From: Helen Gregg
Sent: Wednesday, 17 August 2022 11:25 AM
To: David Rosengren
Cc: Megan Fairweather; Cathie Allen; Karen Watson; Glen Rice; FSS Corro
Subject: Wording to describe pre-2018 thresholds and options
Attachments: Forensic DNA testing impacts; Extract 19.4 from SOP 17117V19.pdf

Importance: High

Dear David

I have received advice from Cathie Allen, Managing Scientist for Police Services FSS, that on Monday afternoon, she had a meeting with Mr Glen Rice QC, Megan Fairweather, Chief Legal Counsel, and Karen Watson, Crown Law. During that meeting, Cathie conceded that the **attached** email of 3 June 2022 was not sufficiently clear in explaining the 'options' put forward as alternative workflows to the one currently in place for *'DNA insufficient for further processing'* .

The email wording had been provided following an urgent request by Lara Keller, A/Executive Director, to devise options that could be put forward to the Director-General on alternative workflows that did not include the 'DNA insufficient for further processing' workflow and some costing data associated with this.

Cathie would like to acknowledge her unintended human error and provide a correction to the previous information put forward.

Information about DNA testing prior to 2018

It is helpful to explain that DNA Analysis is performed using 4 basic steps: 1. Extraction; 2. Quantification; 3. Amplification and 4. Capillary Electrophoresis.

The DNA samples processed at the laboratory are broadly divided as:

- Major crime (committed against a person, such as murder), categorised as Priority 1 or Priority 2
- Volume crime (committed against property, such as break and enter), categorised as Priority 3.

In early 2018, a process was approved by QPS to modify the DNA testing process for Priority 1 and 2 (major crime) samples with a quant value between 0.001ng/uL and 0.0088ng/uL. The new process meant that this cohort were no longer subjected to a 'microcon' process following stage 2 (of 4) in the DNA testing process, and were effectively 'paused' at that stage 2 unless the further processing steps were requested by QPS or initiated at the discretion of the Forensic DNA Analysis Scientist.

Immediately prior to this, as described in the **attached** workflow (*Extract 19.4 SOP 17117V19*), all Priority 1 and 2 samples in this cohort would undergo the workflow for the PP21 profiling kit (Powerplex21 and STRMix) which included 'microcon' to maximise the chances of a DNA result being obtained after processing through stages 3 and 4 of the profiling process.

The other workflow used, immediately before the 2018 changes, was for Priority 3 (volume crime) samples using the ProfilerPlus profiling kit. These samples were processed through all 4 stages of DNA profiling process, without concentration. The ProfilerPlus profiling kit has since been discontinued and the volume crime samples are also now processed through Powerplex21 and STRMix.

The two options provided in the email from Lara Keller to the Acting Director-General on 3 June 2022 were intended to differentiate that volume crime (Priority 3) samples would not be included in any recommendation for returning to the microcon process, given that this had never been conducted on these samples. It was also intended to provide an option to allow for some scientific discretion for using the microcon process, taking into consideration other case information, against the risk of the process using up sample volume. It is now necessary to clarify any misconception that may have arisen following the short form of the options put forward urgently on 3 June 2022. The new or corrected information is highlighted in yellow or strikethrough.

Clarification about the 3 June 2022 options

Option 1 – ~~Preferred~~ Discretionary concentration

Discontinue the 2018 workflow and progress all Priority 1 and Priority 2 samples with a quant value above 0.001ng/uL through to DNA profiling. Samples that are identified as being beneficial for concentration can be, based on the DNA profile achieved, item criticality and case context. This workflow was used in the laboratory prior to the implementation of PowerPlex 21 (ie prior to 2012). This option ensures that resources are applied to samples that will benefit from the additional concentration in the context of the case. In 2012, an in-house laboratory recommendation, regarding processing with PP21, was put forward suggesting that samples with low quantitation values would benefit from concentration. Laboratory review of this recommendation hasn't been undertaken since that time, and new equipment has been introduced into the laboratory.

Option 2 – ~~Least preferred:~~ Concentration of all samples in range

Discontinue the 2018 workflow and concentrate all Priority 1 and Priority 2 samples with a quant value between 0.001ng/uL and 0.0088ng/uL and then process through to DNA profiling stage in accordance with the **attached** workflow for PP21. This workflow was used within the laboratory between 2012 and early 2018. Note, the concentration step creates a risk of there being no DNA samples available for testing by other technologies not undertaken in Queensland, future technologies or testing requested by Defence. In discussions with the QPS regarding the 2018 workflow, the QPS supported an automatic concentration process for Priority 1 or urgent samples, and were aware that automatic concentration of the sample may leave no sample remaining for future testing.

If option 2 is preferred, it may be prudent to consult with QPS given the potential impact on reduced sample quantity being available for future testing.

In light of this updated advice from Cathie Allen, Option 2 is the closest to the process used immediately prior to 2018, however requires an estimated additional 2FTE and $35,000 per annum in consumables. Option 1 (in place since 6 June 2022) requires additional FTE which we are in the process of recruiting to (MOHRI granted but no funding). If Option 2 is preferred, a revised funding brief will be prepared.

Regards
Helen

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Queensland Health acknowledges the Traditional Owners of the land, and pays respect to Elders past, present and emerging.