McNEVIN: Do I recall correctly, Tom, that we observed
11 that when we were doing some cell counting to try and
12 determine how many cells were going into the sample?
13
14 MR NURTHEN: Yes.
15
16 MR McNEVIN: So we could observe then under the microscope
17 the cells, you know, getting inconsistent counts because in
18 some samples there was - all the cells were clumped
19 together, and sometimes they weren't. So we knew that when
20 we were then transferring that, when we make up our
21 samples, we knew we were not able to get necessarily very
22 consistent samples like you would, say, out of pipetting
23 some blood or something like that.
24
25 THE COMMISSIONER: I'm going to come to Dr Hlinka in a
26 second because he raised it - what steps does one take to
27 overcome that problem?
28
29 DR HLINKA: Are you asking me now?
30
31 THE COMMISSIONER: Yes. I'm asking you now.
32
33 DR HLINKA: We obviously tried to vortex the samples to
34 distribute them, we tried to vortex to try and homogenise
35 the sample as much as possible, so that means to get an
36 even concentration in your sample as much as possible, by
37 vortexing.
38
39 THE COMMISSIONER: So if you automate - what do you do if
40 you are going to automate that?
41
42 DR HLINKA: We didn't automate the sampling procedure of
43 the mock samples I don't believe.
44
45 THE COMMISSIONER: I see. So that was always done
46 manually?
47

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DR HLINKA: That was always done manually.

THE COMMISSIONER: Sorry, can I ask you to go to page 25 of your statement. I'm just trying to understand it.

DR HLINKA: Mmm.

THE COMMISSIONER: About halfway down, you say, and I just read it out before, you have got it there:

> *Both manual and automated methods gave sufficient quality DNA profiles, although yield and sensitivity appeared significantly lower for the Automated ... method. My interpretation was that this could have been potentially partly attributed to sample "clumping" during preparation and dilutions of some of the samples as described in ... Project 13 ...*

So I'm trying to work out where that clumping, if it was always done manually with the sample - how that was something - oh, thank you. Thank you for that - how that changed in the automated system or how that could have been responsible for a decreased yield in Project 13, if, in fact, that was something you were always doing, and it was a manual procedure, and you just made sure you vortexed sufficiently to create a homogeneous suspension?

MR NURTHEN: I think that is regards to going if we have made up 10 samples and five of them are used for the manual and five of them are used for the automated, that there was possibly discrepancies in those samples being made up, that they actually had different amounts of DNA on it, and that might be one of the reasons that we weren't getting the same results.

DR HLINKA: Yes.

MR NURTHEN: That's where I think that line comes in. That if you made up the sample and there are supposed to be 100 cells on every one of those samples but some of them have 150 and some of them only have 70, when you extracted them, you're going to get different quantities of DNA.

THE COMMISSIONER: But that's a problem all the time.

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1 MR NURTHEN: Yes.
2
3 THE COMMISSIONER: That's not just in testing an automated
4 procedure, I mean, that's just random luck.
5
6 MR NURTHEN: Yes.
7
8 DR HLINKA: Yes.
9
10 MR NURTHEN: But I think we raised it as a potential
11 reason as to why we saw differences between the two.
12
13 THE COMMISSIONER: Are you comfortable with that,
14 Dr Hlinka?
15
16 DR HLINKA: Yes, that's true.
17
18 THE COMMISSIONER: I'm good to keep going, happily, but
19 I just wondered if the witnesses wanted a 10-minute break?
20 Up to you.
21
22 MR FOX: Can I just ask --
23
24 THE COMMISSIONER: Is everyone comfortable to keep going?
25
26 MR NURTHEN: I'm fine.
27
28 DR HLINKA: Yes.
29
30 THE COMMISSIONER: Are you okay, Dr Hlinka?
31
32 DR HLINKA: I'm okay but I don't know if Zoom has a time
33 limit on it. Someone told me it's limited to 45 minutes.
34
35 THE COMMISSIONER: Did the Commission send you a Zoom
36 invitation?
37
38 DR HLINKA: Yes, indeed.
39
40 THE COMMISSIONER: Can somebody check whether that is
41 going to have a time expiry. No, there is no time limit,
42 I'm told. No. No. That's good, the Zoom hasn't got
43 a time limit. We can keep you here 24 hours, Dr Hlinka.
44 It's fine.
45
46 MR FOX: I just want to ask one question before the break,
47 if I could. We will come back to this topic, but I think

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1 Mr Nurthen, if it's convenient --
2
3 THE COMMISSIONER: I'm not trying to stop you.
4
5 MR FOX: No, I'm quite happy to stop and give the -
6 I think the indication is that they would gratefully
7 appreciate a 10-minute break. So, sorry to do this, but
8 one further question. Just while we are on a roll I think
9 it would be helpful rather than losing momentum. That
10 description you described, probably about 10 minutes or so
11 ago, you were going through the steps in the process of DNA
12 extraction. When we hear the phrase "off-deck lysis"
13 amongst the automation process, would you as a - I think it
14 is good to do it now because we're going to come back to it
15 as a topic. What does that mean in terms of the process
16 that you have described, which bits?
17
18 MR NURTHEN: That refers to the first part of the process,
19 that breaking open the cells, because in the first
20 iteration of the automated method, we did as much as we
21 could on the robot, which meant the lysis part sat in the
22 Slicprep on the deck of the robot. Off-deck lysis was done
23 not on the robot. So that lysis step was done in little
24 tubes, separately, on a completely different
25 instrumentation off the robot. So that --
26
27 THE COMMISSIONER: Was that manual or not manual?
28
29 MR NURTHEN: No, it's off-deck lysis, because the critical
30 component, which is the binding of the DNA to the magnetic
31 beads, occurred on the robot.
32
33 MR FOX: Was the use of this off-deck lysis approach, in
34 other words, having manual exercise separately, was that
35 because you had a greater - and I say "you" as a team had
36 a greater confidence that that would be done better by
37 humans than by the machine?
38
39 MR NURTHEN: I don't recall that aspect but I know we
40 certainly had to create a method for retaining supernatant.
41 I think it can be safely said that being off the deck of
42 the robot we would get better results because it's closer
43 to the manual; that using individual tubes was always going
44 to give you better results than using a larger deepwell
45 plate on the deck of the instrument, you're going to get
46 better thermal transfer with individual tubes than in a
47 plate.

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1
2 THE COMMISSIONER: So off-deck lysis was still automated
3 but it was a single-tube preparation rather than 70 or
4 whatever it is?
5
6 MR NURTHEN: Correct, and then you put that lysis in those
7 tubes on the deck, which then would pipette it into
8 a deepwell plate to then do the binding of the DNA to the
9 resin. And the rest of it was automated.
10
11 MR McNEVIN: So that initial lysis step was done manually,
12 then you take that lysate, put that on the instrument, then
13 that becomes your automated method.
14
15 MR FOX: We will come back to this later.
16
17 THE COMMISSIONER: I thought that Mr Nurthen had said that
18 was also automated. I thought it was manual but I thought
19 you said it was also automated.
20
21 MR NURTHEN: Think of it part and part. So the overall
22 method, the on-deck lysis, method, was fully automated.
23 The off-deck lysis was part and part. The first step was
24 done off the robot manually, the second step was done on
25 the robot.
26
27 THE COMMISSIONER: Okay. Sorry, Mr Fox.
28
29 MR FOX: No, it's about whether there was any reason for
30 doing it in that way, that there was something that was
31 recognised about the lysis step that it was preferable to
32 do it manually before leading to the other automated steps.
33 Anything around that, did you have any awareness of or
34 concerns about, that led to this notion of having an
35 off-deck lysis?
36
37 MR NURTHEN: As I recall, the Slicprep device was
38 incredibly difficult to use. In order to prepare it, we
39 had to - because it's a 96-well plate, we had to get every
40 substrate pushed down into it, and it was quite a laborious
41 process that involved another instrument to sit there and
42 with tweezers push it down into the deepwell plate, make
43 sure you haven't contaminated on the outside, whereas if it
44 was already in the tube, it was much easier and much
45 quicker to process. So that's my recollection around the
46 Slicprep device and the preparation of the Slicprep device,
47 it was just too time consuming, it was too risky for

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1 contamination, completely remove the Slicprep and do it
2 manually, which wasn't what we wanted to do initially, we
3 wanted to put everything on the robot, walk away and then
4 come back, but that's not what worked, basically.
5
6 MR McNEVIN: I can recall my staff not being enthusiastic
7 about the Slicprep device. It was too difficult, it was,
8 you know, fiddly. I can't remember the exact details, it
9 was quite some time ago, but I do remember them not liking
10 using it and so I can't remember whether that was a major
11 or a minor factor into us changing to off-deck lysis but
12 I do remember that particularly, when Tom was talking about
13 pushing the samples down, I sort of recall them finding
14 that process difficult.
15
16 MR FOX: You're not disagreeing with what Mr Nurthen has
17 said?
18
19 MR McNEVIN: No, no, I'm just saying a remember there
20 being an element of it being difficult to use. I just
21 don't know whether that was a major or a minor factor.
22
23 MR FOX: Has anyone anything else they want to contribute
24 to that? Dr Hlinka?
25
26 DR HLINKA: No, that sounds correct.
27
28 THE COMMISSIONER: Ms Gallagher, Mr Muharam, anything to
29 contribute so far? No? Thank you. Ms Ientile, you're the
30 last one.
31
32 MS IENTILE: No, I agree with what was said, but also in
33 reviewing the documents, I think the other - and it was
34 mentioned that the other aspect was to retain a little bit
35 of supernatant so that other presumptive tests could be
36 done in another area of the lab.
37
38 MR FOX: Thank you. That's a convenient time?
39
40 THE COMMISSIONER: Do I take it that people do want
41 a 10-minute break? Okay. Now, just one procedural thing,
42 if you can find a place that will do coffee in 10 minutes,
43 please don't feel - you can bring it back and bring it with
44 you. You don't have to find it and drink it. I'm very
45 happy for anyone, including counsel, to have a cup of
46 coffee on the table, if you want to have one, or a cup of
47 tea or something, but in view of the timing, I would just

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1 prefer to leave it about 10 minutes. That's all I'm
2 saying. Is everyone comfortable with that? All right. We
3 will adjourn.
4
5 **SHORT ADJOURNMENT**
6
7 THE COMMISSIONER: Thank you, Mr Fox.
8
9 MR FOX: Commissioner, are we going to sit Supreme Court
10 hours or Federal Court hours?
11
12 THE COMMISSIONER: I thought, seeing we have had a
13 10-minute break, that we would sit Supreme Court hours.
14 What we can do is sit until 1 o'clock and then work out how
15 we are going and decide whether we have an hour or an hour
16 and a quarter for lunch. But of course I do plan, if we're
17 close - I'm not going to break and have the witnesses all
18 have to return tomorrow. If it gets to 4 o'clock, I'm
19 quite happy to keep sitting until we finish.
20
21 MR FOX: Yes.
22
23 THE COMMISSIONER: Unless it's huge and it's going to be
24 a really prolonged one, in which case we will make that
25 decision. It doesn't mean we will necessarily stop on the
26 dot of 4. I assume they are the same hours in Queensland
27 as they are in New South Wales.
28
29 MR FOX: Yes. Mainly for the benefit of those witnesses
30 today, just to have an understanding of where the goalposts
31 are.
32
33 THE COMMISSIONER: My intention is that - it is now
34 basically 12 o'clock so we will keep going until 1, we will
35 probably take an hour's break, then we will come back, and
36 go hopefully until it is finished. If we finish before, we
37 finish after, we will just see how we go. I would very
38 much prefer to finish it today.
39
40 MR FOX: I think we are tracking well at the moment.
41
42 THE COMMISSIONER: I don't know if I can have - does
43 anyone so far envisage any lengthy evidence to be called
44 from anybody else, from other counsel representing the
45 witnesses so far? I'm not closing you down. I want to get
46 an indication of whether you think you will have any
47 questions, prolonged evidence questions you need to bring

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in.

MR RICE: Not long, if any, Commissioner. .

THE COMMISSIONER: That's a good indication. You are not bound by it.

MR FOX: Professor Wilson-Wilde has given a statement in this proceeding and I don't know whether you have had an opportunity to read it but I just want to provide a comment that she makes about automation in her report or statement, and just to read it to you and to gauge your reaction to it:

> *In Project 13 the analysis compared the fully automated DNA IQ method to the manual method verified in Project 11.*

This is paragraphs 89 to 94, and it is not in the tender bundle, I'm afraid:

> *The change of a DNA extraction method from manual to fully automated is significant. Most laboratories in Australia run a part automated method, where the lysis step is conducted manually, and the DNA capture washing and elution is completed on a robotic platform; this was the case in 2007 when Project 13 was implemented.*
>
> *In my experience, it may be expected that there could be a reduction in the amount of DNA recovered from samples using a robotic platform, when compared to a manual platform, although this reduction is highly dependent on a particular method.*
>
> *For instance, an automated process may have difficulty in getting similar amounts of DNA when compared to a manual method, because a human can perform functions such as mix a sample longer, tip a tube so that the tip can more easily reach the bottom of a tube to remove all of the sample, etc.*
>
> *This is particularly the case during the lysis step.*

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1
2 *It can be difficult to automate the lysis*
3 *step and obtain an equivalent DNA yield to*
4 *the manual version of the method. This is*
5 *because swabs or other bulky material are*
6 *more difficult for robotic platforms to*
7 *deal with. It follows that I expected*
8 *there to be a reduction in yield where the*
9 *lysis step was automated.*
10
11 So the proposition I want to get your response to is what
12 she indicates about the difficulty of automating the lysis
13 step and the consequence being that you inevitably, on her
14 view, would get a lower DNA yield. Dr Hlinka, would you
15 like to start by providing your response to what you have
16 heard me read out, whether you agree with that proposition
17 that is being put?
18
19 DR HLINKA: I can see what concerns she would have in
20 writing that. I don't really know - I'm sorry, I don't
21 know how to respond.
22
23 MR FOX: That's all right. We'll ask some of your
24 colleagues while you have a chance to reflect on it, and
25 I will come back and ask you in a minute.
26
27 Mr Nurthen, would you like to start by providing your
28 comments in response to those observations that the
29 professor made?
30
31 MR NURTHEN: Yes, I think that's fair comment. It is
32 technically more difficult, when you are starting to work
33 with different plasticware, the thermal dynamics with
34 a plate compared to a sample are much different. I think
35 the introduction of the Slicprep was supposed to somewhat
36 address that, because we were going to have this substrate
37 removed from the deepwell plate, whereas the original
38 methods, if the substrate is sitting in the plate, you can
39 get clump - well, not clumping, you can get clogging of the
40 tip because the pipette would then get stuck on the
41 substrate. So I can see how that would obviously then
42 lower your potential yield.
43
44 I think we tried to address that somewhat by putting
45 in the Slicprep, where it was incubated and then you
46 removed the substrate and then, hopefully, that thermal
47 capacity of the plate is better than what it was before, if

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1 that makes sense. But you will not beat manual because of
2 the - basically, the difference in plasticware.
3
4 MR FOX: In responding to the proposition, what you have
5 done is to agree with it and then say, "Okay, there are
6 some things that we did to kind of deal with that
7 proposition."
8
9 Mr McNevin, did you want to make any comment about
10 that, what Mr Nurthen has said?
11
12 MR McNEVIN: Yes. I think if you were to look at certain
13 sample types, you know, maybe that you could work around
14 with a single protocol that, you know, ameliorated some of
15 the difficulties associated with using an automated
16 platform, you know, you could potentially set up your
17 platforms in such a way as to suit a very specific sample
18 type. Hat's not what we were trying to do at the time. We
19 were trying to use - get all our samples on rather than
20 having, you know, "Oh, well, I'll go and do a bunch of
21 these samples and a bunch of those samples" and have
22 different protocols to suit all those.
23
24 So I think as a sort of general principle, yes,
25 they're some of the difficulties you are going to be faced
26 with when developing an automated - fully automated system.
27
28 MR FOX: Were they difficulties, in your mind, that were
29 insurmountable? In other words, you were never really
30 going to overcome them?
31
32 MR NURTHEN: I didn't think so, because when we tendered
33 for the instruments, we tendered for a walk-away method, as
34 part of the tender, that you could put the samples on, walk
35 away, come back, which meant we were trying to automate as
36 much of that as possible. You know, in retrospect, I can
37 see that is a really good idea, but in practice, just
38 doesn't work as well, because of all of those things, with
39 regard to plasticware and thermal and all of that stuff.
40 So I think we approached the project as, "Everything's
41 on-deck lysis", which is what that first iteration was, and
42 then when it became procedurally difficult, with, like, the
43 Slicprep, we then stepped back and went, "No, we're going
44 to need to go to off-deck lysis, we have to actually give
45 up something. We can't process the whole lot on the robot
46 as well."
47

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MR McNEVIN: I think the idea that the Slicprep plate was going to solve all those problems sounded good in theory, but I never actually hopped on the tools myself to see that in practice it wasn't quite so good. But, yes, the fact that we ended up with an off-deck lysis, I guess indicates that a fully automated system just wasn't the bees knees that we thought it would be.

MR FOX: That's a comment with the benefit of hindsight as opposed to what was being experienced at the time>.

MR McNEVIN: Definitely a comment with the benefit of hindsight. I can't remember what I was thinking 18 years ago. There was a lot - so many projects have been through that laboratory in the last, you know, X number of years. To be honest, a lot of my thoughts also meld into one about my memories of that specific time. So yes, that's me thinking about it today.

MR NURTHEN: I think because Western Australia had managed to incorporate a protocol where it was done on the deck, that meant it could be done, and CFS had done it, which meant it could be done. We were now trying to get it to work for us, but with the Slicprep.

MR FOX: Ms Ientile, I haven't addressed you just yet but I will in the moment but I want you to hear the next question because you may be able to wrap them all up. You have heard the major questions and you can then feel free to respond globally. And the same goes for those of you who are listening online.

What I want to put to you is this: the proposition that at the time you are looking at automation and there's a recognition that at least with the lysis step, that might be one that is better done manually, it's a safer outcome, that you had sufficient information about full automation that it was never going to work?

I want to put that proposition to you, because there are suggestions that have been made - we're obviously here to respond to matters that have been put in the media, but there is a suggestion that is put that the laboratory - that is, those who were working in the laboratory at the time on the automation project - must have been sufficiently cognisant of difficulties with automation as a whole that persisting with it was irresponsible. Would

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1 you like to comment? I do wish for each of you to respond
2 to that, because it is an important and a very serious
3 allegation that has been put and I would like each of you
4 to respond to it. Who would like to go first?
5
6 MR NURTHEN: I think we persisted with the robotics
7 because after investigating the amount of money that we had
8 invested in the robots and the benefits from it, and we
9 could see that it had been implemented in, you know,
10 Western Australia, it could be done, we tried our best to
11 try to get that protocol working, with as much on the deck
12 as possible, and like I said, in retrospect and in
13 hindsight, you can look and go, "Well, when you start
14 carving away aspects of that protocol, it becomes more and
15 more manual", we know the manual method was fantastic but
16 it was also a very, very long method, something like four
17 hours to do between 12 to 24 samples. And that just wasn't
18 going to be practical. It was also quite labour intensive
19 as well, there was lots of pipetting steps. So persisting
20 with the robots was part of trying to get an efficient
21 workflow that was useable.
22
23 MS IENTILE: In answering, I would like to provide some
24 context from the laboratory at the time. When this method
25 was introduced, our extraction method was Chelex. It
26 wasn't DNA IQ manually. It was the Chelex method and the
27 goal of the project was to automate as much of the
28 analytical section as possible.
29
30 We knew that Chelex was unable to clean up samples, so
31 we knew that DNA IQ provided a cleaner extract, and that
32 was information that was supported by the work that the
33 automation project team had done.
34
35 So from a laboratory perspective, we were looking to
36 replace a Chelex method with an automated DNA IQ method.
37 I think it appears when we review the documents that while
38 we understood the manual version - and I agree with
39 Dr Wilson-Wilde's comments about the supposition that maybe
40 you would never get - you know, there are factors with
41 automation that you would never see in a manual method,
42 I think that the trade-off was to automate those processes
43 and I think we looked at that in view with then it was
44 recognised quite soon after it was implemented that the
45 off-deck lysis was a requirement to make that change and
46 that change was made and implemented.
47

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1 MR McNEVIN: So I guess from my perspective at the time,
2 the lab had a massive backlog of work and so if we had just
3 continued down a fully manual method, we would have been
4 irresponsible, because a lot of work wouldn't have just got
5 done. So, you know, I see that it was necessary for us to
6 implement technologies that would enable us to actually
7 process the samples required. If we'd have just continued
8 down doing low numbers of samples in a very laborious way,
9 the laboratory wouldn't have needed any other liquid
10 handling platforms because we wouldn't have had the volume
11 of work to feed them from the extraction process. So in
12 order for us to actually get on with the business of doing
13 DNA profiling, we needed to automate.
14
15 So was it irresponsible to persist with validating an
16 automated method? No, I think that was the remit we were
17 given and it was what we set out to do. It seemed to me
18 that that was a necessary - we needed to move the
19 laboratory forward. We needed to implement technologies
20 which enabled us to actually get through the volume of work
21 that the laboratory was being supplied with.
22
23 MR FOX: Dr Hlinka, what do you wish to say in relation to
24 what I have put?
25
26 DR HLINKA: I would say the same thing as well. The
27 demands on manual work were getting to be fairly
28 unrealistic to be able to continue manual work. A lot of
29 people had problems with shoulder pain and things like that
30 doing manual work, and it was very hard for the people to
31 continue to keep on doing manual work, and it was not fair
32 to the staff to actually continue everything manually. We
33 needed help with the limited resources that we had, like
34 with the robots, to be able to go through all the case work
35 samples that we had at the time.
36
37 MR FOX: Mr Muharam, your response, please?
38
39 MR MUHARAM: I don't have anything really additional to
40 add to the comments already. One minor comment is that,
41 you know, we weren't - at the time, not doing really
42 anything novel per se, you know, we were using technologies
43 and chemistries available to many different labs and, you
44 know, obviously a lot of labs had already successfully used
45 the system. So we were trying to do our best to, you know,
46 basically keep up and, you know, adopt new technology.
47

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1 MR FOX: Thank you. Ms Gallagher, would you wish to
2 provide your response to what I have said?
3
4 MS GALLAGHER: Sure. Like those before me, I concur with
5 the comments that were being made with regards to
6 implementing technology to speed up the workflow within the
7 laboratory at the time. As you referenced at the
8 beginning, the - there had been previous inquiries and
9 investigations into the backlog of the laboratory and,
10 ultimately, everybody was working with a goal to try to
11 achieve clearing that backlog and this was one aspect of
12 trying to clear that backlog through the implementation of
13 the automated platforms.
14
15 MR FOX: Now, if you would all just cast your mind to
16 around October 2007 - so this is on the eve of going live
17 with the fully automated system
18
19 I will just ask if it is possible to bring up
20 paragraph 89 of Mr Nurthen's first statement, which is the
21 one dated 25 October.
22
23 This is at paragraph 89. Mr Nurthen, you recount what
24 appears to be a conversation that you had with your
25 manager, Ms Ientile, at this time on the eve of Project 13
26 going live. You indicated that you were concerned for the
27 yields being too low at that time, and you attached two
28 notes that are made, and Ms Ientile has had a chance to
29 consider those in the last few days. I'm just going to ask
30 firstly, because it's obviously a point of disagreement
31 that has arisen between the two of you, and I do want to
32 have some discussion about that, and that won't surprise
33 you. We can't gloss over that.
34
35 Can I just ask firstly, Mr Nurthen, would you mind
36 just expanding on, in terms of explaining, what was the
37 concern that you held at that time, how you came to reach
38 that concern, and then what you did about it - that is, you
39 obviously had the conversation with Ms Ientile, but would
40 you mind working through those steps so that we can
41 properly understand what was going on in your mind on the
42 eve of going live?
43
44 MR NURTHEN: Yes, so obviously leading up to the go-live
45 we were still working on the protocol, it wasn't finished.
46 I think I had raised probably on that one on the 16th
47 saying, you know, "The yields are still down." We

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1 obviously knew the yields were down. I think the outcome
2 of that was for Vojtech to be talking with Promega to see
3 was there anything that we were doing wrong that was
4 causing, you know, these yields to go down. So not
5 PerkinElmer at this stage; we had already reached now out
6 to Promega.
7
8 I think there was the possibility of thinking that
9 maybe there was alcohol left over from the washes that was
10 interfering with the beads being eluted. Yes, I think
11 I raised it, I think basically we would need more time to
12 continue to develop that protocol.
13
14 MR FOX: And were you, so far as you can remember - was
15 your advice that it should not launch?
16
17 MR NURTHEN: I can't recall if I said it should not
18 launch. I know the feeling was we weren't ready, but I can
19 also appreciate that the laboratory itself had other
20 priorities as well. So I can't recall using those words to
21 Vanessa saying, you know, "I do not support this going
22 live". Obviously I supported it going live, in terms of
23 getting standard operating procedures written up and
24 developed and implemented within the laboratory. But
25 I would have disagreed with - I don't think we were there
26 yet because those yields weren't up.
27
28 MR FOX: I'm just trying to get a sense of how vehement
29 your view was, how strong your view, so that Ms Ientile can
30 hear everything you have to say about this so that she can
31 then respond to it. But is this a matter of - I don't
32 expect it to be a casual conversation, but how formal was
33 the discussion and how strident were you in expressing your
34 views?
35
36 MR NURTHEN: Well, it was a formal discussion in the sense
37 that it was part of the weekly update that I had with
38 Vanessa for the project, so it was part of that meeting
39 that we would have every other week to discuss how the
40 project was going, and it wasn't just that part of the
41 project, there were other parts of the automation project
42 that we'd also discuss as well. Like I said, I can't
43 recall not wanting to go live, but I guess the context
44 being that we had received the instruments in roughly 2006
45 and we were nearly at the end of 2007 and we still hadn't
46 brought them online.
47

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1 MR FOX: Ms Ientile, would you like to now provide your
2 response to this, and having read through those two notes
3 that are attached to Mr Nurthen's statement?
4
5 MS IENTILE: Yes. I don't have any independent
6 recollection of any conversations that we had at the time.
7 I do acknowledge that we did have weekly meetings and they
8 were my handwritten notes from those meetings.
9
10 Obviously my writing indicates that I was aware that
11 we had discussed yields in terms of the automated method in
12 comparison to the manual method, and that was referring to
13 specifically the two DNA IQ methods.
14
15 It was our - as I mentioned before, it was our
16 intention to replace a Chelex method with an automated
17 method, so I - while I can't recall the details of the
18 conversation, from my research in preparing for this and
19 access to documents, it appears that we had had discussions
20 around comparing the DNA IQ method automated with our
21 Chelex yields, and they were - and our understanding was
22 that was comparable.
23
24 It lists that there were actions and it has a note to
25 say "Impact on going live", is what I have written in the
26 status. I would indicate that that may have been an
27 acknowledgment of the outcomes of the actions being taken.
28 May need to consider - reconsider whether the go-live was
29 going to happen on that particular date.
30
31 Then in the second note, from 16 October, yes, it
32 indicates that we did have further discussion around the
33 yield and the results using the automated process, and that
34 the actions listed indicate that the project team was
35 continuing to work on the issue, and I believe that the
36 notes that I made there were an outcome of the discussion.
37 But I did not at any stage write that we had made
38 a decision to not proceed, and I don't - I don't have
39 a recollection of that event.
40
41 MR FOX: Was it your responsibility, in the end - you were
42 the person who had responsibility to decide whether it
43 would go live?
44
45 MS IENTILE: It would have been my - ultimately, as
46 managing scientist, but I believe it would have been made
47 in consultation with the automation project team and taking

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1 into consideration factors in the laboratory, the advice
2 that they had given, potentially conversations with other
3 staff as well, although I have no independent recollection
4 whether those occurred.
5
6 MR FOX: And do you have any recollection of why, in the
7 end, having that responsibility - and I appreciate you have
8 indicated you had discussions with colleagues - but having
9 that responsibility, do you have any recollection of why
10 you were satisfied that you could approve this going live
11 at that time?
12
13 MS IENTILE: I do not have any specific recollection.
14
15 MR FOX: Is there anything that you have read in terms of
16 the documents that you have been provided with for the
17 purpose of preparing your evidence - is there anything that
18 has refreshed your memory that might help you to be able to
19 answer that question? No-one is asking you to guess, but
20 is there anything that you have read that would help
21 refresh your memory as to what might have led to you being
22 satisfied that you could have said "Yes"?
23
24 MS IENTILE: There was an email that I sent to all staff
25 just announcing that a date had been set for the go-live,
26 and in that email, it says that they will start using
27 platforms for casework extraction on that date, and that
28 the initial steps will be training of analytical staff, so
29 there was a number of aspects to going live.
30
31 Going live did not - from reading this, my
32 understanding was going live didn't mean that we stopped
33 all manual extraction and every sample was done on the
34 automated platform; it was a slow implementation that
35 involved training, workflow processes, changes to the way
36 the scientists who were examining exhibits and sampling
37 would be doing that, and that involved a whole lot of
38 training.
39
40 There was also the aspect of being able to provide
41 detailed information sessions to all staff around the whole
42 validation process, and discussions around that, and that's
43 outlined in the email that I've sent. So from that,
44 I can - I believe I can consider that those, all those
45 aspects, were thought through.
46
47 The other aspect of that is that it outlines which

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1 samples - and I'm just checking; I have a copy of that
2 email - which samples would be run on that, on that
3 platform at that time to provide that slow implementation.
4
5 MR FOX: And these emails you are referring to or looking
6 at now, these are the attachments to an outline of evidence
7 that wasn't - it's not a sworn statement?
8
9 MS IENTILE: Yes.
10
11 MR FOX: But your solicitors provided it to the Commission
12 in response to having read this particular part of
13 Mr Nurthen's statement?
14
15 MS IENTILE: That is correct, yes.
16
17 MR FOX: So we'll be able to know precisely where they are
18 and they can be tendered in due course.
19
20 Sorry, did you wish to add anything further in terms
21 of your answer about the decision-making process?
22
23 MS IENTILE: No.
24
25 MR FOX: Mr Nurthen, did you not, then, express your
26 views - that is, your concerns about the low yield and
27 concerns about the fully automated process going live - you
28 didn't express those concerns to anybody above Ms Ientile
29 in management, did you?
30
31 MR NURTHEN: Above Vanessa?
32
33 MR FOX: So in other words, she has made the decision that
34 it's going to go live. You'd formed the view that you had
35 some concerns. Did you escalate those concerns anywhere
36 else within the laboratory or amongst management at all?
37
38 MR NURTHEN: No.
39
40 MR FOX: And can you explain - and I'm not asking this in
41 a critical way but just so that we understand - why you
42 considered that you didn't need to do that?
43
44 MR NURTHEN: I think because the project wasn't stopped.
45 We were going to continue to develop it. So it wasn't a
46 "Here it is, this is done", walk away, "There you go"; it
47 was going to be continued to be developed.

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1
2 MR FOX: So with the benefit of hindsight, do you look
3 back at your decision to act the way you did - would you
4 have done anything differently?
5
6 MR NURTHEN: Oh, it's easy in hindsight to take a look
7 back and go, "Well, maybe I should have raised it", maybe -
8 I don't know, I can't answer that to know whether or not
9 I would have raised it or wouldn't have raised it.
10
11 MR FOX: What I'm testing with you is your level of
12 concern. Because there's a concern that you don't think
13 it's good enough to go live, but you can see that after it
14 goes live there may be further work to be done and you
15 might become satisfied as that goes along, and there's
16 a concern that is held that, "I have such a concern that if
17 it goes live, I feel quite conflicted about this because
18 I think it's the wrong thing to do." I'm just trying to
19 test what the level of concern was that you had in your
20 mind at that time?
21
22 MR NURTHEN: I think if you will look at Chelex, what we
23 were delivering was better than Chelex. We were going to
24 get cleaner DNA without the need to do additional
25 processing, hopefully, and we were going to, I guess,
26 increase the capacity within the laboratory. So I would
27 have to concede that that was one of the - probably one of
28 the factors that, whilst we weren't getting as much of the
29 DNA, we were still getting DNA profiles from them.
30
31 What isn't, I guess, included within Project 13, that
32 graph at the end that talks about the actual yields, is all
33 of those - all of those samples were then subsequently DNA
34 profiled and all down to the one in 100 dilutions were
35 giving nearly full DNA profiles as well.
36
37 THE COMMISSIONER: Sorry, I have just a couple of
38 questions, if I can just interrupt for a second. We have
39 talked about decreased yield, but it wasn't just
40 a decreased yield, I mean, you know, it was a dramatic
41 decrease, not for all samples but for some of the samples.
42 It was - I mean, I think a figure has been put around of a
43 92 per cent decrease. That's not just a decrease. That's
44 dramatic, isn't it?
45
46 MR NURTHEN: That's comparative between the manual IQ and
47 the automated IQ, but not a comparison between Chelex and

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1 automated IQ. So we still could have obtained DNA profiles
2 from some of those samples that maybe Chelex couldn't.
3
4 THE COMMISSIONER: Did you see a significant increase in
5 the number of samples following the implementation of the
6 automatic method where you got no DNA detected results?
7
8 MR NURTHEN: I can't answer that because at the time we
9 weren't doing - we were amplifying everything at the time,
10 from what I recall. Even if it had a zero quantitation
11 value, I think they were still being - this was in 2007, we
12 were amplifying everything.
13
14 MR McNEVIN: I think so. I think that might have been --
15
16 MR NURTHEN: There was no threshold to meet. Everything
17 was going through, irrespective.
18
19 THE COMMISSIONER: The full procedure --
20
21 MR NURTHEN: Yes, yes.
22
23 THE COMMISSIONER: While I have interrupted, Mr Fox, I'm
24 going to keep going. Could you just explain one thing to
25 me. I'm taking some time and getting on top of everything.
26 In paragraph 49 of your statement, you attach a number of
27 SOPs, starting in October 2007 and going through to 2017.
28 Can you just explain to me what that represents? Because
29 you have talked about continuation of steps, so I just want
30 to know, does that link at all in to what you then were
31 doing afterwards?
32
33 MR NURTHEN: Yes. So the way I look at the SOPs, the SOPs
34 are the instructions, the higher-level instructions.
35 Obviously they contain individual steps as to how to
36 prepare the samples and put them on the robot, but what the
37 SOP doesn't, I guess, show you is the individual steps on
38 the robot, so the actual robotic method and what changed
39 between those robotic methods.
40
41 THE COMMISSIONER: So does this signify - all of these,
42 were these variations to the method?
43
44 MR NURTHEN: Some of them were. Version 1 was a version -
45 and I think this is outlined in my second statement in the
46 table that I provided - where it aligned each SOP with an
47 automated version protocol.

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THE COMMISSIONER: So was there - I mean, does that represent at all just routine minor adjustments or does that represent any action being taken to try and do something about this yield problem?

MR NURTHEN: Because I can't get inside those programs to know, I don't know what actually changed within them, because it could be, like I said previously, around a mixing step or something to try to increase it, but I can't tell.

THE COMMISSIONER: Can I just go back to the question a bit. I know you said you amplified up everything; irrespective of whether you got measurable DNA, as I understand it, you put it through the procedure for amplification. You didn't answer the question whether, at the end of the day, you ended up with more samples that didn't have a result?

MR NURTHEN: The answer is I don't know because I wasn't a reporting scientist at the time, to know whether or not we were seeing less samples with DNA profiles, but it would be difficult to know whether it was the method or the sample that was supplied, as to the reason you didn't get a DNA profile.

THE COMMISSIONER: Well, if you just introduced a new method and suddenly there was an increase in - if it were the case there was an increase in no results coming out of that method, it's not an illogical conclusion that at least you would test to see if it was the method that was the problem. So I'm just wondering whether there was - who would know that?

MR NURTHEN: I guess the reporting scientists at the time. They were the ones who were actually looking at the DNA profiles and doing the interpretations.

MS IENTILE: Can I add to that? So before it was mentioned that all of the samples were amplified, there wasn't a cut-off to stop a sample from progressing. There was also, in the whole casework management process at the time, no restrictions on reworking or concentrating samples, and the case managers or the casework scientists who were the ones who examined the exhibits and selected the samples to go through the process of DNA profiling,

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1 would review them on a case-by-case basis and take action
2 based on that.
3
4 In reviewing what was available to me, there was no
5 indication that there was any - in terms of the go-live or
6 following that, any indication that people had raised any
7 concerns about that at the time.
8
9 If I can also, in relation to your question about the
10 versions of the SOP, to expand on what Tom was saying,
11 there's the aspects that he was talking about, but in those
12 versions, I think, version 1 was the first version, which
13 was used to train the staff in the analytical section to
14 use the protocol; version 2 was some adjustments in the
15 writing of that protocol to make it clearer to people,
16 which was feedback that was given; my understanding of
17 version 3 is when the additional work that the project team
18 was doing was when they introduced the off-deck lysis step.
19
20 THE COMMISSIONER: Can I just go back to one other matter.
21 You said that the comparison was between Chelex and not
22 necessarily - I can understand that if that was an
23 8 per cent difference or a 10 per cent difference, you
24 could say, "Well, you know, it's different methodology and
25 we've increased - there's a decrease, but there was an
26 increase in the ultimate result". But 92 per cent, the
27 DNA IQ method was not a hundred per cent better than
28 Chelex, was it? You see what I'm getting at and if --
29
30 MR NURTHEN: I know, because it's not --
31
32 THE COMMISSIONER: If you have 92 per cent of absolute
33 DNA yield, it just doesn't - the mathematics don't seem to
34 suggest that you would get increased DNA sufficient to
35 overcome that deficiency.
36
37 MR NURTHEN: I think it's because it's about quality and
38 quantity, it's not both, and that's a very difficult thing
39 to, I guess, measure with respect to the Chelex and going,
40 "We know that Chelex gave us buckets of DNA", it always
41 did, that method, but it also gave you the inhibitors, it
42 would also co-extract bacterial DNA as part of the process
43 as well. Whereas DNA IQ was definitely giving you far more
44 cleaner - so whether or not you could say, you know, DNA IQ
45 at its worst was still better than Chelex, that's where I'm
46 sort of saying in terms of going, "Well, we didn't actually
47 directly compare, then, the Chelex method with the

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1 automated IQ method to see how different they were going to
2 be."
3
4 THE COMMISSIONER: You went back to Chelex at one stage,
5 didn't you?
6
7 MR NURTHEN: After we had the contamination, we stopped
8 and then --
9
10 THE COMMISSIONER: Is that what caused you to go back, the
11 contamination issue, not the yield?
12
13 MR NURTHEN: Yes, yes.
14
15 MS IENTILE: I would like to note also that in referring,
16 Commissioner, to the 92 per cent, you are referring to
17 information that was in the Project 13 report, and
18 I believe that all of us here have indicated that that was
19 a draft report of which there were multiple versions, so
20 there was not a finalised report.
21
22 THE COMMISSIONER: No, but the graphs and the tables that
23 indicate that degree of reduction of DNA are not in the
24 writing but in the results. So even if it wasn't a final
25 report, surely those data were still the data?
26
27 MS IENTILE: Whether that was complete data, though, is
28 the question, I think. So whether - as it was incomplete,
29 whether there was additional testing done and not added to
30 the draft report, I don't know.
31
32 MR NURTHEN: I think that's likely. I think that's raw
33 data which is - well, I was able to say for the DNA
34 profiling, for instance, that the DNA profiling showed that
35 even in that 1 in 100 dilution that looks, you know,
36 comparatively compared to the manual method, very low
37 yields, they were still giving us DNA profiles.
38
39 THE COMMISSIONER: Were you going to say something,
40 Mr McNevin?
41
42 MR McNEVIN: It was on the point earlier about the
43 collecting of data, I think.
44
45 THE COMMISSIONER: Sorry?
46
47 MR McNEVIN: I was just going to say I don't recall, and

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1 over the years I did do various data mining exercises.
2 I don't recall doing that at the time and I also don't
3 recall anyone else raising it as something that would be
4 a worthwhile study.
5
6 THE COMMISSIONER: By which you mean no-one said, "Hang on
7 a second, we're suddenly getting --"
8
9 MR McNEVIN: That's right, and I don't recall any of the
10 other sort of senior scientists at the time saying "Hey,
11 should we be looking into this?" I don't recall any of
12 that conversation happening.
13
14 THE COMMISSIONER: I'm going to turn to see if anyone on
15 the screen wants to add anything to this discussion?
16
17 MS GALLAGHER: No.
18
19 MR MUHARAM: No.
20
21 DR HLINKA: No.
22
23 MR NURTHEN: Commissioner, could I just add, as well, that
24 with the Chelex method, we had Chelex implemented for
25 various substrate and sample types - so you could do semen,
26 blood, cells, hair, tissue, and they were all done with
27 different protocols. But with the IQ, with this
28 validation, we were looking at just cells and blood, which
29 represented a subset of our work. So cases, for instance,
30 that would have been a sexual assault case, still would
31 have been extracted with Chelex at the time. We didn't -
32 that was outside of the remit of this first part of the
33 project. We always intended to go further down the path
34 and use DNA IQ for everything, but this first step was
35 looking at cells and blood.
36
37 THE COMMISSIONER: Okay. Let me say two things on that.
38 First, the question that has been nagging at me about the
39 temperature is if 37 was a perfectly good way of doing it,
40 why did people do it at 65?
41
42 MR NURTHEN: Because the --
43
44 THE COMMISSIONER: What's the advantage of doing it at 65?
45
46 MR NURTHEN: Because the lysis buffer that was supplied by
47 Promega didn't have any Pro K in it. So heating it up with

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1 their lysis buffer relied on the chemicals.
2
3 THE COMMISSIONER: By "Pro K" you mean Proteinase K?
4
5 MR NURTHEN: Yes. Which, like I said, was piggy-backed on
6 that work by Komonski et al which looked at using this TNE
7 buffer with the Pro K that would digest down those cells
8 prior, then, to doing the extraction.
9
10 THE COMMISSIONER: I have one other question, I'm sorry,
11 while I'm at it. Just talking about the samples that you
12 were testing and the yield, I can understand conceptually
13 that if you are doing a sample that has - you know, that
14 you might have picked up from a glass or something, you
15 know, that you don't get DNA, you say to yourself, "Okay,
16 well, there wasn't enough DNA to be detectable". But blood
17 seems to be in a different situation. Do you recall any
18 instances where, during the automated protocol and using it
19 this way, that you have a lot of blood and you have no DNA?
20 It doesn't seem to be possible, does it, to extract no DNA
21 from a blood sample?
22
23 MR NURTHEN: I guess you would expect to get something out
24 of a blood sample, but every blood sample, I guess, is
25 quite unique, because at the time - if we're talking mock
26 samples, at the time the blood was drawn, we're deriving
27 the DNA from white blood cells, not from the red blood
28 cells. So if someone had an infection at the time you
29 would have far more white blood cells than you would
30 normally. So between samples, between bleedings, you could
31 get wildly different results between the same amount of
32 blood, irrespective of the method that you do.
33
34 So is it possible that someone has no white blood
35 cells? I guess it is, it's probably not particularly
36 likely. I would normally expect that a blood sample would
37 give - you would extract DNA. The volumes that we were
38 working around was roughly 30 microlitres for a neat
39 sample, which is a very --
40
41 THE COMMISSIONER: I understand it is a small sample, but
42 if there is anything that is going to give you DNA, you
43 would have thought it would be a blood sample.
44
45 MR NURTHEN: And for the neat ones we were getting a fair
46 bit of DNA out of that. Like I said, they were all
47 generating DNA profiles --

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1
2 THE COMMISSIONER: Even with the automated approach?
3
4 MR NURTHEN: Yes, they were still generating profiles down
5 to 1 in 100 dilution of that, and I'm not sure whether
6 Chelex would have been able to necessarily perform the same
7 way, but we didn't do the comparison to know.
8
9 THE COMMISSIONER: While we're talking 20:20 hindsight,
10 Mr Fox has raised with you, looking back at the validation
11 procedure encompassed by Projects 9, 11 and 13
12 (indistinct), looking back on it, do you have any
13 observations to make about the quality of that validation
14 process?
15
16 MR NURTHEN: I think the documentation - we didn't
17 document it nearly as well as we should have. In
18 hindsight, I think as we did each change, we should have
19 written that into a report at the time, so it would have
20 been very, very clear, it wouldn't have been a - we're
21 relying on memory, you know, what did we do, what did we
22 change? I think it should have been incremental and it
23 should have been developmental - you get up to a certain
24 point and then you are happy with that and then you go and
25 do the rigorous testing after that. I think we took it
26 quite naively that the method that we were supplied was
27 going to work, and even with a minimal modification, which
28 we thought substituting a bit of plastic ware shouldn't
29 have changed the outcome, but it potentially did, or that
30 method wasn't as good as what they said it was.
31
32 THE COMMISSIONER: Just while I'm on that question again,
33 Mr Fox raised the report that came out in 2005,
34 (indistinct) and I picked up one thing in that, that it
35 said, in fact, it can take you over 12 months to validate,
36 therefore, it is recommended that you use validations from
37 other laboratories. Were you aware of that recommendation
38 in that report?
39
40 MR NURTHEN: I think so. I mean, like I said, we'd
41 contacted Western Australia, we had obtained their method
42 and their validation, and I think we --
43
44 THE COMMISSIONER: Is it common to use validations from
45 other laboratories?
46
47 MR NURTHEN: As the basis, yes. If they've done the hard

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1 yards and they have tested it rigorously.
2
3 MR McNEVIN: I mean, to a certain extent, that's what you
4 did by taking the CFS protocol, right? That was from the
5 Toronto laboratory --
6
7 THE COMMISSIONER: That is the point, that you did take
8 the CFS protocol.
9
10 MS IENTILE: But that is instead of developing your own
11 protocol from scratch.
12
13 MR NURTHEN: Which, if we had gone for any other chemistry
14 other than DNA IQ, we would have had to develop from
15 scratch an automated protocol.
16
17 MR FOX: On that point, the modifications made, they were
18 permissible in the sense that you have a validated system
19 from another manufacturer, you can see another lab has used
20 it. As I understand some of the evidence - it may not be
21 entirely in this Inquiry but maybe in the previous
22 Inquiry - it's not as though you can't change or modify
23 that process to a point. Did you, just while we're on that
24 topic - we've been through the various modifications that
25 were made. I'm asking this of Mr Nurthen firstly but
26 I will ask others in a moment - did you feel that the
27 changes that you were making, those modifications we went
28 through, other than the fourth one, the plastics, and
29 I appreciate that was significant in itself (indistinct),
30 were they within acceptable parameters of change in that
31 you weren't then engaging in essentially the creative work
32 that Ms Ientile was alluding to as coming up with
33 a completely different system?
34
35 MR NURTHEN: I think all of the temperatures or any of
36 those parts of that protocol were based on something that
37 we had already observed, that we had already seen, either
38 elsewhere. We didn't, for instance, go, "Well, 37 degrees,
39 no-one has used 37, let's just try 37 degrees." There
40 were reference points for everything that we did.
41
42 THE COMMISSIONER: Because a higher temperature normally
43 gives you a better result, doesn't it?
44
45 MR NURTHEN: It can, but I think what was noted in the
46 Western Australian report, they even tried at 95 degrees
47 lysis, but it resulted in not obtaining DNA profiles

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1 because they think it had damaged the DNA. So there's --
2
3 THE COMMISSIONER: At 95?
4
5 MR NURTHEN: There is a point where you can, I guess,
6 overdo it and damage the DNA that you are trying to
7 extract.
8
9 THE COMMISSIONER: What temperature do you have to heat
10 DNA to, to get it to denature?
11
12 MR NURTHEN: In amplification, yes, you can do that, but
13 it is probably in conjunction with, like, the lysis
14 chemicals and the temperature that then damaged the DNA, is
15 what I expect.
16
17 MR FOX: Can I come back to the going live part and the
18 questions I was posing before to you, Mr Nurthen, in terms
19 of your --
20
21 THE COMMISSIONER: I'm just turning to see if anyone here
22 wants to comment.
23
24 MR FOX: Sorry, did anybody on the screen want to add
25 anything to this particular point?
26
27 DR HLINKA: Yes, denaturation occurs at about 56 to 58
28 degrees, usually.
29
30 MR FOX: Would you mind just saying that again? You are
31 just fading out there.
32
33 DR HLINKA: DNA starts to denature at about 56 to 58
34 degrees Celsius, depending on conditions.
35
36 THE COMMISSIONER: Okay, thank you, that's very helpful.
37
38 MR FOX: Thank you. When you were expressing your views
39 about low yield to Ms Ientile, had you formed in your mind
40 any views about what might be causing that?
41
42 MR NURTHEN: No, I think we were stumped. We were
43 genuinely stumped. We had tried a few different things, we
44 had contacted a few different people to try to work out why
45 we were getting those lower yields. I think the concern
46 would have been that it was getting onto the beads, or it
47 wasn't binding on the beads initially, and just being

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1 essentially washed away, or it was getting on the beads and
2 they weren't being eluted.
3
4 MR FOX: Mr McNevin I want to go back to the territory of
5 where I asked Mr Nurthen about why he didn't escalate.
6 We've heard that the two of you were sitting next to each
7 other. I appreciate you were in a different team. But you
8 are a scientist yourself, you have a scientific code,
9 et cetera, that guides you. You were aware of Mr Nurthen's
10 concerns?
11
12 MR McNEVIN: To be honest, I really can't recall what
13 level of understanding I had around those concerns and
14 whether he directly expressed them to me, whether we had
15 discussed them earlier in the project but not at the end or
16 any of that kind of detail. I really don't remember. To
17 be honest, the whole implementation of the whole automated
18 protocol is quite vague in my memory. As I said, so many
19 changes went through that analytical laboratory when I was
20 looking after it that they've all kind of melded together
21 in my mind and I don't have any specific recollection of
22 that. I'm sorry.
23
24 THE COMMISSIONER: Mr Nurthen, you said you thought at the
25 time, as an explanation for the yield drop, that it could
26 have been something about it not getting onto the beads or
27 not being eluted from the beads. Do you recall whether you
28 took any steps to try to check either of those?(
29
30 MR NURTHEN: Yes, I think we did. We saved the lysate.
31 So that the normal protocol, the CFS protocol, basically
32 binned the lysate, but I think from day 1 we introduced
33 a step that we would save the lysate into a deepwell plate.
34 I can recall, but I'm not sure whether or not this was
35 pre-October 2007 or whether this was in 2008 when we were
36 dealing with the contamination, there were experiments
37 about re-extracting it from the lysates to see if that's
38 where the DNA was going.
39
40 THE COMMISSIONER: Because my first reaction when you said
41 "We thought this was the problem" was, well, then, why
42 didn't you do something about it, if you thought that was
43 the yield issue. But why would you be doing that with the
44 lysate to see where the DNA was going if it was only
45 a decontamination question? You said, "I'm not sure
46 whether it was for the yield" - you remember doing these
47 experiments and you said you weren't sure whether it was

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1 for the yield or for the contamination. Why would it
2 work --
3
4 MR NURTHEN: Well, we went back to those lysis plates and
5 re-extracted from them to work out what was going on with
6 the contamination. So that was actually what helped us
7 diagnose parts of the contamination, because we could go
8 back to these lysate plates, re-extract and see, oh, the
9 lysate wasn't contaminated, but the sample was
10 contaminated.
11
12 THE COMMISSIONER: I see.
13
14 MR NURTHEN: But I am trying to recall whether or not we
15 had done additional experiments on re-extracting from those
16 lysates prior to going live, and I can't recall. I know we
17 did at some stage do those experiments.
18
19 THE COMMISSIONER: When you did those experiments - sorry,
20 you recall doing those experiments or the experiments with
21 the retained lysate for the purposes of the contamination
22 issue?
23
24 MR NURTHEN: Yes.
25
26 THE COMMISSIONER: You can't recall one way or the other
27 whether you did it for the purpose of re-examining the
28 yield if the yield problem arose from the lysate to the
29 beads and then coming off the beads, right? If you had
30 done it for the purpose of yield levels, you would have had
31 those results somewhere, wouldn't you?
32
33 MR NURTHEN: Yes, possibly, and we may even have raw data
34 that has that somewhere in there. Like I said, I can
35 recall - and this might have been in some of those
36 automation meeting minutes where we were talking about the
37 lower yields and whether or not any of those meeting
38 minutes talk about the possibility if it not getting on the
39 beads and being in the lysate. I honestly can't recall.
40 Yeah.
41
42 I think that would have been one of the logical
43 solutions that, when you're trying to backtrack and work
44 out at what point you weren't getting DNA, the binding is
45 step one and the release is step 2. So I imagine that it
46 would have been before, because we would have gone, "Well,
47 we've got those lysates, let's go back to them, let's see

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1 if we can get the DNA."
2
3 THE COMMISSIONER: Did it occur to you that it could have
4 been a problem with the lysis step itself?
5
6 MR NURTHEN: I didn't ever think that the lysis was the
7 problem.
8
9 THE COMMISSIONER: You didn't ever?
10
11 MR NURTHEN: No, I didn't. I didn't ever think that the
12 lysis was - because that was an established protocol, using
13 Proteinase K in a buffer and incubating for a period of
14 time was like a standard protocol that was out and about
15 within the forensic domain. So I wasn't concerned about
16 getting enough DNA off the substrate to start with; it was
17 always the binding and the release.
18
19 THE COMMISSIONER: One more thing just for ongoing
20 purposes: looking at it now, if you wished to retest
21 samples that which, for some reason or other did, not work,
22 would you retest the lysate or would you go back and start
23 all over again on those samples?
24
25 MR NURTHEN: I don't think we have the option to retest
26 the lysate anymore. I think I would --
27
28 THE COMMISSIONER: You would go back and re-extract?
29
30 MR NURTHEN: I think they were kept for many, many, many
31 years.
32
33 THE COMMISSIONER: You would have to go back to the
34 samples themselves?
35
36 MR NURTHEN: I think now you would have to do that.
37
38 THE COMMISSIONER: It would not help to simply look at -
39 so you don't have any - you don't believe - not "any", but
40 you don't believe that the system has stored the extracted
41 DNA anyway?
42
43 MR NURTHEN: Sorry, we did - like I said, we did store all
44 of those deepwell plates with the lysates in them for
45 a number of years, but I think they have since been
46 discarded.
47

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1 THE COMMISSIONER: That's what I mean, now; you don't
2 necessarily have them now.
3
4 MR NURTHEN: Correct.
5
6 THE COMMISSIONER: You would have to go back and start
7 from scratch with the original samples.
8
9 MR NURTHEN: Unless we had some substrate left over. Spin
10 baskets - are they still kept?
11
12 THE COMMISSIONER: For more certainty, just in case it was
13 a problem pre-lysis, the practice would be to go back to
14 the original samples, wouldn't it?
15
16 MR NURTHEN: Yes, but if we had the spin baskets, that
17 would also, I guess, indicate if that was a - the pre-lysis
18 issue. So the spin baskets --
19
20 THE COMMISSIONER: But if you looked at after the lysis
21 step and you had lots of DNA there, you'd be okay, but if
22 you didn't have a lot of DNA there you'd have to go back
23 and start again from the samples?
24
25 MR NURTHEN: It would be ideal.
26
27 THE COMMISSIONER: Yes.
28
29 MR FOX: Mr McNevin, you wanted to say something?
30
31 MR McNEVIN: Yes. I think we did used to also split the
32 samples back in the day.
33
34 THE COMMISSIONER: You used to what, sorry?
35
36 MR McNEVIN: Split the samples, so there may be an
37 un-extracted portion remaining from some of those. I can
38 remember the storage of the lysates and --
39
40 THE COMMISSIONER: You mean the samples after lysis?
41
42 MR McNEVIN: Both. So both the --
43
44 THE COMMISSIONER: You mean the original sample? When I'm
45 talking about samples, contrast the lysate --
46
47 MR McNEVIN: Yes.

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1
2 THE COMMISSIONER: You used to take the original sample,
3 split it, put one through and keep the rest, the other
4 part?
5
6 MR McNEVIN: Some of them, yes, I think.
7
8 MR NURTHEN: But based on the size because with DNA IQ,
9 you couldn't put certain sizes of samples through and that
10 was where Vanessa was talking about part of that education
11 process; with the scientists actually doing the
12 examinations, we had to train them to take less sample than
13 what they had previously been giving us.
14
15 MR McNEVIN: So, yes, I think there would be some
16 retained. And then there is also the - what we refer to as
17 the spin basket, which is the - after you've carried out
18 the lysis, you'd centrifuge the sample essentially through
19 a coarse sieve to then retain some physical materials.
20
21 THE COMMISSIONER: You take samples off that and the other
22 part can then be retained and it is a question of how long
23 it has been retained for.
24
25 MR McNEVIN: Yes, and we have used them in the past to
26 resolve quality issues and stuff like that. So there would
27 be a portion, some of them, left. I'm not sure that
28 everything - some samples kind of are not - there's nothing
29 much left when you finish doing the DNA extraction.
30
31 I think we did ultimately get rid of all those lysates
32 at some point. I think there may have even been an issue
33 with - I can't really remember, but I think it might have
34 been an issue with storage where some of them were all sort
35 of knocked over and - in the freezer or some sort of -
36 because we had a lot of storage issues with space. We
37 lacked a lot of space.
38
39 THE COMMISSIONER: Is there anything anyone wants to add
40 on the screen in relation to this topic?
41
42 MS GALLAGHER: No.
43
44 DR HLINKA: No.
45
46 MR MUHARAM: No.
47

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1 MR FOX: I have one more question to clarify around the
2 going live part, this is really - the decision having been
3 made, Ms Ientile, to go live, and you're armed with
4 Mr Nurthen's concerns, he has expressed those to you,
5 you've indicated that at some point you must have satisfied
6 yourself enough, did you - do you recall whether or not,
7 having been armed with Mr Nurthen's concerns and this whole
8 issue about low yield, whether that was something that you
9 might need to express to a third party like the Queensland
10 Police Service, that would be relying on results coming out
11 of the lab?
12
13 MS IENTILE: I don't recall any specific conversations
14 around that. I believe, based on the information that I've
15 reviewed, that I was comfortable that it was comparable to
16 our existing manual method so therefore that was --
17
18 MR FOX: I just want to be clear, and I'm not asking you
19 to guess, but do you have any recollection of escalating
20 it, in that sense of informing, informing the Queensland
21 Police Service, or indeed any other body that might rely on
22 results coming out of the lab, that there might have been
23 any concerns around using the automated process?
24
25 MS IENTILE: I don't have any recollection.
26
27 MR FOX: I think that's a convenient point because I'm
28 going to move into the contamination issue that arose
29 fairly shortly after --
30
31 THE COMMISSIONER: Your timing is pretty good. There are
32 only four minutes to go.
33
34 MR HOLT: Commissioner, given there are only four minutes
35 to go, might I, in that time, for Ms Ientile just ask
36 a couple of clarifying questions, that would only take
37 a few minutes. I'd be very grateful. I'm going to ask
38 those initially of Dr Nurthen, if that's okay.
39
40 I just want to be clear about maths, if we can do
41 this. There obviously has been a lot of talk in this
42 process about the 92 per cent number and I just want to
43 make sure that we are clear about what the 92 per cent is
44 of, if I can put it that way. As I understand it, the
45 92 per cent is the difference between yield from the manual
46 DNA IQ method and the automatic DNA IQ method. Is that
47 your understanding?

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1
2 MR NURTHEN: That's my understanding of when you actually
3 compare the two or when you divide the two - that's what
4 you get.
5
6 MR HOLT: Thank you. Am I right, though, that the manual
7 DNA IQ method was that one was being used as part of the
8 process of getting to the point of automation, not one that
9 was actually ever in place in the lab; that wasn't what you
10 were replacing?
11
12 MR NURTHEN: Correct, we weren't replacing that.
13
14 MR HOLT: I understand. So what was being replaced, in
15 fact, was the Chelex manual system?
16
17 MR NURTHEN: Yes.
18
19 MR HOLT: And the 92 is not a comparison in terms of yield
20 between Chelex, the system that was actually in place, and
21 which r and everyone else would have been used to, and the
22 automatic DNA IQ extraction method?
23
24 MR NURTHEN: Correct, there are no direct comparisons
25 between the two.
26
27 MR HOLT: No, I understand that. In fact, we have seen
28 some material, just in the form of emails and things which
29 the Commission has, which suggest that, in fact, the Chelex
30 DNA - the Chelex manual extraction method was comparable in
31 terms of yield, maybe slightly better but not much, than
32 the automatic DNA IQ method. Can you assist us with that?
33 Do you have any memory of that comparison being done at
34 all?
35
36 MR NURTHEN: No, I don't, but, like I said, I know Chelex
37 can give you very high yields but it is the quality that's
38 the problem.
39
40 MR HOLT: I guess what I'm interested in, in terms of the
41 significance of the change, is whether or not we're talking
42 here about the 92 per cent being a difference from that
43 which was then being - the yield that was then being got
44 from DNA and that which was to then now be got from the
45 automatic DNA IQ method.
46
47 MR NURTHEN: I guess without a comparative validation,

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1 like I said, I'm not aware of there being any validation
2 done on Chelex at all within the laboratory, so there's no
3 reference point to actually directly compare the results
4 that came out of automated IQ and Chelex, like sample per
5 sample.
6
7 MR HOLT: I understand, thank you so much. We literally
8 have one email, in the limited time that we have had, which
9 suggests that the yield extracted using Chelex and the
10 yield extracted using the automatic DNA IQ are, in fact,
11 similar.
12
13 MR NURTHEN: Okay.
14
15 MR HOLT: I take it you have no independent recollection,
16 I don't expect you to, given the time.
17
18 MR NURTHEN: It's possible.
19
20 THE COMMISSIONER: To look at the comparison, you're
21 saying the comparison between Chelex and the automated
22 system?
23
24 MR HOLT: Yes.
25
26 THE COMMISSIONER: You say you have an email to suggest
27 that was similar?
28
29 MR HOLT: Yes, we have provided that to the Commission.
30
31 THE COMMISSIONER: I'm not on top of every email.
32
33 MR HOLT: I think it was provided not long after we
34 received it about 24 hours ago. Thank you, Commissioner.
35
36 I just want to see whether you have any recollection
37 of that work being done at all. And again I acknowledge it
38 was a decade and a half ago.
39
40 MR NURTHEN: No, I don't.
41
42 MR HOLT: Just finally, in terms of the significance of
43 go-live, and I'm sorry, Commissioner I've been slightly
44 longer than --
45
46 THE COMMISSIONER: No, that's all right.
47

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1 MR HOLT: Thank you.
2
3 In terms of the significance of go-live - Ms Ientile
4 I might ask you this - there was some reference to the fact
5 that you took some handwritten notes - do you recall those?
6
7 Would it be possible to bring up Dr Nurthen's
8 statement and page 606 of that, please, which has the
9 second set of notes.
10
11 You will recall this was effectively "implement and
12 optimise", that phrase that was used, Ms Ientile? Do you
13 recall that?
14
15 MS IENTILE: Yes.
16
17 MR HOLT: I will ask you both, but what did you understand
18 to be meant by "implement", and particularly "optimise", in
19 that context?
20
21 MS IENTILE: I believe my understanding was both twofold -
22 one about yield and one also about the usability of the
23 method, in terms of (indistinct) as a process that's used
24 within the laboratory.
25
26 MR HOLT: Thank you. Dr Nurthen, I know you know it
27 because you helpfully provided it. Again from your
28 perspective, "implementing" and "optimising", and I guess
29 particularly off-deck lysis, those sorts of things which
30 occurred, what was the process of ongoing optimisation that
31 was to be done following go-live or were you just kind of
32 leaving it to see what happened?
33
34 MR NURTHEN: No, I think I take that to mean that, yes,
35 implement, but continue to work on the method to get those
36 yields up. Continue to work on in the background.
37
38 MR HOLT: And again in terms of the significance of
39 go-live, and, Dr Nurthen, you might recall this, but
40 I think it's clear from the memorandum that Ms Ientile sent
41 at the time to all staff, that initially it was only to be
42 that the automated DNA IQ system was to be used for
43 high-volume backlog cases, not everything across the board?
44
45 MR NURTHEN: That's my understanding.
46
47 MR HOLT: So in that sense, it wasn't like go-live

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1 involved everything suddenly moving to automated DNA IQ?
2
3 MR NURTHEN: And like I said, not everything was validated
4 for IQ anyway. Anything outside of cells and blood wasn't
5 going to be put on the robot. So sexual assault cases,
6 tissue, hair - none of that was validated for it.
7
8 THE COMMISSIONER: So none of that was validated for it;
9 it wasn't --
10
11 MR NURTHEN: We hadn't even - sorry?
12
13 THE COMMISSIONER: Sorry, can you just - I know we're
14 taking time, just to clarify that, are you saying that the
15 automated method was not to be used other than for backlogs
16 at that time, when it went live?
17
18 MR NURTHEN: Wasn't to be used for --
19
20 THE COMMISSIONER: New cases.
21
22 MR NURTHEN: -- semen or hair or tissue, because we hadn't
23 even developed that part of the protocol.
24
25 THE COMMISSIONER: What was it to be used for?
26
27 MR NURTHEN: For blood and cells, and I think initially -
28 and you have seen within that email, or within that
29 memorandum, it says "for volume crime samples".
30
31 THE COMMISSIONER: I don't know if I understand what's
32 encompassed --
33
34 MR NURTHEN: Crimes against, like, vehicles, break and
35 enters, rather than the major crimes, crimes against
36 a person.
37
38 MR HOLT: In other words, go-live involved a relatively
39 small part of the workload, probably not by numbers, but
40 lower-volume crime, not dealing with that major crime
41 material, and there was to be a process of optimisation
42 that you were to lead in that respect?
43
44 MR NURTHEN: Possible. I don't - I didn't recall the
45 volume crime being the only samples, I just assumed that
46 all the - all of major and volume were going on there,
47 I don't actually have a recollection of that.

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MR HOLT: Thank you, Commissioner. I'm very grateful for that time.

THE COMMISSIONER: It is still pretty well 1 o'clock, so I'm not going to extend it. I think that if we can come back at 2 o'clock; is that convenient for everybody?

So for the break, those on the screen, thank you very much. You can just put yourselves on - take your cameras off, if you like, and leave the Zoom on. We know it's an open-ended Zoom, so it's probably better to do that, because if you go off, you will probably find you won't be able to reconnect and that will be a problem, so I suggest you just come back and turn your cameras on at about 2 o'clock, if that works. Okay, we will adjourn.

LUNCHEON ADJOURNMENT

MR FOX: Two matters before we start. It was just indicated to me before you came back on that people in the back of the gallery are finding it sometimes difficult to hear you, whether the microphone could come up or otherwise. Just so that you are cognisant of that.

The other thing is Mr Diehm indicated that he would like to ask a few questions as well, so now is the time for him to do that.

THE COMMISSIONER: Okay.

MR DIEHM: It's on that topic we were on just before lunch, and before counsel assisting moves on to the next topic.

Mr Nurthen, in the first instance I might direct my questions to you, but of course, in keeping with the Commission's process here, allowing for any of the other witnesses to answer them to the extent that they think they have something to add or to offer. I wanted to ask you about, firstly, the process that preceded the rollout of this automated method. That was one where, if I've understood your evidence correctly, the team was engaged in, in effect, a series of experiments, trialling the process to see what results they could get; is that so?

MR NURTHEN: I believe so.

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1
2 MR DIEHM: And when results were less than what was hoped
3 for or to be expected, then you would make some changes to
4 the process that was being engaged in?
5
6 MR NURTHEN: That's as I understand, we started with the
7 same method for both manual and automated and then
8 obviously made incremental changes.
9
10 MR DIEHM: Now, some of those changes might have been with
11 respect to subtle things and some of them were with respect
12 to more substantial matters; would that be fair to describe
13 it that way?
14
15 MR NURTHEN: What do you mean by "substantial"?
16
17 MR DIEHM: So to put it into a commonly understood
18 concept, some might be the question of tweaking of a dial
19 but others might be making a change to the process
20 mechanically as to what was being done?
21
22 MR NURTHEN: I think that was the intention, to try to
23 obviously increase the yields.
24
25 MR DIEHM: Yes. Now, after the rollout took place, the
26 commencement of the Project 13 automation method in October
27 of 2007, was it the case that that experimentation
28 continued?
29
30 MR NURTHEN: I believe so, and that's what led to the
31 off-deck lysis, so projects 21 and 22.
32
33 MR DIEHM: As those steps were being taken with the
34 modifications that were being made, both before the
35 commencement of Project 13 and after it, again, is it right
36 to understand your evidence as being to say, "We didn't
37 document all of the different things we were doing"?
38
39 MR NURTHEN: For projects 21 and 22?
40
41 MR DIEHM: No, within Project 13, as you were preparing -
42 in advance of the rollout, the commencement in October
43 2007, those tweaks that you were making to the process, you
44 weren't documenting all of those as you went along?
45
46 MR NURTHEN: I think they might have been documented but
47 not easily to get back out of. So I'd imagine the

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1 worksheets, that if something had changed, it may have been
2 written on the worksheet, but not easily extractible in the
3 sense of it had been noted down in a Word document, for
4 instance.
5
6 MR DIEHM: Or put into a report?
7
8 MR NURTHEN: Put into a report to be able to say we did
9 this, this, this, this and this.
10
11 MR DIEHM: So now you're unable to go back and find what
12 those changes were from time to time?
13
14 MR NURTHEN: Yes, and because some of them are actually
15 within the program of the robot itself, of which we're
16 unable to read the actual program to know what changed on
17 the robot.
18
19 MR DIEHM: Now, leaving aside the change to the off-deck
20 lysis in, I think it was March 2008 - that's about the
21 right time?
22
23 MR NURTHEN: Somewhere about that time, yes.
24
25 MR DIEHM: Leaving aside that change, again, the tweaks
26 that were being done post the commencement of the
27 Project 13 rollout in October 2007, again, weren't being
28 documented in a now readily retrievable way?
29
30 MR NURTHEN: Yes, they were within projects 21 and 22, was
31 the documentation of the new process, I guess.
32
33 MR DIEHM: And that was from immediately after the
34 commencement in October 2007.
35
36 MR NURTHEN: Or thereabouts, yes.
37
38 MR DIEHM: Or thereabouts. So, now, in projects 21 and
39 22, there was data that was collected?
40
41 MR NURTHEN: Yes.
42
43 MR DIEHM: And some representation of that, at least, was
44 made in project reports that were prepared in that regard?
45
46 MR NURTHEN: Yes.
47

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1 MR DIEHM: Can I ask if this document can be put up on the
2 screen, it's from Mr Nurthen's primary statement, and I can
3 give a page reference from the Commission's indexation if
4 that's convenient. It's LAY.010.011.0454, if that helps.
5
6 THE COMMISSIONER: Is this Mr Nurthen's current statement?
7
8 MR DIEHM: Yes, it is.
9
10 THE COMMISSIONER: What page was it?
11
12 MR DIEHM: It is, to use the computer indexation,
13 LAY.010.011.0454.
14
15 THE COMMISSIONER: Is it a page of his statement?
16
17 MR DIEHM: It's an annexure to it.
18
19 THE COMMISSIONER: Which one?
20
21 MR DIEHM: 454, I'm sorry, Commissioner.
22
23 So Mr Nurthen, there we can see a table for manual
24 versus automated blood sensitivity on rayon swabs, figure
25 9 - I should have said "figure", rather than "table". And
26 then on to the next page, if I may, we have figures 10 and
27 11, for blood sensitivity on cotton swabs and cell
28 sensitivity on rayon swabs, and then to the next page, 456,
29 figure 12, for cell sensitivity on cotton swabs. I wanted
30 to ask you, firstly, were you the person who put this data
31 into this report?
32
33 MR NURTHEN: I can't recall. I may have, but I honestly
34 can't recall.
35
36 MR DIEHM: I should have said to you, in fairness, to
37 orientate you to this, the document I have you looking at
38 at the moment is the last of the documents that have been
39 saved to the system, and figures of this kind appear in the
40 last couple or the last few, but not in earlier versions.
41 So you can't recall whether you were the person who
42 inserted this data into the report?
43
44 MR NURTHEN: Correct.
45
46 MR DIEHM: Draft as it was?
47

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MR NURTHEN: Yes.

MR DIEHM: Do you know when the data was collected?

MR NURTHEN: I assume it was at the time that we were doing both the manual and the automated, so in - prior to October 2007, I'm assuming.

MR DIEHM: Do you remember how long before October 2007 it was that that was being done?

MR NURTHEN: No.

MR DIEHM: Are you able to say by reference to the various tweaks that were being done to the system in preparation for rollout or in advance of rollout in October 2007, what mode of operation the system was using at the time this data was collected?

MR NURTHEN: I can't tell from that graph, no.

MR DIEHM: And you have no recollection of it?

MR NURTHEN: No.

MR DIEHM: Can I ask whether any of the other witnesses can say whether or not they were the person who inserted this data into the draft report? Firstly, those present in the courtroom?

MS IENTILE: I wasn't.

MR McNEVIN: It wouldn't have been me.

MR DIEHM: And those attending virtually?

DR HLINKA: I can't recall.

MR MUHARAM: I do not recall.

MS GALLAGHER: No.

MR DIEHM: And may I ask if any of the other witnesses are able to say anything about the time point at which the data refers and the method of operation of the system that it is based upon?

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1 MS GALLAGHER: No.
2 MR DIEHM: I'm taking that to be a "no", Commissioner.
3
4 MR MUHARAM: No.
5
6 DR HLINKA: No.
7
8 MR McNEVIN: I'm not sure what you mean by "method of the
9 system".
10
11 MR DIEHM: So I go back to the questions that I've been
12 asking about, of how whilst there was this project for the
13 automation of the system, there were tweaks being made to
14 the way in which the system operated as experiments were
15 being conducted to try to get the best results. And what
16 I'm asking is, if you accept that that was what happened,
17 if you know, whether you're able to say the mode of
18 operation within those realms that was in place at the time
19 this data was collected?
20
21 MR McNEVIN: Oh, so which of the many steps were made?
22
23 MR DIEHM: Yes.
24
25 MR McNEVIN: Oh, no, I don't --
26
27 MR DIEHM: Thank you. Does that clarification help any of
28 the other witnesses in terms of being able to offer some
29 evidence about this?
30
31 MR MUHARAM: No.
32
33 MS GALLAGHER: No.
34
35 DR HLINKA: No.
36
37 MR DIEHM: Thank you, Commissioner.
38
39 MR RICE: Commissioner, if I may, I have perhaps two or
40 three questions on the same matters that Mr Holt raised
41 before lunch, it may be convenient to --
42
43 THE COMMISSIONER: Okay.
44
45 MR RICE: Perhaps I could ask you this, Mr Nurthen,
46 Mr Holt asked you to confirm what that figure of
47 92 per cent published in the draft Project 13 report

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represented. You told us it was a comparison between yield sensitivity as between manual and automated DNA IQ processes. Did I understand you correctly to say that even from low yield DNA IQ automated process, it was nonetheless possible to still develop useable profiles?

MR NURTHEN: Yes.

MR RICE: Does it follow, then, that to assess the true significance of the difference between the yield from the automated and manual processes, one would need to compare the extent to which that difference impacted on the obtainability, if that's a word, of useable profiles?

MR NURTHEN: Yes, I think you'd need to take in the full context in the quality, quantity and whether you could get a DNA profile, because if you get a lot of DNA but you still couldn't generate a DNA profile, then it wasn't much use.

MR RICE: Is it right to say that a 92 per cent difference between pure yield from manual to automated processes does not mean that there is a 92 per cent reduction in the obtainability of a useable profile?

MR NURTHEN: Correct.

MR RICE: Thank you.

THE COMMISSIONER: I think I understand that question and answer. Mr Fox.

MR FOX: Thank you. I was waiting to see if anybody else wanted to jump up.

May I just take you back to the question that was posed by Mr Holt before lunch to Mr Nurthen, and this was in relation to the use of the automated system with respect to only particular types of samples, and it was - I think the answer that was given was it was not being used for major crime cases.

MR NURTHEN: I hadn't recalled that was the case. I don't recall the memo. But if that's what it was, I accept that's what it was. I assumed it was everything.

MR FOX: Right. If --

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1
2 THE COMMISSIONER: Sorry, when you say you assumed it was
3 everything, you assumed that the automated method was being
4 applied to all samples, once it was --
5
6 MR NURTHEN: Cells and blood but, no, not restricted to
7 any particular case type.
8
9 THE COMMISSIONER: I understand.
10
11 MS IENTILE: May I add to that, please?
12
13 MR FOX: Yes.
14
15 MS IENTILE: According to the email that I sent to all
16 staff announcing what was happening, it was written that
17 initially, as training in both analytical and the other
18 areas is happening, the samples will mainly be some of the
19 backlog samples, and there was a reference to the fact that
20 in other areas, the scientists still needed to be trained.
21 So it may mean that some other cases were implemented but
22 I'm not sure of the time frame.
23
24 THE COMMISSIONER: Just to clarify that, I know your
25 memory is probably not as precise as that --
26
27 MS IENTILE: Yes.
28
29 THE COMMISSIONER: -- but when you say "mainly to other
30 samples".
31
32 MS IENTILE: I'm reading what I wrote.
33
34 THE COMMISSIONER: That's right, but that's not exclusory.
35
36 MS IENTILE: I'm just reading, yes.
37
38 THE COMMISSIONER: What that seems to say is "We'll start
39 off that way", but it doesn't say when a transition - if
40 a transition does occur to all samples, when and if that
41 will happen; it simply allows for some training to take
42 place before further development - before further
43 application is put in place.
44
45 MS IENTILE: Yes, I do write - the next sentence in my
46 email says:
47

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1 *I would expect also that we would not reach*
2 *full capacity on these platforms until the*
3 *new year.*
4
5 THE COMMISSIONER: "The new year" being in the beginning
6 of 2008?
7
8 MS IENTILE: Yes.
9
10 THE COMMISSIONER: Yes, so the fact that it wasn't being
11 applied to all samples or a greater type of samples was
12 a short-term matter to enable further training to occur?
13
14 MS IENTILE: That's my understanding, yes.
15
16 THE COMMISSIONER: Thank you very much. That's very
17 helpful.
18
19 MR FOX: I think that was the area that I was going to ask
20 about. So that means that, to the best of your
21 understanding, it would have been anticipated that by the
22 beginning of 2008, it would then be applied across the full
23 suite?
24
25 MS IENTILE: I guess so at the stage that I wrote that
26 email but I don't have any records to indicate what
27 happened.
28
29 THE COMMISSIONER: Is there any reason why, looking at
30 that time, if you had got it up and running to satisfactory
31 levels, it would not be applied across all samples? Is
32 there any particular kind of sample that does not lend
33 itself to the automatic --
34
35 MR NURTHEN: For the cell type or --
36
37 THE COMMISSIONER: Cell type or substrates?
38
39 MR NURTHEN: Yes, because we'd only validated for cells
40 and blood, we knew we had to do additional work on it, for
41 instance, for hairs and for semen and for tissue, because
42 we knew they'd be modifications of the automated protocol,
43 because that automated protocol didn't cover those
44 particular biological sample types.
45
46 THE COMMISSIONER: But would you have had - is there any
47 record of having done that further testing that would have

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1 meant that that application was extended?
2
3 MR NURTHEN: There's records of projects that we were
4 going to start but we never started them, with respect to
5 semen and - yes.
6
7 THE COMMISSIONER: Thank you. Did you want to add
8 something?
9
10 MR McNEVIN: Yes, there was an element of - we talked a
11 little bit earlier about the sample size.
12
13 THE COMMISSIONER: Yes.
14
15 MR McNEVIN: So I seem to recall reading an email in
16 preparation for today that the volume crime team had
17 already been sampling to a smaller sample size in
18 preparation for automation, but that the major crime team
19 had not, so that would have been another reason why we
20 wouldn't have just gone to everything. So samples that
21 hadn't been sampled to a proportion that was amenable to
22 the automated extraction would have continued through the
23 older process until the newer samples had come through, or
24 we would have had to have done some sort of resampling
25 prior to carrying out the extraction.
26
27 THE COMMISSIONER: Thank you.
28
29 MR FOX: Now, could I take --
30
31 THE COMMISSIONER: Just looking to the other side, no-one
32 is waving a hand, so I'm assuming there is no further
33 comment from those on screen.
34
35 MS GALLAGHER: No.
36
37 MR MUHARAM: No.
38
39 DR HLINKA: No.
40
41 MR FOX: Can I then take you to the events of February
42 2008, so this is when contamination starts to be
43 discovered, and the first contamination event is
44 11 February 2008, which is recorded in the OQI 19330 part
45 of the analytical issues log. Then there are further
46 instances of contamination in April and May.
47

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1 Mr Nurthen, you indicated in paragraph 95 of your main
2 declaration or statement that it was sample
3 cross-contamination that you believed was what was the
4 cause of the problems in early 2008. So in terms of - what
5 steps were then taken to resolve that contamination
6 problem?
7
8 MR NURTHEN: So initially it was trying to work out how we
9 thought it had occurred, as to what had actually occurred,
10 which I think - it took a number of different OQIs before
11 we could link them all. With the initial one we didn't
12 suspect that it was definitely contamination. I think
13 there were re-extractions of the samples to see whether the
14 samples had been contaminated initially, at what step.
15
16 MR McNEVIN: Yes, I can't recall super clearly but we had
17 a process of just trying to work out what step that
18 contamination had occurred. We must have at some point
19 decided that it was the extraction, and then - I seem to
20 recall that I was involved in doing some of the early
21 investigations, of trying to work out exactly where - how
22 that contamination had occurred, where it occurred in the
23 process. And then I think at some point we realised that
24 it was a much bigger problem and I needed to keep working
25 on keeping the lab running, and that was - the
26 contamination investigation was handed over, back to sort
27 of Tom and the automation team to deal with.
28
29 So I can't remember the exact steps we took, but
30 certainly that was always our sort of process to doing
31 contamination investigations, was trying to work out at
32 what step in the process did it occur and, again, what was
33 the source, what were the contaminated things, you know,
34 where did it come from, where did it go to, and then sort
35 of backtrack from there to try to work out what mechanism
36 that might have been.
37
38 MR NURTHEN: I think because initially there could be
39 multiple places where contamination can occur - it can
40 occur at extraction, it could have occurred at
41 amplification, when it was being amplified, that's another
42 spot that contamination can occur, or within the capillary
43 electrophoresis, which is the separation of the DNA.
44
45 So the standard protocol is to do a series of steps to
46 see if you can rule out any of those steps. The first one
47 would have been - and I think you probably agree with me,

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1 it would have been re-CE-ing to make sure that that
2 particular source of - because that's where you have got
3 very concentrated DNA, that's probably the riskiest part of
4 the whole process, so you would reinject that into the CE
5 to see if that was possibly where the contamination
6 occurred and then work your way backwards.
7
8 MR McNEVIN: Yes, generally speaking the process was to
9 work backwards from capillary electrophoresis all the way
10 back to extraction, when you're looking thorough for your
11 potential source of contamination.
12
13 MR FOX: That's July 2008 when the decisions are made to
14 stop using the automated system.
15
16 MR NURTHEN: Mmm.
17
18 MR FOX: Can you inform the Commissioner about, during
19 that period from February to July, why the automated system
20 didn't cease earlier? (Indistinct). If you were looking
21 for the cause, you know there is a problem, why isn't there
22 a swifter cessation of the use of the automated system?
23
24 MR NURTHEN: I think, from memory, and I could be wrong,
25 that the first lot of contamination occurred on a reference
26 batch. Reference batches, reference sample processing,
27 where you would expect to only see a single-source profile,
28 but when you're dealing with casework, you could be dealing
29 with mixtures of - and it's harder to detect contamination
30 in a casework batch because you can get mixtures as part of
31 your extracting of DNA, so it's easy to detect in a
32 reference batch, because you wouldn't get a mixture.
33
34 So I remember thinking at the time that it was
35 difficult to work out at what point this was happening,
36 when initially it was a reference one. But I think after
37 we started to make - and be really concerned that there was
38 contamination, that meant stepping back through all those
39 batches previously and re-looking at things that had been
40 passed off as not being caused by the robots but then later
41 determining that yes, it was actually the robot that caused
42 that, and that was also, I think, re-extracting that lysate
43 then to confirm that it was the robot where that
44 contamination occurred.
45
46 MR FOX: Ms Ientile, you recall a memorandum that you have
47 dated I think 14 July, and this is a memorandum that you

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1 sent to DNA analysis, which I assume is a group of --
2
3 MS IENTILE: It's the entire section.
4
5 MR FOX: The entire team. You have that memorandum near
6 you, I trust, because that was the subject of your outline
7 of additional evidence, and you indicate in the second
8 paragraph - this is on the list.
9
10 MS IENTILE: I'm not sure I have a copy.
11
12 MR FOX: They will bring it up on the screen now. It's on
13 the list that was handed up earlier. Number 30, I'm told.
14 Thank you. [FSS.0001.0024.0802]
15
16 You refer to an extraordinary management team meeting
17 on 14 July discussing what action should be taken, and in
18 the second paragraph you refer to concerns by reference to
19 three OQIs, the issue of cross-contamination in the second
20 sentence, and then the third sentence:
21
22 *The investigations undertaken to date have*
23 *not been able to identify the cause of this*
24 *contamination.*
25
26 Then you summarise at the bottom automated DNA IQ
27 extractions were introduced in October 2007, after an
28 extensive validation process.
29
30 *The results of various tests undertaken*
31 *during this validation phase demonstrated*
32 *no well to well contamination or transfer.*
33 *This process was approved and*
34 *implementation was agreed to by the*
35 *management team with the understanding that*
36 *the ongoing optimisation would continue as*
37 *part of the normal continuous improvement*
38 *process.*
39
40 That last sentence, we have had that discussion earlier
41 about ongoing optimisation.
42
43 MS IENTILE: Mmm-hmm.
44
45 MR FOX: Would you just explain to Commissioner in terms
46 of how this decision came about, it's obviously been
47 escalated to you, to then report and have this particular

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1 extraordinary management team meeting, as to - to the best
2 you can remember, having re-looked at these documents now
3 and reminding yourself, what were the steps that were taken
4 in you forming the view that this is the decision that
5 needed to be made, to cease the automation?
6
7 MS IENTILE: I don't have an independent recollection of
8 any of these events. My reconstruction is based on
9 reviewing what documents were available to me and also
10 I think documents that were available in the - from
11 statements that people made last year. My understanding is
12 this - is that would have been discussed and decided in the
13 management team meeting. It wouldn't have been a decision
14 solely based - made by me; it would have been a decision
15 that was based on the input of many scientists in the
16 management team.
17
18 MR FOX: Mr Nurthen, in response to questions that were
19 posed just shortly after lunch by Mr Diehm, you made
20 reference to Projects 21 and 22, and the documents are on
21 the schedule, but we're bringing them up as is necessary.
22 This is rows 26 and 27. We'll just come to them if we need
23 to in terms of bringing particular pages up, but the date
24 of the Project 22 is February 2008. We might just get the
25 cover page for that document. Is it the case that that
26 report was actually prepared in February 2008? There are
27 other documents we have seen where the date of preparation
28 may not necessarily - may not state the date of
29 preparation.
30
31 MR NURTHEN: I can't recall because around about that
32 period I was off on leave midway through February for the
33 birth of my second child so I wasn't actually in the lab at
34 the time. I can only assume that that is the case, that
35 that was a final - it appears to be a final document that
36 had been distributed.
37
38 MR FOX: The Project 21 just has a date of 2008, but as
39 I understood you when answering questions from Mr Diehm,
40 you made reference to both of these projects. Were these
41 projects live, in the sense that they were happening, in
42 terms of the investigative work, in around, you know, early
43 2008? In other words, before the decision is made to cease
44 automation in July 2008?
45
46 MR NURTHEN: Yes, yes.
47

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1 THE COMMISSIONER: And why were projects - I should just
2 be clear about Project 21 [FSS.0001.0084.1422]. It is
3 titled "A Modified DNA IQ Method Consisting of Off-Deck
4 Lysis", so now we've got back to that discussion we had
5 about before off-deck lysis. That's 21. And then
6 Project 22 [FSS.0001.0084.1436] has essentially the same
7 heading, "A modified DNA IQ method of Off-Deck Lysis Prior
8 to Performing Automated DNA Extraction". So we're
9 contemplating the notion of off-deck lysis here in both of
10 these reports. Why was that being investigated at that
11 time?
12
13 MR NURTHEN: As in the off-deck lysis component? I think,
14 as I said before, the issues with the Slicprep, in getting
15 them prepared for the robot, was technically very
16 difficult. So off-deck lysis was a way of manually getting
17 those samples ready to put on the robot without all the
18 hassle of having to do it through the Slicprep.
19
20 MR FOX: I suppose the point of confusion that I have in
21 my mind, (indistinct), is if we've committed to full
22 automation and we've discovered that there is contamination
23 going on, we're investigating that, the decision made
24 in July 2008 to actually stop full automation, why at the
25 same time have we got an ongoing project which is looking
26 at the off-deck lysis, which is essentially
27 a manual/automated process?
28
29 MR NURTHEN: Because I think that had already been done
30 prior to contamination being detected. I think the first
31 event, the first instance of contamination was only
32 detected in May. Even though it had occurred earlier, it
33 wasn't linked to the robots until later, is my
34 recollection. So this had already been implemented and
35 then later, then we started to detect the contamination.
36
37 MR FOX: Again I put this to you as a proposition. Is
38 there any foundation to any suggestion that the reason why
39 off-deck lysis is being looked at is because, even by early
40 2008, put to one side when contamination rears its head,
41 there was some belief within the laboratory that a fully
42 automated system just was not feasible?
43
44 MR NURTHEN: I think with that feedback, with respect to
45 the Slicprep, it made it pretty obvious that we weren't
46 going to be able to automate that entirely, and the only
47 solution was to take part of that offline.

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The other alternative would have been to go back to the CFS protocol, which was leaving the substrates in the deepwell and run the risk of clogging of the tips, which I don't think we accepted as being an acceptable solution.

MR McNEVIN: Could I add to that? I think it was also the fact that because the Slicprep was so difficult to use, and this is just me trying to recall events now, it could have been just that the Slicprep was so difficult to use that you actually weren't getting that throughput benefit of the automated protocol that you were trying to achieve. It was an element of it, I think. I think it was so laborious and time consuming and it just really wasn't making that automated method what the idea, the theoretical idea, was, that it was going to ramp up the throughput of the laboratory. I don't really recall it that well, but I just remember something like that.

THE COMMISSIONER: Can I just interrupt, then, to ask a couple of questions about this decision. If you go, Mr Nurthen - sorry to take you back - to your first statement [LAY.010.013.0001] at paragraphs 88 and 89, it raises another issue, which is the number of drafts that Project 13 went through, and I think you point out there that the draft recommendation to proceed first appeared in version 3 of the draft, which was last dated on 12 August 2008, after it went live. So that's an area that I will leave it to Mr Fox, if he wants to, to ask you some questions about, because that seems to me to be an interesting chronology, but we'll come back to that.

But then just going back to this yield question - I'm sorry, and it does fit in with what the alternatives would be of stopping the automation, in a way - you then say that your view was that:

> *... we were not ready to go live because the yields from the automated DNA IQ Protocol were too low ...*

and your concern was that the yields would not be as sensitive to extract low amounts of DNA. Now, the alternative to the automated process was really to go back to Chelex, wasn't it?

MR NURTHEN: Yes.

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1
2 THE COMMISSIONER: And yet you said earlier in your
3 evidence that even the lower amounts of extracted DNA in
4 the DNA IQ method, even if it was less than Chelex, was
5 better quality, and therefore it was still worth proceeding
6 with. So I'm trying to fit that concept in with the idea
7 that the yields were too low to proceed with. Do you see
8 the tension that I'm referring to? Can you explain that?
9
10 MR NURTHEN: Yes so I think as technology was increasing,
11 the aim was to be able to extract the smallest amount of
12 DNA possible. And certain Chelex, being a fairly
13 non-specific method, it wasn't super, super sensitive to
14 those low amounts of cells.
15
16 THE COMMISSIONER: Yes, but if you didn't go ahead with
17 the automated method, then there was no alternative but to
18 go back to Chelex.
19
20 MR NURTHEN: Yes, or to implement the manual version of
21 the DNA IQ.
22
23 THE COMMISSIONER: Which you validated.
24
25 MR NURTHEN: Yes.
26
27 THE COMMISSIONER: So what you say in 89, which is when
28 you're looking back, of course, when you say that you
29 weren't ready to go live because the yields were too low -
30 do you recall whether what was in your mind as the
31 alternative was going back to Chelex or doing a manual
32 DNA IQ extraction?
33
34 MR NURTHEN: Well, at this stage it wasn't going back to
35 Chelex, because we hadn't implemented it, so we were still
36 doing Chelex. It was about replacing Chelex with that
37 particular method, so --
38
39 THE COMMISSIONER: But if you hadn't proceeded, if you
40 hadn't got - I mean, you didn't recommend proceeding or you
41 had concerns about proceeding, that you expressed and
42 reflected in those two documents with Ms Ientile, but
43 then - and then we've got the recommendation going in in
44 2008, or live in 2007, but I guess I'm trying to understand
45 if you said - if you had at the time said, "Let's not go
46 ahead with this, it's not working, because the yield's too
47 low", on one hand, you are saying, "Well, even an automated

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1 yield is better than a Chelex yield because it might be low
2 but it's still better quality and we are getting results",
3 or what would - otherwise, what was the alternative?
4
5 MR NURTHEN: Was the status quo, which is that we don't
6 implement any of the - or any DNA IQ and you can --
7
8 THE COMMISSIONER: And go back to Chelex.
9
10 MR NURTHEN: No, we stay with Chelex, because we weren't
11 we hadn't ceased Chelex, but we don't get the --
12
13 THE COMMISSIONER: That was the alternative?
14
15 MR NURTHEN: But we don't get the benefits of the --
16
17 THE COMMISSIONER: Isn't there a tension between that and
18 the view you expressed that a bad result from the automated
19 system was still better than Chelex?
20
21 MR NURTHEN: I think that was my opinion because of the
22 quality coming out of DNA IQ, yes.
23
24 THE COMMISSIONER: There's a tension between saying, "I
25 formed the view that even a low yield was better than
26 Chelex", and saying, "Don't proceed", which means don't
27 automate and stay with Chelex. There's a tension between
28 those two conclusions, isn't there?
29
30 MR NURTHEN: I think I would have like to have ridden the
31 project out to get it all the way back up to so it was the
32 same or as - you know --
33
34 THE COMMISSIONER: Before implementing?
35
36 MR NURTHEN: Before implementing. But if having to
37 implement, there is still the notion where it is still
38 giving good quality DNA, with respect to Chelex, with
39 being, you know, dirty and needing to be cleaned up as
40 well.
41
42 THE COMMISSIONER: I think I understand. So your view
43 was, it wasn't ditch it completely, but wait till you
44 optimise it further before you transition to it?
45
46 MR NURTHEN: There is a trade-off and the trade-off is
47 that if you are going to implement the automated one, even

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1 with the lower yields, you were going to get some benefit
2 out of it, with respect to not implementing it and staying
3 with fully manual method and Chelex.
4
5 THE COMMISSIONER: But then you recommended not proceeding
6 with the automated one.
7
8 MR NURTHEN: Yes, because I would have preferred to have
9 got that method up first.
10
11 THE COMMISSIONER: Okay, thank you.
12
13 MR FOX: Now, the contamination issue, as you know, was
14 dealt with by the Sofronoff Inquiry, so we're not going to
15 relive that saga, but can I just ask you this: by the time
16 the contamination issue is believed to be resolved - that's
17 through independent audit and all the rest of it - what had
18 happened with the yield issue? Did anybody sort of turn
19 their mind to whether the cross-contamination point solved
20 everything, because you are on notice before the
21 contamination point arises in early 2008 that there's
22 a yield problem, but what was then in the mind of the
23 scientists in the lab at the time, knowing that there had
24 been previously a yield problem?
25
26 MR NURTHEN: I can't speak as to the scientists who did
27 that particular work. I know the idea was that whole - in
28 correcting the contamination, that basically meant that
29 whole method had to be pulled apart and rearranged and
30 redone entirely, and I think as part of doing that, this
31 efficiency plate went through to show that what we were
32 getting - what we were putting in was coming back out the
33 other end, if that makes sense.
34
35 MR FOX: Yes. I appreciate we're starting to get
36 ourselves into territory, once we get ourselves beyond the
37 middle of 2008 and into 2009, people then start - of the
38 seven members - either leave the organisation or splinter
39 off, can I just turn to those who are appearing virtually,
40 is there anything that you would like to indicate to
41 those - it is said that you were still around at the time -
42 as to once the contamination issue was resolved, why was
43 the yield, the previous yield issues, why was there
44 a belief that either they were resolved implicitly or what
45 steps were taken to resolve them?
46
47 Dr Hlinka, would you like to start?

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1
2 DR HLINKA: I remember that Desley Pitcher from
3 PerkinElmer came in at one time just to help with certain
4 issues around bubble formation and optimisation of
5 pipetting. I believe that occurred in October 2009, I'm
6 not quite certain. Maybe someone else can say when that
7 happened, I'm not absolutely sure. But there was a period
8 of time when we were just having possible problems with
9 bubble formation and just resolving any possible things
10 with pipetting and so on, just to get the program a bit
11 more streamlined.
12
13 MR FOX: Is there anything anybody else wants to
14 contribute on that? It was mentioned about bubbles being
15 formed, he has referred to that in his evidence about what
16 that is about. I appreciate we're going to come to
17 the April 2009 report, it's just really - we'll to get into
18 the detail of that in due course, but it really is just why
19 there is a believe that resolving contaminations means
20 that, okay, we had the problem before with yield, we've
21 kind of put that to one side for the moment, and then we'll
22 deal with contamination, but we've still got the elephant
23 in the corner of the room, so to speak, on yield.
24
25 MR NURTHEN: I think it was part of that process of
26 ensuring that there wasn't contamination, that they looked
27 at every step of that process and looked to optimise it,
28 which was - from what I understand, that mixing is the
29 critical component, the mixing of the resin is critical,
30 and after we saw the reimplementation, we had basically
31 carved off another of the automated parts of the process
32 off the robot to a manual component as well.
33
34 MR FOX: Now, October 2008 is when you finish your role in
35 the automation team.
36
37 MR NURTHEN: Yes.
38
39 MR FOX: You then move to the senior scientist quality and
40 projects DNA analysis, so did you finish all association
41 with automation at that point or did you continue to be
42 involved or --
43
44 MR NURTHEN: No, I think it was a loose association, that
45 if they needed me I would help them, and obviously I had an
46 interest in it anyway. But that wasn't my primary role
47 anymore, so someone else took after me, I think it was Iman

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1 took on that senior scientist role after me. So I would
2 assume I was still involved, but I wasn't the primary
3 person involved.
4
5 MR FOX: And Mr Muharam, would you like to just indicate -
6 you have listened to a bit of dialogue between your various
7 colleagues over the last few minutes. Would you like to
8 indicate whether you have got anything to say on this topic
9 of why, with contamination being resolved, it doesn't
10 necessarily mean that the yield problem identified earlier
11 had been resolved?
12
13 MR MUHARAM: I actually don't have a lot of recollection
14 of that period of time in the chronology of events that
15 followed, so I'm not sure if I can provide an answer here.
16
17 MR FOX: All right. We certainly won't ask you to
18 speculate.
19
20 I'm going to move to a new topic, which is the
21 Project 13 report, if that's convenient and no-one else has
22 any questions.
23
24 So we turn to the report. I think it's collectively
25 agreed that it's a draft, it certainly has its gaps and
26 question marks and red highlighting and the rest of it.
27 But Mr Nurthen, you have managed to uncover - you've
28 referred to this at paragraph 76 of your main declaration -
29 10 different versions of that. And then Ms Gallagher,
30 you've managed to produce four different versions of the
31 standard operating procedures, so we have - we have talked
32 previously, before, about the SOPs and their role.
33
34 Can I just ask this, is it, in terms of the
35 explanation that is given that - Mr Nurthen, you have
36 ventured into this territory to try and explain why there
37 is the disconnect between the abstract and the conclusion
38 that is expressed there and the data that is in the body of
39 the document. Would you just mind explaining how you work
40 through that process? I think you look at version number 1
41 and say that it's a historical carry-on.
42
43 MR NURTHEN: Yes, so when I looked at that version number
44 1 and I was looking at the author list and going, "Well,
45 why would we change the order of the author list if that's
46 what we thought it was", and then when you start reading
47 through the body and get further down through version 1 of

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1 that project, there starts to be phrases in there that
2 don't relate to automated extraction at all and that refer
3 to automated quantitation set-up.
4
5 So I did the next thing, which was look for that
6 particular report, which was report 1, and then make a
7 comparison between the two - between version 1 of
8 Project 13 and report 1, and it would appear that that was
9 the template used for the first draft of that document.
10
11 MR FOX: One can engage in speculation as to why version 1
12 would have a conclusion like that stated, and then testing
13 occurs and processes occur thereafter and drafts are
14 produced, which take the document in a different -
15 potentially down a different path, but do you have any -
16 other than drawing attention to the fact that it was there
17 at the very beginning in the version 1, any understanding
18 as to why that would have been said, that is, stated at
19 all, in such an early document?
20
21 MR NURTHEN: Because that's what came out of report 1. It
22 was copied as a template and that wording hadn't been
23 changed when that document draft started. It's word for
24 word come out of report 1.
25
26 THE COMMISSIONER: Just to make it clear, you are talking
27 about the abstract.
28
29 MR NURTHEN: Yes. It's come out of - so report 1, if you
30 look at the abstract for report 1, which is the validation
31 for automated quantitation, that wording is the wording
32 used within that document.
33
34 THE COMMISSIONER: Except for the last sentence, I think.
35
36 MR NURTHEN: Yes, I think there are slight substitutions,
37 but --
38
39 THE COMMISSIONER: The last sentence is the recommendation
40 of the use of the MultiPROBE that ultimately ended up, that
41 wasn't in report 1.
42
43 MR NURTHEN: Probably not, but like I said it was a draft
44 that had been started, just been copied word for word for
45 word, or that whole document, and then started to be
46 substituted, there's different colours in there indicating
47 that was going to be the template of which we were working

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1 off, and then the data was going to be put in there, is
2 what I would imagine.
3
4 MR FOX: No-one is asking you to speculate. In giving
5 that answer, you have endeavoured to try and explain the
6 different versions that you have read; is that right?
7
8 MR NURTHEN: Yes.
9
10 MR FOX: And put what you believe is the most likely
11 reason for it being in that form?
12
13 MR NURTHEN: Yes.
14
15 MR FOX: Do any of you who have - these are the named
16 authors now, and I appreciate some people regard themselves
17 as named in spirit more than in writing - but does anybody
18 have a version of events that is different to that that has
19 been uttered by Mr Nurthen as his explanation as to how
20 this came about?
21
22 DR HLINKA: No.
23
24 MS GALLAGHER: No.
25
26 MR MUHARAM: No.
27
28 THE COMMISSIONER: Can I clarify a couple of matters. I
29 see there are some "no"s. There are a couple of matters
30 with that. As I understand it, there were numerous
31 versions of this Project 13 draft report; right?
32
33 MR NURTHEN: Yes.
34
35 THE COMMISSIONER: And I also understand from the evidence
36 that the abstract was not in version 1. Or was it? Was
37 the abstract always there?
38
39 MR NURTHEN: Yes, it was. There was an abstract in there.
40
41 THE COMMISSIONER: An abstract?
42
43 MR NURTHEN: Yes.
44
45 THE COMMISSIONER: So the abstract was always there?
46
47 MR NURTHEN: An abstract, yes.

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1
2 THE COMMISSIONER: How did no-one pick it up as the
3 various versions were implemented?
4
5 MR NURTHEN: Because it was a draft document, well,
6 I think that it was something that whoever was writing it
7 always knew that the abstract is the last thing you do.
8 You go through and write the body of the document, then you
9 go back and write the abstract. Like I said, I think it
10 was a placeholder. This document had been used as
11 a template, and because that document was never finished,
12 that abstract was never gone back and altered.
13
14 THE COMMISSIONER: I see. I understand. Okay.
15
16 MR NURTHEN: If it had been altered, it hadn't been
17 altered in substantial ways.
18
19 THE COMMISSIONER: It was there as a sort of a - it was
20 just a previous version of an abstract to say this is where
21 you put an abstract?
22
23 MR NURTHEN: Yes.
24
25 THE COMMISSIONER: And yet Dr Hlinka, I think you say when
26 you - I think you were not part of the drafting of this.
27 I think you said you were in Germany and asked to look at
28 the paperwork when you came back; is that right?
29
30 DR HLINKA: I'm having real troubles, I definitely read
31 parts of it.
32
33 THE COMMISSIONER: You did.
34
35 DR HLINKA: I'm sure of it, yes. But I'm not sure
36 (indistinct) --
37
38 THE COMMISSIONER: But I also think - sorry.
39
40 DR HLINKA: Sorry, I --
41
42 THE COMMISSIONER: I also think you said in your evidence
43 that when you read the abstract, you read the sentence that
44 said data indicate the results from the automatic procedure
45 are comparable to those in the manual procedure - you read
46 that as referring to profiles. I think that was your
47 evidence, was it? You didn't see the inconsistency between

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1 that and the yield data?
2
3 DR HLINKA: No, that's correct. I think the profiles
4 themselves were okay. Maybe it was later, the profiling,
5 I'm not sure, but that's correct. I think it was based on
6 primarily the profiling data.
7
8 THE COMMISSIONER: Thank you. Yet Mr Nurthen, I think you
9 said when you read it, you realised it was totally
10 inapplicable?
11
12 MR NURTHEN: Yes, I think once I saw "Report 1" and saw
13 that it was, you know, verbatim, that section on
14 comparable, I think that's when I went, "Oh, okay, that
15 wasn't referring to anything within the automated, it was
16 referring to the QuantiFiler report", but it hadn't been
17 updated with respect to the automated DNA IQ.
18
19 THE COMMISSIONER: When you look at the Project 13 paper
20 today and you see that sentence in the abstract, is that
21 a valid conclusion as to the content of the paper?
22
23 MR NURTHEN: No, because I think it's contradicted by the
24 results further down in that body of the actual work.
25
26 THE COMMISSIONER: Does anyone else want to comment on
27 that? No? Okay.
28
29 MR FOX: So the question posed collectively to those
30 present and those virtually - and I just ask people to
31 indicate by saying no or yes, in the sequence that we have
32 done, we will deal with the people live first and then
33 those who are virtually - but nobody has any recollection
34 of who actually wrote the abstract; is that right?
35
36 MR NURTHEN: Which version of the abstract?
37
38 MR FOX: The version in the Project 13 document that is
39 the one that is causing the issue - I call it the --
40
41 THE COMMISSIONER: That sentence.
42
43 MR FOX: That sentence.
44
45 MR NURTHEN: I think that is fully derived from report 1.
46 It seems to be copied directly and not applicable to that
47 project at all.

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1
2 MR FOX: So your answer is you don't know who actually
3 wrote the sentence?
4
5 MR NURTHEN: If it has come from report 1, it has come
6 from the author of report 1 but doesn't apply to
7 Project 13.
8
9 MR FOX: And that's the best you can say?
10
11 MR NURTHEN: Yes.
12
13 THE COMMISSIONER: Does anyone disagree that they have -
14 somebody has some knowledge as to who, other than what
15 Mr Nurthen has indicated?
16
17 MR McNEVIN: I have no recollection.
18
19 MS IENTILE: No knowledge.
20
21 MR MUHARAM: No knowledge.
22
23 MS GALLAGHER: No knowledge, sorry.
24
25 MR FOX: And is anyone aware whether the report was ever
26 finalised?
27
28 MR NURTHEN: I'm not aware of it being finalised.
29
30 DR HLINKA: I think it was, actually, one last, but -
31 there was a period when Tom had a meeting, two meetings,
32 and we were looking for the final copy. We couldn't -
33 that's what I think I recall, and we couldn't actually find
34 the final copy, and he was rushing to go off to another
35 meeting, so we - the choice made by Tom was take one of the
36 draft copies that were present for the presentation that
37 was being made at the time. If --
38
39 MR FOX: When you say - you go.
40
41 DR HLINKA: If it had been finalised, it would have had
42 proper referencing and everything. The document presented
43 to me by the Inquiry is not a final document. It's just
44 missing proper references, it has got flags that I've put
45 in there, like after (indistinct), the question marks that
46 indicate that a reference must be obtained. There's also
47 another inconsistency, and there's another flag I put in

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1 indicating that it's a completely draft document, what the
2 Inquiry has, and I do believe --
3
4 THE COMMISSIONER: Can I ask a question.
5
6 DR HLINKA: I do believer have there was a final document;
7 it's just that it somehow vanished.
8
9 THE COMMISSIONER: Let me try and ask a question. You are
10 the first named author. Who wrote the paper? Who wrote
11 the report?
12
13 MR NURTHEN: I don't think anyone wrote one - like, the
14 whole of the report. I think it was someone might have put
15 out one section, someone might have put in another section.
16
17 THE COMMISSIONER: I think Dr Hlinka says he recognises
18 that he wrote - Dr Hlinka, you wrote some of the material
19 for that report, as I understand you saying?
20
21 DR HLINKA: Yes, that's correct. But the reference style
22 at the back, the one reference that is given, that's in my
23 particular template.
24
25 THE COMMISSIONER: Right. So you were responsible at
26 least for some of the data and the writing up of that data
27 and I assume in the results and discussion section, and
28 maybe the methodology section? Who wrote the - for
29 example, does anyone recollect who wrote the introduction?
30
31 DR HLINKA: No.
32
33 MR NURTHEN: Like I said, part of that introduction had
34 been taken from the other report, from report 1 --
35
36 THE COMMISSIONER: No, this is actually - the introduction
37 says it was - it's about the MultPROBE.
38
39 MR NURTHEN: Sorry, the introduction.
40
41 THE COMMISSIONER: Not the abstract, sorry. I'm just
42 trying to break it down a little bit. I think Dr Hlinka,
43 as I understand it, says that he wrote at least parts of
44 the methodology and the results, I'm assuming, as the - is
45 that correct?
46
47 DR HLINKA: I'm not sure who wrote the results actually

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1 but the data had to come from somewhere.
2
3 THE COMMISSIONER: Well, do you recall providing some of
4 these data?
5
6 DR HLINKA: No. I don't actually. Sorry.
7
8 THE COMMISSIONER: No worries. Back to Mr Nurthen. Do
9 you have any - I mean, if you don't have a recollection,
10 you don't have a recollection, but do you have
11 a recollection, for example, as to whether you wrote the
12 introduction, not the abstract but the introduction?
13
14 MR NURTHEN: No, I don't, but I think it's unlikely that
15 I wouldn't have authored something within that document.
16
17 MR FOX: Does anyone have a similar recollection to
18 Mr Nurthen's - that is, they don't think they can point to
19 the part that they would have written, but they would have
20 written part of it?
21
22 Dr Hlinka? I think you indicated before you've
23 contributed to some of it?
24
25 DR HLINKA: I think I have already said everything.
26
27 THE COMMISSIONER: I think he said that.
28
29 MR FOX: Yes. Mr Muharam, do you have any recollection of
30 writing any part? If you can't point to --
31
32 MR MUHARAM: No, actually, I don't recall - I don't have
33 the recollection of writing particular parts. I can
34 comment that some of the content is in a format that I'm
35 not familiar with, as in the sort of format where I would
36 have, you know, done it in that way.
37
38 MR FOX: Ms Gallagher?
39
40 MS GALLAGHER: I don't recall participating in writing
41 anything for the report. I had left by May of 2008, so
42 depending upon when this report was started, I may not have
43 even been still with the laboratory at the time.
44
45 MR FOX: Thank you. Now, the document is dated August
46 2008. Is the only explanation to that the fact that it is
47 in a sequence of different versions and each one has

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1 a subsequent date - is that the only logical reason why it
2 would bear that date, Mr Nurthen,
3
4 MR NURTHEN: Why it bears August 2008?
5
6 MR FOX: Yes.
7
8 THE COMMISSIONER: And not earlier.
9
10 MR NURTHEN: I just think it was being added to constantly
11 and that might have been the date at which that draft -
12 because I think that's in several of those drafts. If you
13 go back, August 2008 is somewhere in amongst that, and that
14 might have been the particular date that the document was
15 picked up and added to.
16
17 MR FOX: Dr Hlinka, earlier on you indicated that you
18 thought that the report might have been finalised.
19
20 DR HLINKA: Yes.
21
22 MR FOX: And you recall - you said that there had been
23 a couple of meetings that you'd had with Mr Nurthen about
24 that. Do you have any recollection of what that date - you
25 go --
26
27 DR HLINKA: No, it was the date that yield issues were
28 being presented to either the team scientists - I think
29 actually it was the day that Iman was giving a talk, to
30 either the team scientists or the automation team,
31 I believe.
32
33 MR FOX: So you can't give us any indication of what date
34 or around approximately what date that might have been?
35
36 DR HLINKA: I can't recall what that date was, no. You
37 would have to look at the records for that time period to
38 be certain.
39
40 MR FOX: Thank you.
41
42 Mr Nurthen, I appreciate you have only heard that for
43 the first time, but do you have any observations or
44 comments to make in relation to what Dr Hlinka has said
45 about he thinks that the report might have been finalised
46 and he referred to conversations with you?
47

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1 MR NURTHEN: Yes, I don't recall it ever being finalised
2 because other reports that we had finalised at the time had
3 been printed and bound, and I think if you look at the
4 copies of some of those ones you received for 21 and 22,
5 you can see the bindings on the side. I think when we
6 looked - again looked to try to find a final copy, we
7 couldn't locate a printed version of it. And then again,
8 looking at the actual body of the document, it would appear
9 to be midway through sentences, it's been stopped. So
10 I can't imagine it being finalised.
11
12 DR HLINKA: It's not a polished final copy.
13
14 MR FOX: No.
15
16 DR HLINKA: It's (indistinct - simultaneous speakers) --
17
18 MR FOX: Thank you, Dr Hlinka.
19
20 Mr Muharam you, have heard a moment ago that your name
21 was mentioned. Would you like to respond at all to what
22 was said?
23
24 MR MUHARAM: I believe you are referring to Dr Hlinka's
25 comment earlier?
26
27 MR FOX: That's right.
28
29 MR MUHARAM: I actually don't recall that in the events,
30 actually, so yes, I probably can't contribute information
31 to that one. But as I think - as per the comments of
32 others, I think we're all on the same page that the
33 document that we have been presented with is - you know, it
34 really does look like it's a draft copy and not the final
35 copy, and fact that we haven't been able to locate a final
36 one, I'm not sure exactly what that means, but at least the
37 document that we have looks like it's incomplete.
38
39 So in terms of the conclusions I guess we can make
40 from that document, you know, that - yeah, that's what
41 we're discussing today. But I think we all agree that it
42 is a draft.
43
44 MR FOX: Thank you. While you're answering questions, do
45 you recall, even though it was a draft document, do you
46 recall it being distributed in any way, whether within the
47 laboratory or to any external organisations?

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1
2 MR MUHARAM: To the best of my recollection, I don't
3 recall, you know, I guess, myself distributing the report,
4 or it being distributed to anybody. But having said that,
5 I mean, a lot - all the documents were on the lab's server,
6 right, so anyone in the lab could have access to it, for
7 example. But whether it was distributed in an official
8 capacity I cannot recall, I don't remember.
9
10 MR FOX: Thank you.
11
12 Ms Gallagher, I appreciate you left after at least the
13 August date that's referred to here, but just in terms of
14 any prior drafts of the Project 13 report, you don't recall
15 distributing it yourself or anybody that you worked with,
16 whether within the lab or to an external organisation?
17
18 MS GALLAGHER: I believe I stated in my statement earlier
19 that I don't even recall seeing a draft of Project 13, as
20 it's being discussed, in my time within the lab. So no,
21 I wouldn't have distributed it to anybody internally or
22 externally.
23
24 MR FOX: Thank you.
25
26 Dr Hlinka, do you have any recollection of either
27 yourself or any of your colleagues distributing it
28 outside - within the lab or to an external organisation?
29
30 DR HLINKA: I think it was done early and kept on the
31 internal hard drive so that anybody from DNA analysis or
32 any team scientist or any management staff member could
33 actually go into that folder and locate it if they needed
34 to. I do not remember actually any physical distribution
35 of a document as per se. Most likely - no, I shouldn't
36 really speculate. I won't speculate.
37
38 MR FOX: No, we won't ask you to speculate.
39
40 Then the three who are present here, obviously the
41 same question. Does anyone have any recollection of either
42 themselves distributing it within the lab or to an external
43 organisation? Ms Ientile?
44
45 MS IENTILE: I have no recollection of ever seeing it
46 until this event.
47

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1 MR FOX: Thank you.
2
3 MR NURTHEN: No, I don't recall distributing it because it
4 wasn't finished. I don't think even if it - well, being it
5 wasn't finished, I can't imagine I would have circulated
6 it. I have no recollection of circulating it.
7
8 MR FOX: Mr McNevin, just for the sake of completeness?
9
10 MR McNEVIN: No, no. I don't think we got in the habit of
11 distributing project reports until much later anyway.
12
13 THE COMMISSIONER: I have one question about it, though,
14 still. Just one thing. I understand that the abstract was
15 probably a placeholder, as your evidence is, most likely,
16 because it was the same as the abstract in report 1. But
17 bearing in mind that you and Ms Ientile had a conversation
18 about whether or not you would go ahead, this version of
19 Project 13 does have a sentence added to the abstract that
20 is peculiar to this - to the work of the MultiPROBE rather
21 than report 1, because it says:
22
23 *We recommend the use of the MultiPROBE to*
24 *perform automated DNA extraction using the*
25 *DNA IQ system.*
26
27 And at the back under the summary of recommendations, it
28 recommends the use of it for reference samples, for
29 automatic extraction of casework samples, and consistently
30 with the conversation that is noted in that note, "ongoing
31 development of the automated extraction program to increase
32 the efficiency of extraction".
33
34 So this version of Project 13 obviously took account
35 of the various work that you have done and so much
36 specifically in relation to this and the recommendation is
37 recorded in there.
38
39 MR NURTHEN: I can only assume, because looking at the
40 dates at which those versions were recorded, the only
41 version that we've got that is prior to going live is that
42 version point 1, and the subsequent versions after that are
43 in 2008, well and truly --
44
45 THE COMMISSIONER: Which is after it went live.
46
47 MR NURTHEN: Yes. So I can only assume that that was

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1 after the fact.
2
3 THE COMMISSIONER: Okay.
4
5 MR NURTHEN: Based on that information.
6
7 THE COMMISSIONER: Thank you.
8
9 MR FOX: I don't have any further questions about this
10 particular document because everybody is in heated
11 agreement that no-one really understands where it has come
12 from and - other than what we have heard in terms of the
13 explanation.
14
15 THE COMMISSIONER: It's an orphan.
16
17 MR FOX: Never finalised, never distributed. I don't know
18 whether any of the other legal parties wish to ask any
19 questions about it.
20
21 THE COMMISSIONER: After having all of those questions,
22 unless any of the witnesses wish to volunteer anything
23 extra in relation to the Project 13 document or Project 13?
24 No.
25
26 MR FOX: If we can then move to the next topic, and this
27 is the last, I think, of the major topics and the other
28 topics are shorter. This is in terms of the reintroduction
29 of the automated DNA extraction system using the MultiPROBE
30 device. Now, can we start with this, and that is just in
31 terms of people's general recollections of the
32 circumstances in which the automated DNA system came to be
33 reintroduced. Now, I appreciate that there was the April
34 2009 reimplementation report, but I just want to put that
35 to one side for the moment.
36
37 Perhaps I will just put it this way. Anybody wishes
38 to start off the discussion, I appreciate, Ms Ientile, you
39 had the fortunate position of being able to say "I wasn't
40 there" and you will adopt that position, but just looking
41 to understand what people do recall about the
42 reintroduction of the automated system itself - that is,
43 it's been offline because of the contamination issue, but
44 there then needed to be a level of satisfaction that it
45 could be brought back online. So just with that topic,
46 I just wanted to explore with you what people's
47 recollections were about it.

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MR NURTHEN: I can recall that part of that reimplementation obviously goes back into diagnosis of what the original contamination problem was, and that wasn't an easy thing to do, and that required a fair bit of testing to come to some sort of confident solution as to what was causing it, which meant then working out how to fix it. So I can recall that being a fair focus of leading up to the reimplementation, and then having possibly identified that, rebuilding the whole protocol so as to deal with the contamination and then checking what that efficiency was before it was reimplemented, to give confidence to all of the scientists, which I know were very concerned of - due to the contamination in the first place, very concerned with reimplementing automated DNA IQ, and when it was reimplemented it wasn't a - it was a stage-wise reimplementation where samples were surrounded by blank samples initially, what we call a Soccerball format, to ensure that we best captured if there was contamination by having blanks all around it, so it was a very measured approach to reimplementing, knowing that we weren't going to get all those benefits of throughput, but it was a way of ensuring that we could reimplement and have confidence in the implementation.

MR FOX: Mr Muharam, your name is on that 2009 reimplementation report, so perhaps it's presumptuous of me to say that you must have some knowledge, but your name is on the report. Is there anything you can contribute further to what Mr Nurthen has said just by way of introduction to this topic?

MR MUHARAM: I can't, actually. Even though my name might appear on the report, I mean, I cannot independently recall the details, however, I did also depart the lab, I ceased employment at the lab, you know, around January of 2009, and I believe the reimplementation came after that. So in terms of, you know, finalising the work or the report, you know, I was probably not there at the time.

MR FOX: Right. But do you recall in your work prior to January 2009, because the reimplementation presumably was something that was considered over a period of time, it wasn't an instantaneous decision made to do it, but do you recall being involved in what I'll call the preparatory work for reimplementation of the automated system?

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MR MUHARAM: Mr Nurthen mentioned just now the Soccerball format, for example, so I have recollection of pieces of information like that. Like, it was an --

MR FOX: What's your --

MR MUHARAM: -- approach, there were some considerations. I do recall there were concerns from members of the lab, obviously, in terms of the reimplementation itself, but I cannot recall the detail.

MR FOX: Thank you. Now, if we could just go to the reimplementation report, this is annexure TM32, and it's item 29 in the tender bundle list. Now, can I start with just on page 2 of that document, it's 611 of 639 of Mr Nurthen's statement, and in the fifth paragraph, which starts with:

> *The automated DNA IQ protocol was reviewed ..*

It says it was reviewed internally and also externally by the PerkinElmer National Liquid Handling Specialist, and the necessary changes made:

> *Some of the changes included modifications to dispense heights; optimisation of scan, aspirate, dispense and retract speeds; insertion of post-dispense transport air gaps to remove bubbles; and the removal of flush protocols. A report of the observations was made available to DNA Analysis (Pitcher, 3 October 2008).*

I will direct this question firstly to Mr Nurthen because it is relatively minor, you may be able to resolve it swiftly. Where in the second line of that paragraph it refers to "the PerkinElmer National Liquid Handling Specialist" is that Desley Pitcher who is referred to in the last line?

MR NURTHEN: Yes.

MR FOX: So you recall Desley Pitcher attending upon the lab to assist in making some modifications to the device; is that right?

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1 MR NURTHEN: Not modifications per se. This is where we
2 move into the actual programming of the robot and those
3 changes that I was saying that we can't look into the
4 actual program. So where we had difficulty, and I think Al
5 would be able to explain this as well, that when we first
6 got the robots, even for the amplification and
7 quantification, things like the aspirate and dispense
8 speeds are something that you need to optimise in-house, so
9 I know we've been in touch with Desley before. What
10 I recall is there was a whole lot of work that had been
11 done by Kieran with respect to looking at contamination and
12 preventing the contamination. We then asked Desley to come
13 and look at what we had done. She recommended some
14 changes, of which we made, and then there was more testing
15 done and more changes made, and then she did some more
16 review, is what I recall.
17
18 MR FOX: And the person you just referred to there as
19 Kieran, surname?
20
21 MR NURTHEN: Webber.
22
23 MR FOX: Thank you. Do you recall when that - when that
24 sort of modification or adjustment work was being done,
25 with any precision?
26
27 MR NURTHEN: No.
28
29 MR McNEVIN: I think those October and November dates are
30 fairly indicative of when we were doing a lot of that work.
31
32 MR FOX: Right. Now --
33
34 THE COMMISSIONER: Can I just ask some questions about the
35 background of this and then go straight to a couple of
36 others that I have, before you hit the deck, Mr Fox.
37
38 The abstract, of course, talks about the adverse
39 events identified in the laboratory, et cetera, and then at
40 the last bit it talks about improvements to the extraction
41 procedures, so that's what this was really about. As
42 I read page 2, it's a bit historical as to what has
43 happened to some degree, because you've got validation of
44 the manual DNA IQ method commenced in April 2007. You talk
45 about Project 9, Project 11, not in those terms, but by
46 words, some of the validations that you said you did. Then
47 you talk about the contamination issues that arose, and

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then, you know, you deal with the automatic protocol was reviewed internally.

But the purpose of this, it seems to me, was then to move on to what you then deal with, further enhancement and changes to the protocol were made to increase efficiency and further the well-to-well cross-contamination events. So you have raised efficiency fairly and squarely here, because that was still a problem?

MR NURTHEN: I think it was assumed that what we had done wouldn't necessarily fix everything. It may have, but I think this was the opportunity that when they were looking at how to prevent the contamination, you would have to assess the efficiency coming back out the other side as well.

THE COMMISSIONER: You also say, if you go over to page 4, just after figure 2:

> *These changes were tested in order to determine the sensitivity and the efficiency of recovery of the new protocol.*

So am I right in saying that was directed to the recovery of DNA?

MR NURTHEN: Yes, because the protocol had changed, which is when it changed significantly from that first version, and this was about assessing what impact that had on the final recovery.

THE COMMISSIONER: If I can understand what was tested here and how you did it, this seems, if I can read this correctly - and please forgive me, please correct me if I'm wrong - when you get to 6.2, you talk about the fact that you used male human genomic DNA and then you assessed the recovery of that through the process and you got a hundred per cent, basically. That really functions, doesn't it, as a positive control, in effect? If you take a known amount of DNA, you put it through the system, and then you end up with - you test your result against that known control.

MR NURTHEN: It really is an efficiency positive control, because when you do something like blood or cells, without any sort of confidence you can't say what you would expect to get back out.

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1
2 THE COMMISSIONER: I understand. I understand that. So
3 what you are testing here is whether or not, when you start
4 with the known amount of DNA, you end up with what point
5 your efficiency is, and you got a good result.
6
7 MR NURTHEN: Correct. Correct.
8
9 THE COMMISSIONER: But it doesn't test, does it, any
10 problems you might have had in the extraction procedure?
11
12 MR NURTHEN: Within the lysis procedure?
13
14 THE COMMISSIONER: For the lysis procedure.
15
16 MR NURTHEN: It doesn't test the lysis procedure, no.
17
18 THE COMMISSIONER: So this is testing, once you have
19 got your - well, let me ask you a question, I haven't read
20 with that because I hadn't heard your evidence there. You
21 were saying earlier that part of the problem was the going
22 on to the beads and off the beads. Does it test that?
23
24 MR NURTHEN: Yes.
25
26 THE COMMISSIONER: Okay. So this tests after you have
27 conducted the lysis step - this is not to deal with that
28 step --
29
30 MR NURTHEN: Yes.
31
32 THE COMMISSIONER: -- and the efficiency of that and
33 extracting DNA from the sample, but it does deal with the
34 fact that you then take the lysate and you put it on the
35 beads.
36
37 MR NURTHEN: Yes.
38
39 THE COMMISSIONER: The eluted lysate --
40
41 MR NURTHEN: What I think is --
42
43 THE COMMISSIONER: -- sorry, the dissolved, and spun-down
44 lysate, and you put that on the beads. This tests for the
45 efficiency of on and off the beads?
46
47 MR NURTHEN: Yes, which I think is the critical step

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1 within the process.
2
3 THE COMMISSIONER: But if you had a problem in the lysis
4 procedure, this doesn't go to that?
5
6 MR NURTHEN: Correct. But I didn't think there was
7 a problem with the lysis procedure.
8
9 THE COMMISSIONER: No, I understand that. I'm just trying
10 to work out what this validated.
11
12 MR NURTHEN: Yes. Because if you had put on some blood
13 and not knowing the exact number of cells that you are
14 putting in, even if you do a cell count, you can't really
15 know what the exact efficiency is.
16
17 THE COMMISSIONER: Not unless you have five different
18 methodologies testing that blood to try to equate them to
19 see if you have got some sort of picture out of that.
20
21 MR NURTHEN: But even out of that it's a theoretical
22 yield, and if I can refer you to Project 11, there's
23 a table within that where we get yields of 284 per cent,
24 because what we thought we were putting in, we were
25 obviously putting in more, because you shouldn't be getting
26 284 per cent out. So what I recall is that this was a way
27 to assess that bind and release with the knowledge of
28 knowing you are putting on X amount and you're getting X
29 back off.
30
31 THE COMMISSIONER: So I think you used the expression
32 earlier sort of a positive efficiency control.
33
34 MR NURTHEN: Yes.
35
36 THE COMMISSIONER: Okay, I think I understand that now.
37 Thanks.
38
39 MR FOX: That was the main point of --
40
41 THE COMMISSIONER: But you then reintroduced this
42 methodology. Did you have a degree of confidence then in
43 reintroducing it?
44
45 MR NURTHEN: Yes.
46
47 THE COMMISSIONER: Have you had problems with DNA recovery

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1 or lots of samples of not sufficient DNA recovered since
2 this was reintroduced?
3
4 MR NURTHEN: Well, it was reintroduced in 2009 and ceased
5 in 2016.
6
7 THE COMMISSIONER: Is that when you went to the Maxwell?
8
9 MR NURTHEN: The Maxwells got implemented in 2010 or 2011.
10
11 MR McNEVIN: Something like that.
12
13 MR NURTHEN: -- at least for some --
14
15 THE COMMISSIONER: Was that when you ceased using - did
16 you cease using the MultiPROBE then?
17
18 MR NURTHEN: No, not then, not until 2016, there were --
19
20 THE COMMISSIONER: That's what I mean, sorry. So 2016 you
21 ceased using the MultiPROBE?
22
23 MR NURTHEN: Yes, that's what I understand.
24
25 THE COMMISSIONER: So between this test and 2016 you were
26 using the automated procedure on the MultiPROBE.
27
28 MR NURTHEN: To some capacity in the laboratory it would
29 have been being used, yes.
30
31 THE COMMISSIONER: On-deck or off-deck lysis?
32
33 MR NURTHEN: Only off-deck lysis. That on-deck was
34 never - and this reimplemented version, which is 6.5, 6.6,
35 6.7, would have only been in the laboratory since 2009. So
36 I have confidence, so since 2009, based on these results,
37 that it is efficient, that what we're presenting to the
38 machine, it was binding and releasing that DNA.
39
40 THE COMMISSIONER: And have you had any evidence before
41 you within the laboratory setting since this was
42 reintroduced of problems with DNA recovery?
43
44 MR NURTHEN: I don't know how you would assess if there
45 was a --
46
47 THE COMMISSIONER: Systemic problems, I don't mean ad hoc

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1 individual problems with one sample, but have you had any
2 indication that there has been a systemic or systematic
3 lack of recovery of DNA?
4
5 MR NURTHEN: I can only recall one time when there was
6 what appeared to be a systemic problem and that was where
7 the Queensland Police had changed the swab type. They had
8 changed the swabs that they were using to collect the DNA
9 and hadn't advised us, and I can recall that swabs that had
10 been described as being blood positive weren't yielding any
11 results at all, and that's the only time I can recall.
12
13 And then there was some investigation looking into
14 yields at that particular time, but other than that I can't
15 recall any other time. It's a bit hard to assess to know
16 whether or not, like I said, the sample you're getting,
17 whether it's got sufficient DNA to when you get out the
18 other side to go, "That definitely equates to that."
19
20 THE COMMISSIONER: Yes. But if that - I mean, you can get
21 an individual case where there's a problem, but if the -
22 I mean, I was asking whether, if you are using the same
23 method over a number of samples and you keep getting bad
24 results or not sufficient DNA, then you start thinking it's
25 the system, not the sample --
26
27 MR NURTHEN: Yes, I --
28
29 THE COMMISSIONER: -- but have you had any such results
30 that indicate that there is a systemic problem?
31
32 MR NURTHEN: I would have to say that the staff within
33 analytical, who are looking - so part of the process would
34 be that every batch would have an extraction positive
35 control that would be analysed all the way through the
36 system and when it got to the capillary electrophoresis,
37 which is the separation stage, the profile would be
38 assessed then.
39
40 MR McNEVIN: Mmm.
41
42 MR NURTHEN: But would the quantitation --
43
44 THE COMMISSIONER: Sorry, just to understand that, so what
45 you are saying is that when you run it, you always run
46 a positive control?
47

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1 MR NURTHEN: Yes, with every extraction batch, and
2 a negative.
3
4 THE COMMISSIONER: That would show if you were having - if
5 the machine was not recovering DNA.
6
7 MR NURTHEN: If it hadn't been consistently recovering
8 DNA, I would assume those positive controls to be
9 consistently failing.
10
11 THE COMMISSIONER: Missing? Missing in action, yes.
12
13 MR NURTHEN: And that that would have been raised within
14 analytical, because any time anything didn't conform, there
15 would be a batch note associated with the batch, to say,
16 "We didn't get any DNA". I can recall seeing that comment
17 for things like differential lysis controls where the semen
18 within the Chelex method often didn't give a DNA profile
19 that needed to be cleaned up afterwards. I can recall that
20 being a common --
21
22 MR MCNEVIN: Yes
23
24 MR NURTHEN: -- comment against differential lysis ones,
25 so I --
26
27 THE COMMISSIONER: But I guess my question is, once this
28 was reimplemented, is the understanding correct that
29 whenever you ran a test through it, you ran a negative and
30 a positive control?
31
32 MR NURTHEN: Yes.
33
34 THE COMMISSIONER: Thank you. Anyone else want to -
35 I don't know if anyone else wants to comment on that? No?
36 Okay, back to you, Mr Fox.
37
38 MR FOX: Mr Nurthen, you may not have this recollection,
39 but I'm just looking at part of - I appreciate this is in
40 a report and you may not have seen, this is Professor Linzi
41 Wilson-Wilde's report that she provided. She has a table
42 at paragraph 36 which indicates that on 20 August 2009,
43 "DNA IQ on MP II reimplemented", and then observations made
44 "off-deck lysis". That doesn't suggest fully automated,
45 but what is - assume that's correct, but do you have any
46 recollection of it being off-deck lysis that was actually
47 being reintroduced in August 2009?

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1
2 MR NURTHEN: Yes, I think it actually describes the
3 method. Within the actual body of this report, further
4 down it will actually describe - sorry, within that
5 reimplementation documentation should actually describe the
6 method by which it was occurring, which would describe as
7 an off-deck lysis procedure.
8
9 MR FOX: Right, thank you.
10
11 MR NURTHEN: But it also involved, as part of that
12 procedure - and this is what I was saying, the mixing is
13 really important and it's raised within this report that
14 the mixing of the resin is no longer on the deck of the
15 robot, it's physically removed, put on a separate
16 instrument and mixed on a separate instrument before being
17 put back on to the robot. So like here I said that it's
18 been carved off again, it's less automated again.
19
20 MR FOX: Okay. When the Commissioner asked you some
21 questions a minute ago about the process that had been
22 reintroduced having no problems, et cetera, is that by
23 reference to what you've just described then, off-deck
24 lysis, or did it go to the full automation?
25
26 MR NURTHEN: No, we never reintroduced full automation
27 again, it was always off-deck lysis and modifications to
28 the off-deck lysis.
29
30 MR FOX: Thank you. I wanted to be clear about that.
31 I don't have any further questions about that, given the
32 nature of the evidence that has been given.
33
34 THE COMMISSIONER: I don't see anyone else jumping madly
35 to their feet.
36
37 MR FOX: Not this time. Can I then move to a subtopic but
38 we're now in post reintroduction world, and this is Project
39 70, which is in 2011. This document is at tab 28 or item
40 28 of the bundle.
41
42 Now, Mr McNevin, your name is on this document.
43
44 MR McNEVIN: Mmm-hmm.
45
46 MR FOX: Would you by way of introduction explain what the
47 purpose of Project 70 was?

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1
2 MR McNEVIN: Yes. Project 70 and some subsequent projects
3 were looking at verifying the Maxwell 16 MDx, I think it
4 was, instrument, which is a DNA IQ chemistry but the
5 Maxwell instrument is - in comparison to the MultiPROBEs,
6 which are quite customisable, is a plug and play type
7 instrument. You get your reagents, they're in a cartridge
8 form, they are in an individual strip, and all of the
9 pipetting steps and movement within the instrument is all
10 locked down, you can't modify it. You perform similar -
11 sorry, I have trouble with that word. Like the other
12 method, it has an off-deck lysis component, then you add
13 that lysate to the individual strips and the Maxwell
14 instrument goes along and does its business with those
15 strips.
16
17 So it's called a 16 because it has 16 slots for
18 16 samples, which in practicality means 14, because you
19 have 14 samples and a positive and negative control.
20
21 MR FOX: And this particular report, was it, in short, to
22 endeavour to conduct a comparison between the DNA IQ
23 protocol and the Maxwell system?
24
25 MR McNEVIN: Yes.
26
27 MR FOX: Would you like to just explain what was actually
28 being compared - that is, when one looks at the abstract to
29 this document, it talks about the current - this is the
30 first line - the current manual and automated liquid
31 handling units DNA IQ method, so there are two that are
32 being referred to there.
33
34 MR McNEVIN: Mmm-hmm.
35
36 MR FOX: Then about halfway down that paragraph, the
37 Promega Maxwell 16 with a modified Promega procedure was
38 comparable or outperformed the manual DNA IQ method in the
39 sensitivity studies. Do you see that part?
40
41 MR McNEVIN: Yes.
42
43 MR FOX: So are we talking about, where it talks about the
44 "manual DNA IQ method" in that fourth-last line, the actual
45 manual, or is it a sort of hybrid automated and manual
46 process?
47

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MR McNEVIN: What it says on the box, so "manual DNA IQ method".

MR FOX: Only the manual.

MR NURTHEN: I think it's referring to the method that we had validated and implemented in the laboratory not the Promega manual method.

MR McNEVIN: The manual method that was part of our SOPs at the time.

THE COMMISSIONER: Sorry, I didn't understand. Can you say that again?

MR McNEVIN: So we discussed earlier that the manual method that we had validated as part of --

MR NURTHEN: Project 11.

MR McNEVIN: -- Project 11, yes, that was different to the out-of-the-box Promega method, we discussed temperatures and that sort of thing.

THE COMMISSIONER: Yes.

MR McNEVIN: So the comparison is the manual DNA IQ method that was in place at the laboratory at the time, not the Promega manufacturer protocol.

MR FOX: I've been referring to it as the modified manual - the manual method of the DNA --

MR McNEVIN: So the method that was in our SOP at the time.

MR FOX: That's the comparison, between that modified DNA IQ protocol now with the automated Maxwell system; correct?

MR McNEVIN: Yes, I think that it is mentioned a couple of times throughout the report - I think.

THE COMMISSIONER: So this is again off-deck lysis?

MR McNEVIN: No, no, it is the manual method - the manual method of - so it doesn't involve the use of the MultiPROBE

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1 for extraction, this validation.
2
3 THE COMMISSIONER: I thought at some stage somebody said
4 that that was never actually implemented, it was only used
5 as a test comparator.
6
7 MR McNEVIN: Yes, it was a method that was - that we had
8 in the laboratory and I think we did from time to time
9 require to use it because of, you know, the MultiPROBE's
10 not working or whatever, so it was used as a comparison
11 because we were looking at the Maxwell, and look, I can't
12 remember why we chose to compare it to the manual method.
13 We've talked a bit about not speculating but I think my
14 guess is that it was so that we had an alternative to the
15 MultiPROBEs, so therefore, it would be replacing the manual
16 method as the alternative to the MultiPROBEs.
17
18 I seem to recall that it was about having
19 a small-batch method, we could, you know, do things like
20 urgent samples on, rather than having to do a big massive
21 lot.
22
23 THE COMMISSIONER: Excuse me for this, probably - I mean,
24 obviously I'm just trying to understand how all this fits
25 in. This refers to a pre-lysis testing.
26
27 MR NURTHEN: This refers to an alternate DNA IQ system,
28 run on a completely different instrument to the MultiPROBE.
29
30 THE COMMISSIONER: Yes. But when it talks about - I'm
31 trying to work out if there is anything in common between
32 the pre-lysis procedure that is looked at here and any
33 pre-lysis procedure that was used for the purposes of the
34 MultiPROBE.
35
36 MR McNEVIN: Yes, so to be honest, I can't quite remember,
37 but just reading that, is it the second sentence:
38
39 *Initially pre-lysis methods were tested to*
40 *determine which method gave acceptable*
41 *results and then would be used for the*
42 *remainder of the verification.*
43
44 THE COMMISSIONER: It says the Promega recommended
45 procedure. Now, that sounds like --
46
47 MR McNEVIN: Sorry, which line are you looking at?

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1
2 THE COMMISSIONER: The next line. It says that it was
3 determined that the Promega recommended procedure with a
4 few modifications was deemed to be the most
5 suitable pre-lysis procedure. So I'm just trying to work
6 out how that fits in with the MultiPROBE Promega
7 methodologies.
8
9 MR McNEVIN: Oh, okay. I don't recall. My guess is that
10 we must have done some different pre-lysis methods and it
11 may well have been that there was a pre-lysis method that
12 was published by Promega for use with the Maxwell MDx
13 instrument.
14
15 THE COMMISSIONER: I guess without speculation, from your
16 recollection or knowledge, does that have steps in common
17 with the procedure used for the purposes of the MultiPROBE?
18
19 MR McNEVIN: I would imagine that they're all very
20 similar. There's probably just some variations on, you
21 know, quantities, concentrations, that sort of thing. So
22 these instruments came along subsequent to the MultiPROBEs,
23 subsequent to the DNA IQ procedure that would have been
24 available back when we validated the manual method some,
25 you know, years previous, so it may well be that Promega
26 might have even updated their protocols in the interim as
27 well. So, look, I would have to go back and re-read the
28 report with more detail, but there would be some different
29 variations on a theme.
30
31 THE COMMISSIONER: The fact that if you had any problems
32 with this pre-lysis procedure that you were referring to in
33 this report, it doesn't necessarily tell us anything about
34 the procedure that was used for the MultiPROBE?
35
36 MR McNEVIN: No. I can't recall which - what the
37 various --
38
39 THE COMMISSIONER: You can't help one way or the other on
40 that?
41
42 MR McNEVIN: No, not without maybe digging deeper into all
43 of the records that we have.
44
45 THE COMMISSIONER: I understand, thank you.
46
47 Thanks, Mr Fox.

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1
2 MR FOX: If this was a comparison between the modified
3 DNA IQ protocol, so the manual - I am just going to call
4 this the modified manual system --
5
6 MR McNEVIN: Okay.
7
8 MR FOX: If it was a comparison between that and the
9 Maxwell automated system, why, when one looks at item 4,
10 "Equipment and Materials", would it be necessary to list
11 the MultiPROBE device there?
12
13 MR McNEVIN: If you just go down to "Methods", there's a
14 "Materials and Methods" section, if we scroll through the
15 report. So a little bit further, please, a little bit
16 further along in the report, please, yes, a little bit
17 further, when you get to "Quantification and
18 Amplification". So if you just stop there for a minute, so
19 5.2, there talks about the extraction procedure, and then
20 you can see under "Quantification and Amplification":
21
22 *All quantification reaction setups were*
23 *performed using a MultiPROBE II PLUS HT EX*
24 *with Gripper ...*
25
26 So that's why it wouldn't be listed in the equipment used,
27 because we used the MultiPROBE for setting up the
28 quantification and amplification reactions.
29
30 MR FOX: And then, sorry, you added in also the
31 amplification, which one can see there. So in your mind,
32 you have no doubt at all that - firstly, do you remember
33 this report and this work?
34
35 MR McNEVIN: Sort of. It's a little bit fresher in my
36 mind than --
37
38 MR FOX: But reading through this, you say that you're
39 satisfied that where it refers to the idea of comparing the
40 modified manual, DNA IQ protocol, with the Maxwell - the
41 automated Maxwell, is that it's not referring by the word
42 "manual" to a hybrid - that is, a manual plus automated,
43 that is the off-deck lysis approach. We're not comparing,
44 for example, the off-deck lysis approach that was
45 reintroduced in 2009 against the Maxwell?
46
47 MR McNEVIN: No, it's the manual method, and I think, you

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1 know, it's in more than one place throughout the report,
2 it's referred to as "the manual method".
3
4 MR FOX: I understand that, but I just want to make sure
5 my understanding - I understand what your recollection is
6 of what this actually was as a test, that it wasn't, in
7 fact, comparing the off-deck lysis approach against - that
8 is, the reintroduced approach, against the Maxwell system.
9
10 MR McNEVIN: Mmm.
11
12 MR FOX: Then can I just ask this question, then: why
13 wasn't that the appropriate test to be doing a couple of
14 years later - that is, to actually be testing the
15 reintroduced or reimplemented off-deck lysis system against
16 the Maxwell?
17
18 MR McNEVIN: Well, like I said, I can't really recall
19 exactly why we chose the manual method. My only sort of
20 thought is that that was because we were looking to have an
21 alternative to the - alternative to the automated method.
22 The previous alternative was to use the manual IQ method
23 and so we were looking to replace the manual IQ method, so
24 we were testing it against the method we were going to
25 replace. We weren't replacing the off-deck lysis method.
26
27 To be honest, I'm not entirely sure why we chose to do
28 that. I can imagine that we would have not tested it
29 against both methods because that would have added an extra
30 layer of testing that, you know, for all intents and
31 purposes had been done on a previous - we said, "Test it
32 against one method" and we chose the manual method. You
33 know, it's a small-batch method, testing it against
34 a small-batch method. But I can't remember the exact
35 reasons, to be honest.
36
37 MR FOX: Can I just ask you to turn to page 7 of the
38 document. This is the heading, just for those who are
39 sliding through the electronic version, "Results and
40 Discussion", item 7, 7.1 is "Suitability", there is a graph
41 and then there is a table under that, "Summary of
42 Suitability Results". And you will see there in the last
43 four lines of page 7:
44
45 *The original validation of the manual*
46 *DNA IQ chemistry gave an average yield of*
47 *307 Ng for blood swabs with a standard*

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1 *deviation of 102.36.*
2
3 Then the next sentence is:
4
5 *The results of the manual DNA IQ in this*
6 *verification showed a significantly lower*
7 *yield with a lower standard deviation for*
8 *the blood swabs and a much greater yield*
9 *for the cell swabs with an increased*
10 *standard deviation when compared to the*
11 *original validation of the manual DNA IQ*
12 *chemistry.*
13
14 Now, just pausing there, when it says "the original
15 validation of the manual DNA IQ chemistry", what do you
16 understand that to be referring to?
17
18 MR McNEVIN: One of those earlier projects, 9 or 11, or
19 one of those two.
20
21 MR FOX: Well, 9 was just simply doing a comparison
22 between that and four other manufacturers.
23
24 MR McNEVIN: Yes.
25
26 MR FOX: Then 11 was a modification.
27
28 MR McNEVIN: It must have been 11, then.
29
30 MR FOX: Mr Nurthen, do you have any insight?
31 I appreciate you don't have your name on this document, but
32 you have read this document and we're reading it now. What
33 do you think that's referring there to, "the original
34 validation"?
35
36 MR NURTHEN: I would think it would make sense to be
37 referring to Project 11, if that's where that initial work
38 had been done. It would make sense to me that that's where
39 those figures were derived from. But what I'm unaware and
40 I'm not intimately involved or intimately over this
41 particular report, but I don't know how much blood was put
42 on those swabs to know whether or not you can directly
43 compare them, because they clearly weren't the same samples
44 that were done in Project 11, which leads me back down that
45 path of the efficiency as well to go, "Could you directly
46 compare it?" I'm not sure that you could directly compare
47 it.

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MR FOX: Then just asking you, both Mr McNevin and then Mr Nurthen if you wish, just in relation to the sentence about "The results of the manual DNA IQ in this verification showed a significantly lower yield with a lower standard deviation", so this is a lower yield compared to either the original validation, which is what it seems to be suggesting, or it is a lower yield by comparison with the Maxwell.

MR NURTHEN: I think it would be referring to the original manual DNA IQ, but if we could go further up in the document to where they have actually prepared the samples, to give me any indication as to how much - so they have 60, 30, 15, 5, 2, 1 microlitre, 0.5, of blood. I think originally we did a 30 microlitre, and then a 1 in 10, 1 in 100, 1 in 1,000, but again, unless you are using exactly the same blood, being able to make extrapolations back to Project 11, I wouldn't think would be a good idea.

Comparatively doing it the same time with the same blood, that's okay. But we just don't know how many white cells were in this particular version of the blood compared to whoever's blood was used back in 2007.

MR FOX: Mr McNevin, did you want to make any comment about that?

MR McNEVIN: Yes. So going back to that sentence, I think it's referring to the results for the manual DNA IQ when we did it in Project 70 comparing it to the results for manual DNA IQ from the validation - is that - can I go back and re-read that sentence?

MR FOX: Yes, that's the sentence I'm lingering on.

MR McNEVIN: Yes, is that --

MR FOX: So you are saying Project 70 is --

MR McNEVIN: Can I just read it again?

MR FOX: Yes, of course.

MR McNEVIN: Is that okay?

MR FOX: No, absolutely. Yes, so we have to scroll back

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1 up. We're back to where we were before, please, just at --
2
3 MR McNEVIN:
4
5 *The results of the manual DNA IQ in this*
6 *verification showed a significantly lower*
7 *yield with a lower standard deviation.*
8
9 Yes, so I'm talking about - I think here we're talking
10 about the results from manual DNA IQ in this experiment, in
11 this project, comparing them to the original validation
12 manual DNA IQ. I can't remember whether we were using the
13 same donor or not.
14
15 MR NURTHEN: And I think this table is different because
16 that other one indicated the sensitivity, so I'm not sure
17 where this - because this is only presenting if it is an
18 absolute value.
19
20 MR McNEVIN: Which experiment is this one? Have we got
21 the whole document to look through rather than just
22 a page at a time? It's a little bit difficult.
23
24 THE COMMISSIONER: Is there a spare hard copy?
25
26 MR FOX: I have one but it has handwritten notes all over
27 it.
28
29 THE COMMISSIONER: I'm sorry, I have written on this as
30 well.
31
32 (Hard copy shown to Mr McNevin).
33
34 MR McNEVIN: Thank you. So we're looking at results from
35 Project 70, "Suitability". Okay, so looking at that now,
36 so that's the page 7, that's section 7.1, "Suitability", so
37 we're looking back at the "Experimental Design", "7.1,
38 Suitability", talking about buccal swabs, the report
39 actually doesn't point out exactly how much blood was on
40 those cells, so it's not very good.
41
42 THE COMMISSIONER: I'm just wondering, Mr Fox, do you have
43 much else to do with these witnesses?
44
45 MR FOX: We're pretty close to the end.
46
47 THE COMMISSIONER: I was just wondering whether it might

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1 be fair to allow five minutes just - I don't mind if I sit
2 here quietly, but I think it might be fair to let him just
3 read through that slowly and get on top of it.
4
5 MR McNEVIN: It could be referring to - so 5.1.4 talks
6 about 30 microlitres of blood, so it could be comparing -
7 did we do 30 microlitres of blood in the original DNA IQ
8 extraction?
9
10 MR NURTHEN: I believe so, yes.
11
12 MR McNEVIN: So it's probably comparing that 30 microlitre
13 result with the 30 microlitre result from the previous
14 experiment. I don't know whether we used the same donor or
15 not. We keep our - for each validation, who the donor is,
16 is anonymised, is made anonymous so that, you know, with
17 the fullness of time I can't go back and tell you whether
18 it's the same donor or not. If it was the same donor, you
19 would expect the results to be similar, not necessarily
20 bang on, but you would expect - you would sort of get
21 similar levels of DNA out of someone's blood over a period
22 of time.
23
24 MR FOX: I think we'll give you those few minutes,
25 Mr McNevin, just to look at that document.
26
27 THE COMMISSIONER: Why don't we take five minutes so that
28 you can actually sit down quietly without the pressure of
29 everyone staring at you and have a read through that. The
30 other is if you don't feel that you - you haven't had
31 a chance to look through this and understand what it is,
32 why don't we give you an opportunity of putting in
33 something overnight.
34
35 MR FOX: Certainly. I might then just ask the question,
36 which is: If you turn to page 14 of the document, this
37 is item 7.3, "Sensitivity Testing and DNA Yield", you
38 will see there the graph with respect to sensitivity, and
39 the Maxwell automated system is giving better results from
40 2 microlitres up to 60 microlitres, that were significantly
41 better in the range of 2 to 5, this is as against the
42 manual method.
43
44 MR McNEVIN: Mmm.
45
46 MR FOX: I just wanted to ask you whether that result
47 struck you as being rather impressive in terms of favouring

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1 Maxwell against the manual system, which one would expect
2 to perform well, ordinarily?
3
4 MR McNEVIN: To be honest, testing at that high level,
5 where you're getting quite good quantitation values, it's
6 probably a little bit of a moot point because you're
7 probably (a) reaching the maximum binding capacity of the
8 beads that you have in your method and you're also getting
9 to the point where you're going to get plenty of DNA
10 regardless of whether the yield is a bit up or a bit down,
11 when you are talking about samples of a lot of DNA.
12
13 Where your interest really lies is when you've got
14 less DNA. So looking at, you know, 0.51 microlitre, that's
15 your area of actual critical concern when you are talking
16 about whether a method - you know, when you're getting more
17 DNA than what you need to produce a DNA profile, does it
18 really matter whether your yield is a bit up or down, when
19 you have got plenty anyway, you know? If I've got enough
20 paint to paint a wall, it doesn't matter whether I've got
21 an extra five pots of paint or an extra 20 pots of paint,
22 I've still got enough paint to paint the wall. So what
23 you're really interested in is when you're getting further
24 down the smaller end of the scale. The fact that the
25 results for manual sort of seem to level out at around 100
26 nanograms total yield indicates that's probably what the
27 maximum binding capacity of the method was, and maybe the
28 Maxwell had a greater maximum binding capacity. I can't
29 really remember.
30
31 MR NURTHEN: I think, if I can help with that, that
32 I would expect the Maxwells probably have a different
33 binding capacity but I don't think they state in any of
34 their literature what the binding capacity is for the
35 Maxwells, but they do to for the Promega DNA IQ by itself.
36 The binding capacity by itself is approximately
37 100 nanograms, so if the resin is different and there's
38 a different amount of binding capacity, you're going to see
39 better results for the Maxwell even if it isn't as
40 efficient. I think it probably is more efficient, but
41 you're not necessarily comparing apples and apples, if that
42 makes sense.
43
44 MR FOX: The only other topic - there is a matter before
45 you rise today that I just want to raise, it comes out of
46 the questions that we've just been dealing with on the last
47 topic. The only other matter which I had was in relation

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1 to going forward, that was whether there are any comments
2 that any of the experts wish to make about lessons learnt,
3 would they do things differently; what would they
4 recommend, in terms of retesting, that general territory.
5
6 THE COMMISSIONER: Sure.
7
8 MR FOX: Just a few questions, then. You have had the
9 benefit of reflecting on matters that are (indistinct) --
10
11 THE COMMISSIONER: Just with regard to that last document,
12 if there is anything you wish to add in relation to that
13 document, you can put it in writing, you know, just to help
14 us with that.
15
16 MR FOX: I will deal with that issue then, now.
17
18 MR FOX: So the legal representatives for the scientists,
19 but particularly those representing Mr Nurthen and also
20 Mr McNevin, were provided with some points that had been
21 raised by Dr Wright in reviewing the evidence, and they
22 were given that document.
23
24 THE COMMISSIONER: This one?
25
26 MR FOX: Yes, thanks. In relation to the Project 70, but
27 there were some other questions which have been dealt with
28 in the course of this afternoon. And it was raised with me
29 just before we commenced today that there may have been
30 a disruption to this afternoon's events by reason of
31 whether they had had sufficient time to digest the comments
32 that had been made.
33
34 I gather that, by the fact that people haven't leapt
35 up and tried to throttle me during the course of this
36 examination-in-chief, things have gone reasonably
37 satisfactorily, but what I would wish to indicate, so they
38 can hear what I have to say - if they want to say anything
39 further, now is the time to do it - that it seems to me
40 that if both of those gentlemen would be given an
41 opportunity, if they wished, to put something in writing in
42 response to - further to what they have said, which is on
43 the territory of these questions, that they be given that
44 opportunity to do so.
45
46 MS FREEMAN: Thank you, Mr Fox. Yes, Commissioner, those
47 issues were only raised with us this morning, and so

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1 I haven't really had much of a chance to take full
2 instructions from my clients about those points. So it may
3 be that at the conclusion of today I just confer with
4 particularly Mr McNevin and Mr Nurthen about that, and if
5 there is something in particular they wish to directly
6 respond to in writing, we will do so overnight, if that is
7 suitable to the Commission.
8
9 THE COMMISSIONER: That makes sense to me. Thank you very
10 much.
11
12 MS FREEMAN: Thank you.
13
14 MR FOX: I think their answers have dealt with the issues
15 but I thought it would be better to extend that courtesy to
16 them given that they had only received the material --
17
18 THE COMMISSIONER: Yes, Mr McNevin at the very least was
19 doing it on the run, and I think I would be assisted by any
20 reflections if they occur overnight. Thank you.
21
22 MR FOX: So in terms of the final topic, this is intended
23 to be one of reflection, if anybody wishes, by reason of
24 having gone back to matters some 15 years ago and the steps
25 that have been taken, would we have done anything
26 differently with the benefit of hindsight? It's not
27 intended to offer an opportunity for anybody to fall on
28 a sword, I don't expect that from the evidence that has
29 been given today, but if there are any suggestions or
30 reflections that you would like to make to the Commissioner
31 at that point, now is your invitation to do so, and that
32 can also include in terms of - I indicated, you know, when
33 you were outside early this morning when the matter opened,
34 that there had been a decision made to go and test right
35 back to 2007, and whether you had any observations to make
36 in relation to what might be there to be tested, et cetera.
37 I think we've covered some of that already today.
38
39 THE COMMISSIONER: I have one specific question about that
40 before you go on to the general reflections. You went back
41 to Chelex for a period of time, I think between July 2008
42 and some time in 2009, and that was when the automated
43 procedure was reintroduced. When you make your comments,
44 I wouldn't mind any comments you could make about the
45 reliability of the testing that was done during that
46 period, even if you assume that there was a problem with
47 the extraction of DNA in any event, whatever was the

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1 situation with the automated - when you went back to
2 Chelex, if you could just give me an understanding of what
3 you think about the retesting of those samples.
4
5 MR NURTHEN: I think if you look at it on a risk basis,
6 I don't think there is a lot of risk associated with going
7 back to the status quo which was the Chelex. There was no
8 reason to suggest before we started the IQ that Chelex was
9 unreliable, it is known to produce DNA and known to get DNA
10 profiles. I think the problem was it just wasn't as clean.
11
12 THE COMMISSIONER: And the quality.
13
14 MR NURTHEN: The quality. So I don't have any concerns in
15 that period where we retested with Chelex that any of those
16 cases would need to be retested.
17
18 THE COMMISSIONER: Does anyone else have an observation to
19 make about what I will call the closed Chelex period?
20
21 MR McNEVIN: No, I don't think so. I don't think the
22 laboratory had any validation reports or anything from
23 Chelex, on those, when it was very first implemented, so
24 I don't think there would be anything much to go back to,
25 to sort of check off on that.
26
27 THE COMMISSIONER: I don't know if anyone on screen has
28 any comment to make about that, but otherwise, if not,
29 I will go back to you, Mr Fox.
30
31 MR FOX: Thank you, this is just in terms of maybe
32 training, reflections on that, it may be the validation
33 processing, maybe report writing. You've had an
34 opportunity to reflect no doubt on it, and this is just an
35 opportunity if there are any positive sentiments that you
36 would wish to express to the Commissioner and be given the
37 chance for an opportunity to make some observations about
38 what has occurred.
39
40 MR NURTHEN: I think that I took the lessons that are
41 learned from working on that particular project forward
42 with all of the other projects I've worked on subsequently,
43 with respect to documenting, with respect to, you know,
44 writing everything up and trying to get everything planned
45 first. I think in retrospect - and again, at the time,
46 being very new to this process and not having undergone any
47 formal validation training at the time - I now look back

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1 and go, "We shouldn't have picked up any instruments. We
2 shouldn't have started anything until there was a fully
3 signed-off plan."
4
5 But at the time, that's not the way I guess we were
6 working. Now I would say, "No, you don't start any
7 experiments until you have a plan that has been written out
8 in total, you've looked at what kind of statistical testing
9 you want to do, everything is basically put out on the
10 table and reviewed externally, hopefully, prior to even
11 starting the experiments."
12
13 I'd say that's where, in retrospect, that would have
14 greatly benefited us by actually having a full plan before
15 going to something as large as this was. I think, naively
16 moving into it, we thought we could just pick up a method
17 and it would be plug and play, and it clearly wasn't that
18 easy and that simple.
19
20 MS IENTILE: I think building on what Tom has said about
21 the reflections, at that period of time when these reports
22 in 2007 or this work was done, prior to that, the
23 validation reports hadn't included a summary report, they
24 had just been the data that was collected. So we were
25 moving in a process of continuous improvement in the
26 laboratory as a whole towards what Tom is alluding to,
27 a better planning situation and reporting. So I think the
28 lessons learned from that, I support what Tom has said
29 around the planning and around the documentation and the
30 final report and where the sign-off occurs.
31
32 MR McNEVIN: Yes, and I think if you go to projects later,
33 like 70 and 71, some of those subsequent ones, and so on
34 and so forth, you'll see, you know, there's project
35 reports, there's experimental designs with all members of
36 the management team signing off on them, there's review
37 processes and, you know, certainly the subject of the
38 previous Inquiry, there was much discussion about, you
39 know, feedback on reports and that sort of thing.
40
41 So if there was a lot more - an expansion of that kind
42 of thing where we had a final report that was signed off by
43 all members of the management team prior to implementation
44 of a procedure, that wouldn't have led us to this stage
45 where we're having a conversation today about a draft
46 report on a process that we had implemented that certainly,
47 you know, wouldn't have - didn't happen later on because

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1 we'd learned some of those lessons about finalisation of
2 documentation; we had a much more stringent project
3 management system in place that came along as a result of
4 those subsequent validations that we did. We also got
5 better at, like, naming conventions with files and things
6 where, you know - and unfortunately, some staff still
7 struggle to appreciate it but you need to, you know, have
8 everything labelled so that when you go back to look at it
9 some years later, you know what that spreadsheet - what all
10 that data in that spreadsheet is, rather than it just being
11 a whole bunch of values and numbers, you're kind of like,
12 "Oh, what part of the experiment was that?" So we've
13 learned a lot of - a lot of lessons learned from that and
14 I certainly, you know, implemented a lot of those lessons
15 in a lot of the projects that I was involved in subsequent
16 to the automation project.
17
18 MR FOX: Thank you.
19
20 And, Dr Hlinka, would you like to indicate any
21 thoughts or reflections, looking back now?
22
23 DR HLINKA: I haven't been working at the lab since 2009,
24 so I do not actually know what has been happening since
25 then. I think there should be a level of protection on
26 internal documents so that, you know, important documents
27 like the Project 13 report do not disappear or get deleted
28 accidentally. There should be some kind of quality
29 management around that.
30
31 MR FOX: Thank you. Ms Gallagher?
32
33 MS GALLAGHER: Given my position at the time was fairly
34 junior, it's hard to sort of recollect what I might have
35 been able to do differently in terms of the project, but
36 I certainly think in listening to conversations today,
37 I guess things that I could have done better at the time
38 would have been, you know, as I was going about doing my
39 work sort of like what has been mentioned already is making
40 better records of each iteration that we were going through
41 in terms of creating the documentation and - sorry, in
42 terms of creating the protocol that was put in place, and
43 as we've been going back over different methods that were
44 provided by the manufacturer, maybe having records of each
45 protocol that we had at the time that could have been saved
46 alongside these projects that could be referenced in those
47 documents so that we could see what the original

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1 manufacturer's protocol was at the time.
2
3 MR FOX: Thank you. Mr Muharam?
4
5 MR MUHARAM: Thank you, Mr Fox. Just I guess to make
6 a minor comment, you know, again reflecting on my time of
7 employment there, I do recall, you know, as the part of
8 the - any validation work that was done, the lab actually
9 tended to overvalidate, if I could say that, you know,
10 fairly, meaning that, you know, the team went above and
11 beyond to identify what's kind of like the minimum that
12 needs to be done and then often a lot more was done on top
13 of that.
14
15 For example, the efficiency study that was mentioned
16 earlier, you know, with human male genomic DNA carrying
17 that through, as far as I know personally, that's not
18 a common experiment that a lot of labs do. So, you know,
19 just to highlight that, you know, the lab at the time was
20 to some extent trying to do the best that they could, and
21 often actually employing best practices, but maybe to some
22 extent overvalidating.
23
24 But in terms of reflecting on, you know, improvements
25 that could have been made, I agree definitely with all the
26 other experts here in terms of, you know, understanding the
27 scope, scoping, scoping experiments beforehand,
28 understanding the stakeholder expectations and having that
29 approval matrix put into place, record-keeping has come up
30 a couple of times, project tracking, and obviously
31 nomenclature around identifying a draft document versus the
32 finalised document, I think these could be, you know,
33 future areas of improvement.
34
35 MR FOX: Thank you. Now it's really a matter of residual
36 questions.
37
38 THE COMMISSIONER: I have a few residual questions.
39 Thank you very much for those reflections. Everyone has
40 described in a way, you know, expansion and contraction of
41 the same concept of the systems that are in place. You
42 said that things got better and that, you know, you have
43 learnt things since then.
44
45 I'm trying to put some time frames into this because
46 one of the things that I have to consider is the period of
47 time during which there may have been some uncertainty as

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1 to outcomes, for any of the reasons that we've discussed,
2 including, you know, not every lack of record-keeping gives
3 rise to a consequence, but some may, and some may introduce
4 questions of uncertainty as to results. So what I'm just
5 trying to look at are time frames when things got better
6 and also times during which there was any uncertainty
7 sufficient to - not to justify, to call for a retesting of
8 the underlying samples. I guess that's - so when you said
9 things got better and things have improved and we all
10 acknowledge there were systems that were not working as
11 they should in that time, and I think Mr Muharam put it - I
12 mean, the fact is we're talking about a draft document that
13 went through iterations and never seems to have been
14 finalised for sure, yet it formed the basis for the
15 implementation of a methodology, I mean, that's something.
16
17 So can you give me an idea of the time frames and any
18 comments you want to make about the time periods in your
19 experience that raised that potential for uncertainty?
20
21 MR NURTHEN: I think it's an iterative process of
22 improvement.
23
24 THE COMMISSIONER: Let's go back to 2007, if I may, which
25 is when this started, and give me - can you give me, since
26 that time, a time when you would say that you would not be
27 confident, for any of the reasons, whether it was because
28 there were contamination issues or any recovery issues or
29 things were not perfect - the times during which you feel
30 there was sufficient uncertainty in the testing results,
31 looking at it now? I'm not suggesting at the moment that
32 you saw it then, because that's not relevant really for me
33 now; it's looking at it now.
34
35 MR NURTHEN: Are you referring just to the extraction
36 process now? I thought you were talking about validation.
37
38 THE COMMISSIONER: This is about Project 13, so it's the
39 use of the MultiPROBE, the automated system with the
40 MultiPROBE, in its various iterations. I mean, if you told
41 me today - I'm not suggesting this is to be said - that we
42 now reckon that the off-deck lysis was a disaster as well -
43 I mean, what I'm saying is I just want your views on that
44 time frame if I can have it, please.
45
46 MR NURTHEN: I think it would be prudent, where possible,
47 and where indicated, that you would go back and retest, if

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1 possible, because it just makes good scientific sense, if
2 there is any uncertainty. It is no good me giving
3 assurances saying, "We think it's okay". It would seem
4 logical to me that if you have the opportunity as part of
5 the case, why not retest it?
6
7 We actually get the added benefit, because back in
8 2007 we were using the Profiler Plus kit with a 3130 or
9 a 3100 instrument, and we were using binary interpretation
10 of DNA profiles. We now have a much bigger suite of
11 testing that we can do that is more sensitive, the
12 amplification kit we use is more sensitive, everything is
13 more sensitive.
14
15 THE COMMISSIONER: I understand.
16
17 MR NURTHEN: So it indicates to me that whole period, why
18 wouldn't you go back.
19
20 THE COMMISSIONER: Back to when? You reintroduced - TN32
21 brings in a period with the genomic DNA efficiency
22 verification. Are we talking about from 2007 to 2009, from
23 2007 to 2016? What are we talking about?
24
25 MR NURTHEN: I don't think you can put a cap on it because
26 we do, as a regular basis for cold cases, go back to
27 samples in the mid '80s, in the '70s, even earlier, and
28 retest them with the current technology and get results.
29 So I don't see why you'd restrict yourself to any time
30 period. I think if anything you might want to prioritise
31 which cases in which period you might possibly look at.
32 That would seem a sensible approach to me, rather than go,
33 "Oh, I would only test" --
34
35 THE COMMISSIONER: I'm looking - because I mentioned at
36 the beginning the terms of reference, so I'm not making
37 a free for all here. I think at the moment, let's just
38 start with one thing, which is the consequences of any
39 uncertainty that may arise because of the methodology
40 outlined in Project 13 as it was then carried out,
41 implemented and subsequently to the extent that it
42 subsequently was relevant in the laboratory testing
43 procedure.
44
45 MR NURTHEN: I think to give the community confidence, we
46 would have to test anything in that time period.
47

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1 THE COMMISSIONER: But when did it stop?
2
3 MR NURTHEN: Well, if you want to give the community the
4 best confidence, it would be all the way to the end of the
5 MultiPROBE, which I -
6
7 THE COMMISSIONER: In 2016.
8
9 MR NURTHEN: 2016, which I understand was already on the
10 cards for testing or retesting anyway.
11
12 THE COMMISSIONER: Does anyone else wish to make an
13 observation about that?
14
15 MS IENTILE: No.
16
17 THE COMMISSIONER: Thank you very much. That's very
18 helpful.
19
20 I don't have any other questions. Do you have any
21 other questions?
22
23 MR FOX: No, I don't. I don't know whether anyone else
24 does.
25
26 THE COMMISSIONER: Does anybody else have any questions
27 arising, or not arising? It doesn't have to arise from my
28 question, it can be any independent question that anyone
29 wishes to put to any of these witnesses? No?
30
31 Look, I appreciate it has been a novel - possibly
32 a novel procedure for you all. I appreciate you coming on
33 and giving me the evidence that you have.
34
35 Thank you for making the system work, and I think it
36 has worked, and I hope you feel that you have had the
37 benefit of having each other present to deal with these
38 matters.
39
40 In particular I would like to thank Dr Hlinka because
41 I know that your medical condition is such that you didn't
42 think you would be able to make it for the whole day, and
43 yet you have.
44
45 DR HLINKA: Yes, thank you.
46
47 THE COMMISSIONER: So I'm very appreciative of that.

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DR HLINKA: Thank you very much.

THE COMMISSIONER: Thank you all.

Unless anyone has anything - are we going to get something in writing? It may well be that we will ask some of you - I can't say for sure; it's not up to me. At the moment I can't see it, but it may well be that some of you might be asked to come back for further evidence but we will give you appropriate notice with respect to that.

Can you notify us, please, one way or the other, whether you intend to put anything further in writing, so we know?

MS FREEMAN: Of course, yes, Commissioner.

THE COMMISSIONER: Thank you very much. Is there anything else, Mr Fox?

MR FOX: Yes, just in terms of the start time.

THE COMMISSIONER: Tomorrow morning, the start time.

MR FOX: Yes. I think at this stage, it will 9 o'clock, because we're dealing with Dr Budowle in the US.

THE COMMISSIONER: If not, we will notify people.

MR FOX: Exactly. It won't be earlier than 9.

THE COMMISSIONER: We did think of earlier than 9 but we decided to have some sympathy for others who may not be prepared to come that much earlier but we will start at 9 o'clock rather than 10 because of the time frame for Dr Budowle. We will be having another hot tub tomorrow.

Thank you. I will adjourn.

AT 4.07PM THE SPECIAL COMMISSION OF INQUIRY WAS ADJOURNED TO TUESDAY, 31 OCTOBER 2023 AT 9AM

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'70s [1] - 144:27
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