

Protocol

The Management and Use of Staff Elimination DNA Databases

FSR-P-302

This is a consultation draft and therefore should not be regarded or used as a standard. This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication.

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THIS DRAFT IS NOT CURRENT BEYOND 13 DECEMBER 2013.

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1. INTRODUCTION

- 1.1.1 The purpose of this protocol is to preserve the integrity of forensic DNA databases by identifying and preventing the addition of DNA profiles derived as a result of contamination from individuals involved in the DNA process chain, thereby respecting the privacy of individuals and complying with the Data Protection Act 1998 with respect to holding relevant and accurate data.
- 1.1.2 Contamination events from individuals involved in the DNA process chain that have not been detected:
- a. have misled high-profile police investigations;
 - b. wasted resources associated with significant costs; and
 - c. delayed cases reaching a judicial conclusion through the courts.
- 1.1.3 For the purposes of this protocol, contamination is defined as *“the introduction of DNA, or biological material containing DNA, to an exhibit or sample during or after its recovery from the scene of crime, or from a person”*. This is distinct from adventitious transfer of biological material to an exhibit or sample that can also occur, usually prior to the exhibit or sample being recovered and before investigative agencies have intervened.
- 1.1.4 This protocol is intended to assist in the assessment of forensic science providers, police force scientific units and any other functions as appropriate against BS EN ISO/IEC 17025:2005 for which the operation of effective elimination databases is considered to be a prerequisite in order to demonstrate compliance with sections 4.1.2, 4.4, 4.6, 4.9, 4.10, 4.11, 4.12, 4.13.2, 5.5, 5.4.7, 5.8.1, 5.9, 5.10 and the Forensic Science Regulator’s, *Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System* (the Codes).
- 1.1.5 This protocol should be used in conjunction with other anti-contamination guidelines concerned with the prevention of contamination, currently (September 2013) in draft or being developed by the Forensic Science

Regulator, namely FSR-G-208 *The control and avoidance of contamination in laboratory activities involving DNA evidence recovery and analysis*, further anti-contamination guidelines on prevention at the scene of crime and during recovery of evidence from victims; and published standards, PAS 377:2012, *Specification for consumables used in the collection, preservation and processing of material for forensic analysis* and ISO 18385¹:*Minimizing the risk of human DNA contamination in products used to collect and analyze biological material for forensic purposes* (ISO development PC272 N003). The interaction of these guidelines and standards is shown in Figure 1.

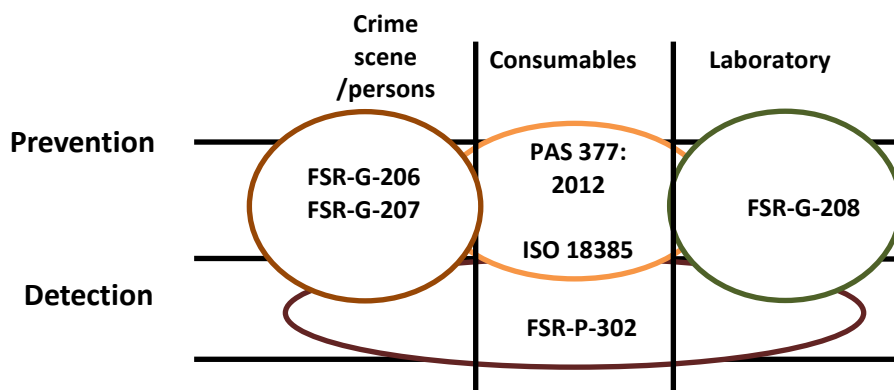


Figure 1 Interaction of anti-contamination guidelines

1.1.6 From a forensic science perspective, crime investigation activities can be considered as two distinct phases:

- a. the pre-submission phase (scene/victim/suspect), during which investigative agencies are involved in locating, recovering, packaging, storing and transporting exhibits; and
- b. the analytical phase (laboratory) in which the recovered exhibit is processed within a laboratory.

¹ This will be the replacement for AS 5483:2012 *Minimizing the risk of contamination in products used to collect and analyse biological material for forensic DNA purposes*.

1.1.7 Contamination can occur at any point in these investigation phases. The principal sources of DNA contamination are:

- a. from personnel to exhibit/DNA sample;
- b. from consumables (for example, swabs, tubes) to exhibit/DNA sample; and
- c. from exhibit to exhibit, or sample to sample.

1.1.8 Anti-contamination measures fall into two core areas of activity.

- a. Prevention of contamination as far as is practicable. Preventative measures entail minimising the chance of contamination occurring by, for example, staff using barrier clothing, restricting access to areas containing exhibits, cleaning laboratory surfaces and rendering consumables human-DNA free.
- b. Detection of contamination primarily entails the following:
 - i. comparison of DNA profiles generated from items against a database of reference DNA profiles from personnel from whom there is a significant risk of contamination;
 - ii. cross-checking of profiles within the same batch of samples and from different batches of samples processed within the same laboratory; and
 - iii. investigation of unexpected results.

2. SCOPE

2.1.1 This protocol provides requirements and recommendations on the management and use of elimination databases as a primary means of detecting contamination.

2.1.2 This protocol builds on section 19.4.5 of the Forensic Science Regulator’s *Codes of Practice and Conduct for Forensic Science Providers and Practitioners in the Criminal Justice System*, which stipulate that policies and procedures are required for elimination databases of laboratory staff, internal/external visitors and equipment suppliers.

2.1.3 This protocol applies to England and Wales. Scotland and Northern Ireland should also institute parallel arrangements for their jurisdictions and databases.

3. MODIFICATION

3.1.1 This is the first issue of this document.

4. TERMS AND DEFINITIONS

4.1.1 For the purposes of this protocol, the meanings of abbreviations are given in section 0 – Abbreviations.

4.1.2 The definitions of terms are given in section 30 – Glossary.

5. IMPLEMENTATION

5.1.1 This comes into effect from October 2014.

6. ASSURING THE QUALITY OF THE TEST (ISO/IEC 17025 REF 5.9)

6.1.1 It is recognised that DNA contamination incidents cannot be eliminated completely, given the prevalence of human DNA within the environment in which we both live and work. The issue is exacerbated by the increasing sensitivity of DNA analytical techniques. Therefore, an effective DNA anti-contamination process requires a combination of approaches to both minimise the risk of occurrence (ISO/IEC 17025 ref 4.12) and to maximise the ability to detect contamination when it does occur (ISO/IEC 17025 ref 4.9).

6.1.2 Prior to the submission of DNA reference or casework profiles to the National DNA Database² (NDNAD) or prior to communicating the casework results to customers and stakeholders in the criminal justice system (CJS), all DNA profiles shall be compared against the Laboratory Elimination Database (LED) profiles, plus the relevant subset of profiles pertaining to the investigating police force, including medical personnel and profiles of manufacturing staff pertaining to the consumables used by the police force and laboratory/forensic science provider (FSP) (ISO/IEC 17025 ref 4.9 and 5.8.1).

² The National DNA Database is a registered trademark owned by the Secretary of State for the Home Department.

- 6.1.3 Searches against the relevant elimination profile data sets shall also be conducted for profiles that do not meet the aforementioned criteria (for example, a partial profile derived from a mixture) and those being used for investigative purposes (ISO/IEC 17025 ref 4.9 and 5.8.1).
- 6.1.4 Exceptionally, under urgent circumstances results may be communicated prior to the elimination databases check, but the fact that contamination checks have yet to be completed shall be made known to the customer and stakeholders (ISO/IEC 17025 ref 4.4).
- 6.1.5 All instances where a match against an elimination profile is observed shall be investigated (ISO/IEC 17025 ref 4.9 and 4.11). The initial approach shall be on the basis that there is an innocent explanation for the match (See 18).

7. MANAGEMENT OF PERSONNEL WHO POSE RISK OF CONTAMINATION

7.1 Police Personnel

- 7.1.1 The risk of DNA contamination from police personnel has long been recognised and since 2000 a Police Elimination Database (PED) has been in existence. From April 1, 2003 there has been a requirement for all new recruits to provide a DNA sample for inclusion on the PED and since October 2012, for new recruit profiles to be compared against the NDNAD on a one-off basis as part of the vetting procedure.
- 7.1.2 Unfortunately, since its introduction searching the PED for potential contamination events has been ineffective. This is because authorisation had to be given by a senior police officer, and the check is restricted to a manual comparison of a specific PED profile against a particular result from a specific case in which contamination is suspected. Inevitably police personnel profiles have been inadvertently entered on to the NDNAD due to this lack of screening for potential contamination events. The revised approach detailed in this protocol directly addresses these issues.

Management of Profiles from High Risk Personnel

- 7.1.3 High risk individuals shall be screened automatically and routinely against all DNA crime profiles and reference profiles generated from material collected by

their own police force.³ Roles and organisational structures can vary significantly between forces, so each force should conduct its own risk assessment of roles, but in general the following are considered to be high risk.

- a. All scene-going staff: crime scene investigators; crime scene examiners; scenes of crime officers; etc. All such roles are considered high risk even if, for example, the individual in question is solely a footwear-mark examiner or fingerprint officer.
- b. All personnel involved in seizure of exhibits in planned operations, including drugs officers, who may handle exhibits either at the scene or within a laboratory prior to submission for DNA analysis.
- c. Evidence-related property officers, especially those involved in opening exhibit bags and splitting those incorrectly containing more than one exhibit.
- d. Custody officers and others recovering evidence and handling exhibits in custody suites, including those involved in taking buccal scrapes from detainees for submission to the NDNAD.
- e. All personnel involved in handling unpackaged exhibits, i.e. police laboratory staff, including those searching for trace evidence material and screening exhibits.

7.1.4 Given that it has only been a condition of police service since 2003, provision of a sample by staff recruited prior to this date is on a voluntary basis. Police forces must satisfy themselves that all high risk personnel (defined above) have provided a sample. Those not yet on the PED and who do not volunteer a sample shall either be moved to a low risk role, or their terms and conditions of employment shall be changed, through appropriate consultation, to make inclusion on the PED a requirement.

Management of Profiles from Low Risk Personnel

7.1.5 Police roles other than those specifically identified as high risk shall be considered as low risk, for example, members of community policing teams.

³ For certain roles there will also be a requirement to screen profiles generated by bordering forces with whom an individual may undertake overlapping operational activities.

Profiles from low risk individuals shall not be screened unless this is required in particular circumstances, for example, where an officer attends the scene of a serious crime when this is not part of their regular role. Under these circumstances, a record is kept of all attendees entering the scene, as per police policy nationally. As part of the investigation, the Senior Investigating Officer (SIO) or other senior police officer shall typically authorise comparison of profiles from all individuals attending the scene against any recovered crime scene profiles.

- 7.1.6 It is national policing policy that all new police recruits consent to being entered on the PED and are searched against the NDNAD as part of the vetting process. Existing police staff who consent to be included on the PED as a new requirement for their existing role should also be screened against the NDNAD as a one-off exercise.

Additional Non-Police Personnel

- 7.1.7 It is recognised that there are additional groups of non-police personnel, who through their roles may also pose a risk of contamination. These include:
- a. vehicle recovery officers;
 - b. paramedics, doctors, ambulance staff;
 - c. partner agency staff, for example, social services, those involved in securing premises (boarding up doors and windows, etc); and
 - d. personnel working for forensic science providers who do not undertake DNA analysis but do nevertheless examine items (such as mobile phones) that could subsequently be the subject of DNA analysis.
- 7.1.8 Whilst it may not be proportionate to have elimination profiles for all such groups routinely, it is recommended that provision be made for any instance where this could become an issue.

7.2 Medical Personnel

- 7.2.1 All individuals who enter medical examination rooms, post-mortem facilities or any other rooms used for the examination and recovery of evidential material from either living or deceased victims of crime, shall provide DNA samples for elimination purposes. These includes the following groups of individuals.

- a. All staff working within Sexual Assault Referral Centres (SARCs) i.e. medical practitioners, crisis workers, cleaning staff, visitors and individuals, such as family members or friends, who may be present during a medical examination at the request of the victim.
- b. All staff working within post-mortem facilities, including pathologists.

7.2.2 The sampling process, including wording of consent forms, retention criteria and destruction of unused material are as per laboratory/FSP staff and visitors procedures (see sections 7.6, 7.7, 10 and 11). Data recorded are the same as for police personnel records, including the details of the police force(s) for which the medical examinations are undertaken and of the particular facility in question.

7.3 Manufacturing Staff

7.3.1 All parts of the CJS involved in the processing and analysis of DNA evidential material should utilise consumables, where these are available, that are free of detectable human DNA and comply with PAS 377:2012: *Specification for consumables used in the collection, preservation and processing of material for forensic analysis* and when published ISO 18385: *Minimizing the risk of human DNA contamination in products used to collect and analyze biological material for forensic purposes*.

7.3.2 Manufacturers and assemblers of consumables and kits shall establish and maintain an up-to-date collection of DNA profiles from all personnel with access to the manufacturing/assembly work environment and who pose a risk of contaminating the consumables with their own DNA. These can be held in an anonymised form. Ideally a master list shall be maintained as per section 13 for FSP staff. This potentially enables the source of contamination to be pinpointed to a specific individual, which facilitates the adoption of effective improvement and corrective actions.

7.3.3 A risk assessment process should be used to establish the scope of the DNA profile collection. For example, personnel who are involved in physically handling the consumables should be included, as opposed to others who are

only interacting with items after they have been packed into their outer packaging.

7.3.4 The anonymised profiles from manufacturing staff shall be provided to create a Manufacturers Elimination Database (MED). The data format shall meet the requirements for international DNA databases, including the country in which the individual is working as this may impact on the investigation process. Manufacturers may elect to provide this information directly to the MED or may provide DNA samples from the relevant personnel to an accredited DNA profiling provider to undertake profiling and submit the profiles on their behalf, for inclusion on the MED.

7.4 Laboratory Staff/Forensic Science Providers

7.4.1 Each DNA profiling provider/FSP shall establish and maintain a laboratory staff elimination database (LED) against which DNA profiles from casework and reference samples shall be compared for elimination purposes only (ISO/IEC 17025 ref 4.9 and 4.12).

7.4.2 The DNA elimination data shall contain profiles from laboratory trace evidence recovery staff, DNA processing staff, contractors and visitors.

7.4.3 It shall be a condition of employment for new members of laboratory/FSP staff to give written consent to provide a DNA sample for profiling, and for this profile to be held on the LED. Where existing members of staff do not have this requirement in their original employment contract, they shall either give written consent to provide a DNA sample for the LED, or their terms and conditions of employment shall be modified, through appropriate consultation, to include this as a requirement.

7.4.4 Reference DNA samples shall be taken as part of the induction process for new staff and before they enter a DNA sensitive area.

7.4.5 All contractors and visitors who require entry to a DNA sensitive area shall give written consent for their DNA profile to be entered on to the LED and provide reference DNA samples prior to entry. Where possible, they should also be given advance notice of this requirement before arriving on site.

7.4.6 The LED shall also contain unsourced contaminant profiles, these are primarily profiles observed in negative controls and consumable batch tests, i.e. laboratory owned data (ISO/IEC 17025 ref 4.9).

7.5 Unsourced Contaminants

7.5.1 DNA profiling providers/FSPs shall search profiles that are categorised as unsourced (these include negative controls and consumable batch test results) against the MED. Any non-matched profiles shall be submitted to the MED, so that a current pooled collection of these profiles is used to search against profiles from all DNA profiling providers/FSPs. Profiles should meet the minimum load criteria for partial profiles to the MED. This effectively constitutes an unconfirmed supplement to the MED, the value of which is maximised by having the widest possible usage and contribution. This shall be regularly checked to remove duplicate profiles and those for which a source has been identified.⁴

7.6 Sampling

7.6.1 There is no breach of article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms if samples are taken with informed consent as a condition of employment.

7.6.2 The sampling and analysis process is as per the requirements of the profiling provider, who shall be accredited to BS EN ISO/IEC 17025:2005. Once a full designated DNA profile has been generated and quality checks completed, it shall be submitted to the appropriate elimination profile data set, and all unused biological material is destroyed.

7.7 Destruction of Unused DNA Material

7.7.1 Following all quality control checks and confirmation that a full profile has been obtained from a donor, any unused sample, including DNA extract, shall be

⁴ Consideration should be given to the accepted match criteria for determining a match to an individual and the minimum load criteria, any profile containing less than 12 alleles could be adventitious.

destroyed. Unless there are demonstrable⁵ proportionate reasons to retain any unused sample, including DNA extract, it shall not be retained for longer than six calendar months after the sample has been taken. This time period takes due regard of practice set out in legislation for use of DNA samples elsewhere.

7.8 Subject Access

7.8.1 Donors have the right to a copy of their DNA profile. On written request, the organisation shall provide them with a certified copy of their personal information stored on the elimination database. This certified copy can be used as a ‘biometric passport’, removing the need to be re-profiled if, for example, the person moves jobs to a different FSP or requires access to DNA sensitive areas in a different organisation. It will be for the elimination database operator to determine whether a copy of the profile is acceptable and meets their profile requirements for inclusion on their elimination database.

7.9 Archive

7.9.1 Once the period for retaining a profile on the live elimination database has elapsed for staff exiting the CJS (10.1.3) then the data shall be stepped down by either removing the individual’s name or transferring the record to an archive.

7.9.2 The archive record should be retained for up to 30 years in order to be available for:

- a. checks against cold cases; and
- b. appeals and judicial reviews.

Retention periods are set out in the code of practice issued under the Criminal Procedure and Investigations Act 1996 (CPIA) for England and Wales. As cases have been tested for DNA after 20 years, then the minimum retention period shall be 20 years (ISO/IEC 17025 ref 4.1.2).

⁵ Consent from the donor to retain their sample for an extended period or for additional profiling is a legitimate reason for longer sample retention periods.

7.9.3 Access and searching shall be restricted (9.1.17) only for the purposes stated above (7.9.2).

7.9.4 The requirement for the archive and the retention period shall form part of the consent required from staff working within the CJS in England and Wales.

7.10 Business Continuity

7.10.1 In order for elimination databases operating for staff within the CJS in England and Wales to meet the provision to provide checks against cold cases, appeals and judicial reviews, then In the event of closure or ceasing to provide the elimination database screening service, the organisation shall have in place a process to archive and transfer the data to an agreed authorised provider or archive (Codes 6).

7.10.2 The requirement to transfer the data shall be built into the consent form (10.1.4).

8. THE USE AND MANAGEMENT OF DNA ELIMINATION DATABASES

8.1.1 A unified approach to the organisation and use of DNA elimination databases comprising locally, nationally (centrally) and internationally managed DNA elimination databases should be agreed. The sole purpose of this is to detect potential contamination from personnel involved in the manufacture of consumables (swabs, tubes, etc.), and the collection and processing of the DNA samples.

8.1.2 Elimination profile data sets shall be established and maintained within which the profiles of the following groups shall be held and compared against crime stain and reference DNA profiles purely for the purposes of identifying potential DNA contamination events (ISO/IEC 17025 ref 4.9 and 4.12).

- a. Laboratory/FSP staff undertaking processing of evidential samples, and any visitors to the facility who pose a risk of contaminating the DNA samples processed within the organisation, for example, laboratory staff elimination data set – LED.
- b. Police personnel, both officers and civilian staff, for example, national (central) staff elimination data sets – PED.

- c. All medical staff including forensic medical examiners, sexual assault referral centre personnel, pathologists, and doctors directly or indirectly involved in recovery of evidence from victims of crime, both living and dead, or from arrested suspects (e.g. national (central) staff elimination data sets - MedExD).
- d. Personnel directly involved in the manufacture and assembly of consumables used in the collection, preservation and processing of material in order to generate DNA profiles (e.g. national (central) or international staff elimination data sets - MED).

8.1.3 Each of these groups shall be held within separate sub-databases, which shall be maintained completely separately from the NDNAD in compliance with ISO 27001 Information Security Management.

8.1.4 The rationale for having laboratory elimination databases for DNA profiling providers/ FSPs is that these contain profiles of individuals who pose a risk of contamination at a single site or by a single organisation only.

8.1.5 Conversely the PED, MedExD and MED contain profiles from police and other staff which over time may require checking against different FSP submissions depending on changes in service provider contracts, plus some staff may work for two or more forces who may also use different/multiple FSPs to process their samples. FSPs and Forces may also over time change their consumable suppliers. Hence elimination databases for these groups are ideally managed nationally (centrally) or internationally with access for searching by multiple forensic DNA profiling providers/FSPs.

8.2 Interface with International MEDs

8.2.1 Consumables used in the processes of sampling and DNA profile production are widely used by the police, laboratories/FSPs globally; many examples of profiles from manufacturing staff having been observed in multiple countries have been documented. With increasing sharing of biometric data including DNA across borders, particularly in Europe as a result of the Prüm decisions, sharing of information regarding contamination is becoming ever more important if the integrity of the DNA comparisons is to be assured.

8.2.2 The DNA Working Group of the European Network of Forensic Science Institutes (ENFSI) is continuing to work towards shared manufacturers and unsourced contaminants databases. The forensic DNA community and FSPs should collaborate with such international initiatives, particularly in sharing unsourced contaminant profiles, including collaborations to have reciprocal agreements for facilitating searching of locally or centrally held MEDs and unsourced contaminant profile records by UK and international forensic DNA profiling laboratories/FSPs as appropriate for criminal justice system purposes.

9. RESPONSIBILITIES AND CODE OF CONDUCT

9.1.1 All parties within the CJS involved either directly or indirectly in the processing of DNA samples should recognise that contamination of samples and potential inclusion on the NDNAD is an occupational hazard for workers within the CJS, and that employers have a duty of care to employees to minimise the risk of this happening. Whilst the occurrence of contamination from personnel within the CJS can be minimised through the adoption of appropriate anti-contamination measures, this risk cannot be completely eliminated. Hence effective management of contamination requires a combination of actions both to minimise the frequency of occurrence and maximise the chances of its detection through the use of effective elimination databases (ISO/IEC 17025 ref 4.9 and 4.12).

9.1.2 All personnel should be given the option, if they wish, for their profile to be subject to a one-off search against the NDNAD (ISO/IEC 17025 ref 4.9). This is in response to a legacy issue where people working within the CJS may have been at high risk of contaminating evidential material prior to the implementation of comprehensive and effective DNA elimination checks. For police personnel this is covered in section 7.1, but should also be extended to other groups, including medical personnel.

9.1.3 All matches against DNA elimination databases shall be investigated (ISO/IEC 17025 ref 4.11) and all investigations shall be undertaken from a standpoint that the match has arisen due to an inadvertent contamination or other innocent circumstances; past experience has demonstrated this to almost always be the

case.⁶ Further use of the matching reference or crime stain profile shall be put on hold until the investigation has been completed.

- 9.1.4 All investigations shall be undertaken sensitively and discretely by nominated individuals. The individual being investigated (where known) shall be kept informed of the progress of the investigation, and the exercise should be undertaken as a means to identify potential improvement actions rather than as a route to disciplining staff, unless it transpires that the individual has repeatedly failed to follow written procedures. Even when anti-contamination procedures have been correctly followed, contamination events are known to occur through no fault of the individual concerned. For example, some people are more prone to shed DNA than others and therefore more at risk than others of contaminating. *In extremis* this can result in an individual repeatedly contaminating with their own DNA despite wearing appropriate protective clothing and correctly following procedures. In these circumstances the individual should be moved to a different role.
- 9.1.5 Where the FSP has conducted an investigation and the investigator is satisfied that the observed match is explicable through contamination, the police customer shall accept this outcome and the identity of the individual shall not be disclosed; only the alleles in the person’s profile that match the crime stain shall be included in any contamination report.
- 9.1.6 Only in the rare event that the investigation concludes that the match is not explicable through contamination or other innocent means, it may be necessary, depending on circumstances, for the name of the individual (where known) concerned to be divulged to the police via a single point of contact, in order to facilitate further investigation for elimination purposes.

⁶ The Forensic Science Service maintained a comprehensive elimination database comprising both staff and personnel from consumables manufacturers. Over a period of more than a decade several million crime and reference DNA samples were processed and routinely compared against this elimination database. Virtually all observed matches were attributable to contamination occurring either within the laboratory or manufacture of consumables. Only two instances could not be attributed to contamination. On investigation, these were both found to be due to items that were attributable to members of staff being associated with a crime scene by innocent means.

- 9.1.7 DNA profiling providers/FSPs and manufacturers shall work together collaboratively to address the issue of contamination of consumables. The fact that contamination cannot be completely eliminated should be the guiding principal. Detection of this contamination should be used by FSPs as an opportunity to provide regular feedback to manufacturers to enable continuous review and improvement of their quality procedures (ISO/IEC 17025 ref 4.10), rather than as a reason to undertake legal action against the manufacturer for provision of a non-conforming product.
- 9.1.8 It is the responsibility of police forces to provide up-to-date data to the PED, including changes to records and search parameters to ensure that, as far as is practicable, screens continue to be restricted to all relevant individuals and no others. These changes include the following:
- a. PED records, reflecting movement of police personnel from one force to another or exiting the CJS;
 - b. medical staff records, reflecting any changes of the medical staff utilised by a force.
- 9.1.9 Police forces and search/trace evidence recovery laboratories shall provide their DNA profiling providers/FSPs with up-to-date information on the consumables that they use so that the relevant manufacturing staff can be searched against these.
- 9.1.10 It is the responsibility of DNA profiling provider/FSP to maintain an up-to-date LED (ISO/IEC 17025 ref 4.1.2).
- 9.1.11 It is the responsibility of manufacturers to determine the user communities in addition to forensic DNA profiling laboratories that are authorised to check against their elimination profile records; these may, for example, include organisations that provide testing for them, produce reference DNA materials or generate proficiency test samples.
- 9.1.12 It is the responsibility of manufacturers to provide up-to-date data to the MED (i.e. new profiles, removal of old profiles, update of details, etc).
- 9.1.13 It is the responsibility of the MED operator(s) to establish the user communities in addition to forensic DNA profiling laboratories that are authorised by the

manufacturers to check against the elimination profile records being held and processed on their behalf.

- 9.1.14 It is the responsibility of the elimination database operator(s) to ensure that they are registered with the Information Commissioner's Office (ICO) unless they are exempt, as failure to do so is a criminal offence.
- 9.1.15 It is the responsibility of the elimination database operator(s) to establish ownership of the data, whether they are the data owner (for example, data from their own staff), the data processor (for example, holding and processing data from other organisations) or both, and ensure compliance with the Data Protection Act 1998 (ISO/IEC 17025 ref 4.1.2 and Codes 20.18.3).
- 9.1.16 It is the responsibility of the elimination database operator(s) to demonstrate that the software and algorithms used are appropriate and fit for purpose (Codes 20.18.4, 21.1 and ISO/IEC 17025 ref 5.4.5 and 5.5).
- 9.1.17 Security of the elimination database records shall be maintained by enforcing restricted access to nominated authorised individuals, and through working practices that ensure compliance with the Data Protection Act 1998. The data shall be backed up and transmitted in accordance with the HMG Security Policy Framework (ISO/IEC 17025 ref 4.1.2 and 5.7 ; Codes 20.18, 20.18.2 and 20.18.3).
- 9.1.18 Police and laboratory/FSP procurement functions must ensure that consumables purchased for the collection, retention and processing of DNA samples comply with PAS 377, where these exist and are appropriate (ISO/IEC 17025 ref 4.6).
- 9.1.19 It is the responsibility of laboratories/FSPs and police forces to inform their consumable suppliers of the requirement for the manufacturing staff to provide elimination DNA profiles to the MED as appropriate.
- 9.1.20 DNA profiling providers/FSPs shall provide the MED with regular updates of contamination profiles that are categorised as unsourced, so that a current pooled collection of these profiles is used to search against profiles from all FSPs. This effectively constitutes an unconfirmed supplement to the MED, the

value of which is maximised by having the widest possible usage and contribution (ISO/IEC 17025 ref 4.9).

10. CONSENT FORM (see 25)

10.1.1 All individuals entered on to an elimination database shall sign and date a consent form that confirms the basis on which a sample is provided, which includes but is not limited to the following.

- a. The organisation is authorised to collect a DNA sample and generate a DNA profile from it.
- b. The organisation shall provide a written explanation with the consent form explaining the management of the elimination database, including how investigations are conducted in the event of a match and arrangements for retention and removal of profiles.
- c. The results will be used solely for comparison with profiles generated from casework or reference samples in order to detect contamination incidents. Where contamination is observed, investigations are targeted towards identifying improvements rather than disciplining staff.
- d. The organisation will retain a copy of the results of the tests performed on the sample, ideally with the metadata and profile stored separately and not easily accessible except by a restricted number of staff to conduct investigations. The organisation will not disclose the information in any way other than as authorised in the consent form, or as may be required by law.
 - i. Specific authorisation may be sought on the form for limited disclosure of the profile to other accredited forensic providers where necessary, and following agreement between the respective Human Resources (HR) departments (see section 21).
 - ii. In the event of the operator of the elimination database ceasing to operate the data are transferred to another authorised operator or archive.

10.1.2 The individual is agreeing to provide a DNA sample on a voluntary basis if it is not part of their terms and conditions of employment, and the profile will not be

uploaded to the NDNAD nor compared against it except with their explicit permission, although the latter is strongly recommended for individuals exiting employment within the CJS.

- 10.1.3 Profiles will be retained until the individual no longer poses a risk of contamination once they have left the DNA process chain. The shelf life of manufactured consumables should be considered for determining the retention period of manufacturing staff data. Laboratory contamination with an 18 months interval has been observed; therefore unless contamination incidence data provide evidence to the contrary, then as a minimum profiles shall be retained for searching for 18 months after leaving the organisation for staff, or in the case of contractors/visitors 18 months after last entering a DNA sensitive area.
- 10.1.4 After the specified time the individual's profile shall be stepped down in the live elimination database or transferred to a restricted archive database for cold case review appeals and judicial reviews use only. If this is not part of their terms and conditions then consent shall be required from staff wishing to work within the CJS in England and Wales.
- 10.1.5 If there are any specific proposals to vary the basis on which the data are held or processed, a further specific written consent would be required from the individual who originally provided the profile.

11. INFORMATION RECORDED AND RETAINED ON ELIMINATION DATABASES

11.1 Data Format

- 11.1.1 As a minimum, entries of information shall use a data format and other configuration parameters should be closely aligned to those defined in the 'DNA chapter 1' of the annex to the European Union Council Decision 2008/616/JHA used for the Prüm DNA data exchange and applications. This allows for interoperability between different elimination databases.
- 11.1.2 Only MED and unsourced profiles shall be shared between countries.

11.2 Data Fields

11.2.1 Each entry shall as a minimum include the following information:

- a. a reference number unique to the individual;
- b. country code;
- c. the organisation for which the individual works/data owner;
- d. the multiplex kit used;
- e. profiling organisation (if this is different to organisation that the individual works for and is authorised by the data owner to load, amend, delete that profile and for follow-up profile queries);
- f. sample category (for example, manufacturer, police, medic, contractor, visitor, or an unsourced profile);
- g. a full designated short tandem repeat (STR) DNA profile provided by an ISO/IEC 17025 accredited DNA profile provider;
- h. for local and national (central) elimination database profiles – utilising the current standard multiplex in use and that meets the allele reporting requirements determined from the validation of the method used or the load criteria set for the NDNAD;
- i. for MED profiles – utilising a multiplex that provides comprehensive coverage of the European Standard Set of loci (ESS) and Combined DNA Index System (CODIS) loci in use globally. This is to account for the fact that consumables will be used for processing samples using any number of STR multiplex kits and will allow any users of these consumables to carry out meaningful searches for manufacturer contamination regardless of which STR profiling system is used by them; and
- j. the exception is for unsourced contaminants – as a minimum this shall be a partial profile utilising the current standard multiplex in use that meets the criteria set by the DNA profiling provider/FSPs for searching their LED for matches, and may be lower than the criteria for loading to the NDNAD. For those profiles to be added to the MED, the minimum load criteria set for the MED shall be met. It is recommended when appropriate for inclusion on the MED that re-profiling is undertaken, utilising a multiplex

providing comprehensive coverage of the ESS and the CODIS loci in use globally.

- 11.2.2 Consideration should be given to data fields that indicate archive and deletion dates and a flag for records where the profile is anonymised that any match against that record will not necessarily be traceable to the individual.

12. LEGACY PROFILES

- 12.1.1 For existing elimination databases the profiles will have been generated using STR multiplexes that have been superseded by more sensitive discriminating STR profiling technology, therefore consideration should be given to re-sampling staff and upgrading profiles if at all possible. The discriminating power of the legacy profiles will have a bearing on the searching and matching regime used against these profiles.

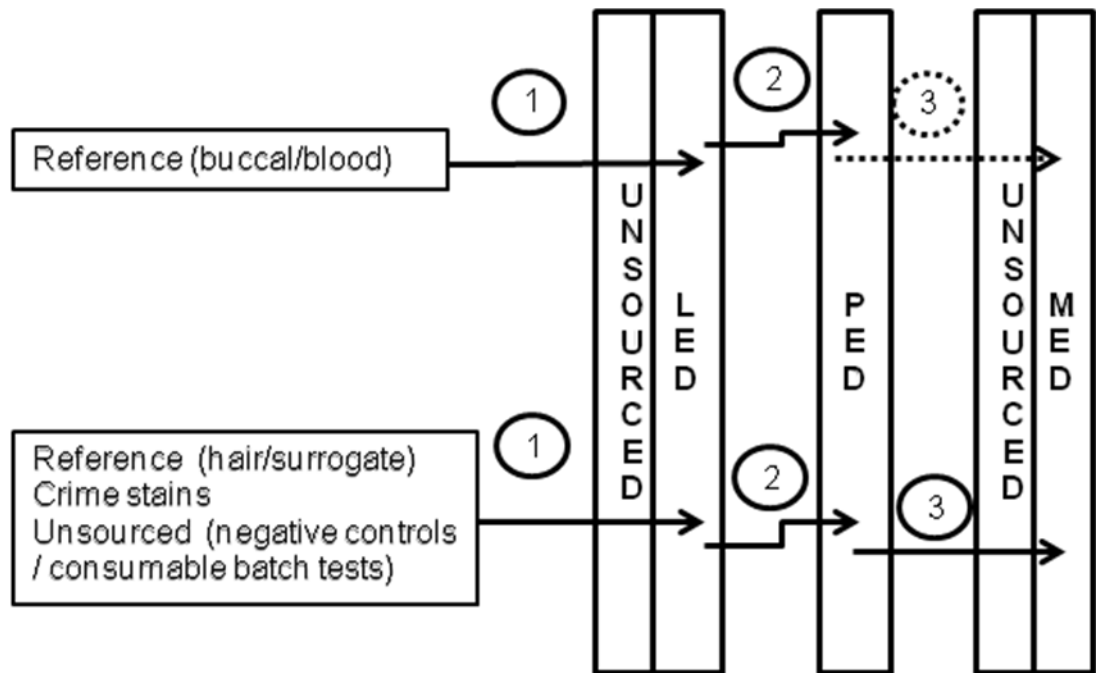
13. ADDITIONAL RETAINED INFORMATION

- 13.1.1 HR shall maintain a master list in which the names of individuals are linked to the unique reference number held within a secure system. Data shall be maintained in compliance with the Data Protection Act 1998 (ISO/IEC 17025 ref 4.1.2 and 5.4.7; Codes 20.18.1 and 20.18.3). Access to this list shall be protected and available to only a few nominated authorised individuals permitted to search the data when a specific contamination incident is being investigated.
- 13.1.2 For manufacturers outside the UK, where national legislation would prevent the name of the individual to be held, then information as to the parts of the manufacture process they are involved in can be recorded to aid identifying possible areas for quality improvements should there be a match against the anonymised profile record.

14. SEARCHES AGAINST ELIMINATION DNA PROFILE RECORDS

- 14.1.1 All profiles, either single source or component(s) of interest in interpreted mixtures, casework or reference, shall be compared against the relevant laboratory/FSP staff elimination profiles held on the LED, plus the relevant subset of profiles pertaining to the investigating police force, including medical

personnel, unsourced and manufacturing staff profiles pertaining to the consumables used by the police force and laboratory/FSP (ISO/IEC 17025 ref 4.9 and 4.12) (also see section 6). The schematic for checking against elimination databases is shown in Figure 2.



③ → Local legislation/policy may not permit profiles from individuals to be exported, i.e. search against an international MED not permitted

Figure 2 Example schematic for elimination database screening

15. MATCH REGIME

15.1.1 The searching and matching regime shall optimise the identification of contaminating profiles but minimise the number of adventitious matches. The regime shall take into account the number of alleles that an FSP will use to report:

- a. a statistical match probability to the court;

- b. the minimum load criteria for the local⁷, national and international databases;
- c. the number of elimination records held in the elimination database;
- d. the discriminating power of the elimination DNA profiles held; and
- e. in particular, any legacy profiles and the STR multiplex kit(s) used to generate the profiles being compared.

15.2 Same Short Tandem Repeat (STR) Polymerase Chain Reaction (PCR) Chemistry/Multiplex

- 15.2.1 For searches against profiles generated using the same PCR chemistry/multiplex, demonstrable consideration shall be given to high stringency searching and searching to accommodate for profile anomalies, such as allele mis-designation or omission and the rarer event of a somatic mutation.
- 15.2.2 Demonstrable consideration should be given to ensuring that the searching of profiles is conducted on numbers of alleles that maximise the chances of detecting contamination, yet also minimise the numbers of false positives generated (Codes 20.18.4 and ISO/IEC 17025 ref 5.4.5).
- 15.2.3 For a highly discriminating search profile then high stringency matching with an N-1 routine shall be undertaken. N-1 means that the search profile can contain a single designated allele difference at one locus and is not position specific (i.e. can be in either the high or low molecular weight position). The partiality of the profile where N-1 searching is unsuitable should be determined using the considerations listed in 15 (for example, for search profiles with less than 8 alleles present against the LED and less than 10 alleles present against the CED and MED).

⁷ The load and search criteria for the LED can be less than that permitted for loading and searching against the CED and MED, as the LED will contain fewer profiles to search against thus will have a higher tolerance to adventitious matches for partial profiles. This will allow for the identification of profiles that are more prevalent but difficult to identify due to the partial nature of the profiles.

15.3 Different Short Tandem Repeat Polymerase Chain Reaction (PCR) Chemistries/Multiplexes

- 15.3.1 For searches against profiles generated using different PCR chemistries/multiplexes, demonstrable consideration shall be given to high stringency searching and searching to accommodate for profile anomalies such as allele mis-designation or omission and the rarer events of non-concordance and somatic mutations (Codes 20.18.4 and ISO/IEC 17025 ref 5.4.5).
- 15.3.2 For a partial search profile determined to be unsuitable for N-1 searching as per 15.2.3 then high stringency matching shall be undertaken.
- 15.3.3 For a discriminating search profile (for example, 11 to 16 alleles present) then high stringency matching with an N-1 routine shall be undertaken. N-1 means that the search profile can contain a single designated allele difference at one locus and is not position specific (i.e. can be in either the high or low molecular weight position).
- 15.3.4 For a highly discriminating search profile (for example, 17 or more alleles present) then high stringency matching with an N-2 routine shall be undertaken. N-2 means as a minimum that the search profile and the retained elimination database profile contains a single designated allele difference at one locus, of which the loci could be different for each profile and is not position specific (i.e. either high or low molecular weight allele). The relevance of two differences in a crime stain profile of interest compared with an elimination profile should be considered as a targeted N-2 search condition (for example, for use on search profiles derived from component(s) of interest in interpreted mixtures). The N-2 routine could automatically produce N-1 matches.

16. REPORTING MATCHES

- 16.1.1 A match to a crime stain/reference DNA profile shall be reported directly to the search requester, typically the DNA profiling provider/FSP, on generation of the match.
- 16.1.2 All demographic information, except for the individual’s name (if it is held) and the search profile submitted alongside the matching loci (including the N-1, N-2 near match) of the nominated profile shall be provided with a unique match

reference number, to allow for the distinction between repeat profile searches and for audit, tracking and follow-up purposes.

16.1.3 Following the investigation (see section 18) of the match the organisation shall provide feedback as to the outcome of its investigation to relevant stakeholders.

17. MANAGEMENT INFORMATION

17.1.1 Records shall be maintained (ISO/IEC 17025 ref 4.13.2, 5.4.7 and the Codes 20.18) of all reported matches and outcomes of the investigations reported. Reviews of contamination rates and trends shall be periodically undertaken as appropriate within the laboratory/FSP quality management review meeting (ISO/IEC 17025 ref 4.15).

17.1.2 Records shall be maintained of the matches and outcomes of the investigations and made available on request to the Forensic Science Regulator/designated representative or nationally authorised forensic assurance unit for appropriate reviews/analysis/monitoring of contamination rates and trends.

18. INVESTIGATION PROCESS

18.1.1 All instances where a match against an elimination database profile is observed shall be investigated. The default position is that there is an innocent explanation for the match.

18.2 Match of Reference (Police and Criminal Evidence Act 1984) Sample to a Laboratory Staff Elimination Profile Record

18.2.1 An investigation shall be undertaken to determine if contamination occurred during processing of the Police and Criminal Evidence Act 1984 (PACE) sample, and full records shall be maintained of all instances, investigative steps taken, conclusions drawn and subsequent corrective actions taken. Throughout the investigation, the individual member of staff should be kept fully informed of progress. Investigations may include one or both of the following steps, depending on the circumstances:

- a. the investigation may include processing the second sample (swab), where this still exists due to the constraints of PACE as modified by the Protection of Freedoms Act 2012, as a quality assurance measure; and
- b. if the match was against a member of staff involved in the processing of reference samples, they should not be involved in the reprocessing of the second sample.

18.2.2 If the profile obtained from the second sample does not match the profile from the first, attempts should be made to determine the point at which contamination occurred, by re-extracting and re-amplifying sample 1 and/or re-amplifying the DNA extract from sample 1.

18.2.3 If the profiles from the first and second samples match, this indicates that contamination may not be the only explanation. The DNA profile result shall be loaded to the NDNAD once the National DNA Database Delivery Unit (NDU) has confirmed that the match is not due to the individual being a donor of a quality assurance (QA) sample used in an NDU blind trial.

18.3 Match of Scene of Crime Profile to a Laboratory Elimination Database Profile Record

18.3.1 An investigation shall be undertaken to determine if contamination occurred during processing of the scene of crime (SOC) sample within the laboratory environment, and full records shall be maintained for each investigative step taken, conclusions drawn and subsequent corrective actions taken.

18.3.2 Investigations may include some or all the following steps depending on the circumstances:

- a. the investigation may include re-working of the original material, for example, by re-electrophoresis, re-amplification or re-extraction from the stored extract component;
- b. if the match was against a member of staff involved in the processing of SOC samples they should not be involved in the re-working; and
- c. where appropriate, a deep clean should be conducted of the laboratories where the contamination may have occurred and where any re-processing takes place, before re-processing is undertaken.

- 18.3.3 If the profile obtained from the re-work no longer matches the original profile (if a single source) or in the case of a DNA mixture no longer contains the components that matched, the re-work result may be used for casework analysis or for NDNAD applications, provided all the other required quality criteria are met.
- 18.3.4 If the profile remains unchanged on the re-working of the original material, then the original item should be re-examined and, where possible, attempts should be made to re-sample, i.e. take a new previously unprocessed part of the material, for example, a different area of the same stain or other discrete source of biological material.
- 18.3.5 If the re-sampled material no longer matches the original elimination profile record the re-work result may be used for casework analysis or for NDNAD applications, provided that all other required quality criteria are met.
- 18.3.6 If the re-sampled material still provides a profile that matches against the original elimination profile record, another item linked to the same case or a different stain from the same item should be sought and processed, if these options exist.

19. FOLLOW-UP ACTIONS IN THE EVENT OF A CRIME STAIN MATCH AGAINST A LABORATORY ELIMINATION DATABASE PROFILE RECORD

19.1 Actions Where Contamination is a Feasible Explanation for the Observations

- 19.1.1 In virtually all circumstances where the profile from an individual matches that from an exhibit that they have had either direct or indirect exposure to, it is reasonable to believe that this has arisen through innocent means, of which contamination is the likely cause.
- 19.1.2 The investigation process outlined in 18.3.2 is designed to elicit information regarding the probable mechanism by which contamination may have occurred. However, not all investigations into instances of matches against the laboratory staff elimination profile can be completed, for example, if insufficient material remains to enable re-work to be undertaken, or only a partial profile can be

generated. Under these circumstances the conclusions drawn should also be that contamination is the likely cause, but that it cannot be proven. As a guide the following actions should be considered.

- a. Notify all relevant staff (for example, the individual involved, their line manager, the quality leader, and other senior managers as dictated by the severity of the impact of the contamination on the outcome of the investigation. It is not necessary to disclose the name of the person involved to staff or senior managers that are not relevant to the investigation.
- b. Inform the person involved in the match, or where this person’s sample has been anonymised, the organisation for which they work.
- c. Document that contamination may have occurred on the case-file, together with the summary of the investigation (ISO/IEC 17025 ref 4.13.2).
- d. Record the incident in the laboratory contamination log (ISO/IEC 17025 ref 4.13.2). This should be regularly reviewed to identify trends in contamination and potential improvements to reduce the risk of recurrence. These actions should be captured within the improvement and corrective action process, the operation of which is a requirement of ISO/IEC 17025 (ref 4.11).

19.2 Actions Where Contamination is Not a Plausible Explanation for the Observations

- 19.2.1 Circumstances in which contamination is not a plausible explanation for a match are extremely rare.
- 19.2.2 Typically this is where a discrete item, such as a piece of chewing gum or blood stain, is of sufficient size and DNA yield to enable re-sampling from a separate part of the same item, and this repeatedly yields a full DNA profile matching against the LED. Under these circumstances (assuming it is not a QA sample used in an NDU blind trial), the following actions may be required, with the individual in question, where known, kept fully informed throughout.

- a. Disclosure to the investigating police force of the name of the individual concerned where this is known (for example, a member of staff of the FSP).
- b. Disclosure of the organisation for which the matching individual works, where their name has not been provided to the FSP, for example, sub-contractors.
- c. Depending on the circumstances of the case, the police may wish to make further inquiries with the individual in question in order to eliminate them from the investigation.
- d. Disclosure of the incident to senior managers within the relevant FSP, with subsequent actions according to the organisation’s HR procedures.
- e. At the conclusion of the investigation a decision should be made in conjunction with the police force on whether the crime profile should be entered on the NDNAD.

20. BROADER CONSIDERATIONS IN CONTAMINATION INVESTIGATION

- 20.1.1 Knowledge regarding the mechanisms by which DNA contamination can occur is still developing and will continue to do so in line with the evolution of increasingly sensitive DNA profiling technology.
- 20.1.2 Investigations into contamination events should not just focus on the processing of exhibits for DNA analysis and the events within the rooms in which samples have been processed, but should take a wider view of activities within the entire building. For example, any activities including inspection, cleaning or maintenance of air management systems within the same building, even if remote from DNA clean areas, or any other kind of structural perturbation of the building, increases the risk of contamination occurring. This risk should be addressed by additional non-routine deep cleaning and environmental monitoring as required.

21. COLLABORATIVE CONTAMINATION CHECKS BETWEEN FORENSIC SERVICE PROVIDERS

- 21.1.1 Where an accredited DNA profiling provider/FSP is undertaking analysis on material previously examined by a different DNA profiling provider, it may be

necessary to check any new profiles generated against the LED of the original examining FSP. Where this is undertaken, the crime stain profile shall be provided to the original examining DNA profiling provider/FSP for an LED search. Where a match is observed, release of the information is limited to the alleles shared with the crime profile, provided the consent form has explicitly allowed for such disclosure (section 10).

22. MATCH OF REFERENCE (POLICE AND CRIMINAL EVIDENCE ACT 1984) SAMPLE OR CRIME STAIN TO A POLICE ELIMINATION DATABASE PROFILE RECORD

22.1.1 The Investigating Officer (IO) and where appropriate the Scientific Support Manager (SSM) shall be informed that a match to a crime stain/reference DNA profile has been obtained against a police staff elimination profile, disclosing demographic and matching profile information as agreed in the consent form.

22.1.2 It is the responsibility of the police force(s) involved in the match to investigate and advise the reporting DNA profiling provider/FSP whether or not contamination is the accepted explanation for the match and agree any follow-up actions and reporting requirements as necessary.

23. MATCH OF REFERENCE (POLICE AND CRIMINAL EVIDENCE ACT 1984) SAMPLE OR CRIME STAIN TO A MANUFACTURING STAFF ELIMINATION PROFILE RECORD

23.1.1 The IO and the force single point of contact (SPOC) shall be informed that a match to a crime stain/reference DNA profile has been obtained against a manufacturing staff elimination profile, providing matching profile information as agreed in the consent form.

23.1.2 Consideration should be given to whether contamination is the accepted explanation, particularly if the consumable manufacturer is not UK-based. The DNA profiling provider/FSP shall advise the police force if any follow-up investigation should be undertaken for the match, and agree any follow-up actions and reporting requirements as necessary.

23.1.3 The manufacturer shall be informed that a match to a crime stain/reference DNA profile was obtained against one of their staff elimination profiles, providing matching profile information as agreed in the consent form, to enable continuous review and improvement of its quality and staff training procedures.

24. STATEMENT/REPORT

24.1.1 Should the police require a statement in the case, a contamination report (ISO/IEC 17025 ref 5.10) should be attached to the statement.

- a. Neither the contamination report nor the statement must identify the person involved by name.
- b. The statement should explain the principles by which the appropriate LED, PED or MED operates and the nature of investigations undertaken when a match occurs.
- c. The statement should include wording along the lines of:
“The result/components of the DNA profile obtained from item x has matched a DNA profile held on the Laboratory Elimination Database/Police Elimination Database/Manufacturers Elimination Database. As the result the component of the mixture relates to an individual involved with the laboratory analysis/sample handling/manufacturing process, the profile/component of the mixed profile can be assumed to be the result of laboratory/scene/manufacture contamination. As such, it has been treated as having no evidential value and has not contributed to my interpretation”.

25. ELIMINATION DATABASE CONSENT FORM TEMPLATE

1. I recognise that in the course of my employment or during my attendance at a scene or visiting a facility processing forensic material, I may come into contact with (*select as appropriate*):
 - items, samples or extracts on which DNA analysis may be required;
 - consumables to be used in the collection, storage and processing of samples for DNA analysis.

As such there is a possibility that I could inadvertently contaminate these with my own DNA and this could give misleading results.

2. I therefore volunteer to provide a *buccal/saliva* sample for DNA profiling, and I agree to this profile being held on the *Laboratory/Police/Medical/Manufacturers /Central (select as appropriate)* Elimination Database.
3. I also agree to this database being used by the *Laboratory/Police/Medical/Manufacturers /Central (select as appropriate)* Elimination Database administrators and authorised forensic science providers to check against profiles generated for intelligence or evidential purposes for contamination, where I have had an opportunity to cause contamination, prior to their being loaded on to the National DNA Database or used for casework reporting purposes.
4. I understand that routinely this will involve the checking of each profile generated for criminal justice purposes against relevant staff, scene attendee, contractor and visitor profiles from site or sites where the item, or sample derived from it, or consumables used in the processing of the sample, have been handled.
5. I understand that should I withdraw my consent, my profile will be removed and destroyed 18 months or sooner after I cease to pose a contamination risk as defined in paragraph 1 above, and I will be notified of this destruction in writing.
6. I attach the following conditions to my agreement.
 - 6.1. My DNA profile must not be used for any other purpose than the investigation of the possibility of accidental contamination.
 - 6.2. Access to information to link my DNA profile with me must be on a strict need to know basis, and all reasonable steps must be taken to eliminate any adventitious match with my DNA profile by analysis at additional loci.
 - 6.3. Should my DNA profile match that of a sample from a scene of crime, this will have to be disclosed to the investigating officer, who will assume it to be the result of contamination if this is a reasonable explanation.
 - 6.4. Once I cease to pose a contamination risk as defined in paragraph 1 above, my profile should be *transferred to a secure archive restricted for cold cases, appeals and judicial reviews/removed (delete as appropriate)*.
 - 6.5. Should the *Laboratory/Police/Medical/Manufacturers /Central (select as appropriate)* Elimination Database cease to operate, then my DNA profile should be transferred to *another approved elimination database/authorised archive/removed and destroyed (select as appropriate)*, and I will be notified of this in writing.

Donor (name) _____ Witness (name) _____
Signature _____ Signature _____
Date _____ Date _____

26. ACKNOWLEDGEMENTS

26.1.1 The Forensic Science Regulator acknowledges the invaluable assistance of the following in the preparation of this document:

- a. Dr Timothy Clayton;
- b. Cellmark Forensic Services;
- c. Forensic Archive Ltd;
- d. Forensic Science Service Ltd;
- e. Forensic Science Northern Ireland;
- f. Home Office Forensic Science Regulation Unit.
- g. Key Forensics;
- h. LGC Forensics;
- i. National DNA Database Unit;
- j. Scottish Police Services Authority;⁸

27. REVIEW

27.1.1 This document is subject to review at regular intervals.

27.1.2 If you have any comments please send them to the address as set out on the Internet site at www.gov.uk/government/organisations/forensic-science-regulator or email: FSREnquiries@homeoffice.gsi.gov.uk

28. FURTHER READING

BS EN ISO/IEC 17025:2005 (2005) *General requirements for the competence of testing and calibration laboratories.*

⁸ The Scottish Police Services Authority has now become part of the Scottish Police Authority.

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The Special Constables Regulations 1965 Amendment 1ZA.

29. ABBREVIATIONS

Abbreviation	Meaning
ACPO	Association of Chief Police Officers of England, Wales and Northern Ireland
BS	British Standard
CED	Central Elimination Database
CJS	criminal justice system
CODIS	Combined DNA Index System: the USA National DNA Database
CPIA	Criminal Procedure and Investigations Act 1996
CSI	Crime Scene Investigator
DNA	deoxyribonucleic acid
EN	European Standards
ENFSI	European Network of Forensic Science Institutes
ESS	European Standard Set of Loci

FSP	forensic science provider
HR	Human Resources
ICO	Information Commissioner’s Office
IEC	International Electrotechnical Commission
IO	Investigating Officer
ISO	International Organisation for Standardisation: a network of the national standards institutes of 157 countries
LED	Laboratory Elimination Database
MED	Manufacturers Elimination Database
MedExD	Medical Examiners Elimination Database
NDU	National DNA Database Delivery Unit
PACE	Police and Criminal Evidence Act 1984
PAS	publically available specification
PCR	Polymerase Chain Reaction
PED	Police Elimination Database
QA	quality assurance
QC	quality control
SARC	Sexual Assault Referral Centre
SIO	Senior Investigating Officer
SOC	scene of crime
SPOC	single point of contact

SSM	Scientific Support Manager
STR	short tandem repeat

30. GLOSSARY

DNA contamination

The introduction of DNA, or biological material containing DNA, to an exhibit during or after its recovery from the scene of crime or a person.

Elimination database

A collection of DNA profiles used solely for the purposes of detecting potential contamination events.

Forensic science provider

Organisation that undertakes any part of the DNA sample recovery and analytical process on behalf of the police or other CJS customers.

Police and Criminal Evidence Act 1984 samples

Reference DNA samples taken under the provisions of the Police and Criminal Evidence Act 1984 (PACE) and accompanying codes of practice, that provide the core framework of police powers and safeguards around stop and search, arrest, detention, investigation, identification and interviewing detainees.

Un sourced contaminant

A DNA profile identified as a contaminant for which the source has not been identified. Historically most have been found to come from manufacturing staff.