

Deviation Request Form (DRF)

Directions: The Initiator will complete Sections A through C. Additional continuation pages can be included if necessary.

Initiator	Katy Schell	Date	11-25-2019
A. Requested deviation applies to (Technical Procedure – include specific section):			
<p>Technical Procedure for Drug Chemistry Analysis - Version 13 5.5.1 - Analytical Scheme for Plant Material 5.5.17 & 5.5.18; 5.5.14.5 5.6.1 - The results for identified substances from a single unit exhibit shall be reported with the name of the substance, the Schedule, and the net weight of the material with associated uncertainty.</p>			
B. Requested deviation:			
<p>5.5.1 - For Material with Marijuana Characteristics, Residues with Marijuana Characteristics, and Material with limited Marijuana Characteristics, follow the Technical Procedure for Plant Material and Plant Material Extracts for analysis of items containing plant material. 5.5.17 & 5.5.14.5 - Replace Drug Chemistry Technical Procedure for Identification of Marijuana with the Technical Procedure for the Identification of Plant Material and Plant Material Extracts. 5.5.18 - Remove 5.6.1 - Substances identified using the Technical Procedure for Plant Material and Plant Material Extracts (Version 1, effective 11/25/2019) will not be reported with a schedule.</p>			
C. Necessity for the deviation:			
<p>With the implementation of the new Technical Procedure for Plant Material and Plant Material Extracts, the analytical scheme in Drug Chemistry Analysis does not accurately depict the steps required for analysis of these types of materials. Furthermore, due to the inability for the lab to quantitate cannabinoids, schedules for substances required to be confirmed in the Technical Procedure for Plant Material and Plant Material Extracts shall not be reported in order to most accurately depict the information obtained throughout analysis.</p>			
D. Technical review and Authorization (to be completed by the Quality Manager and/or Technical Leader)			
Comments(to include merits and impacts):			
<p>The Technical Procedure for Plant Material and Plant Material Extracts outlines the requirements for analysis of plant material, and the Technical Procedure for Drug Chemistry Analysis covers anything not addressed in the afore mentioned procedure (weighing requirements, for example). Not reporting the schedule for any reported cannabinoids is appropriate due to the inability to differentiate Hemp Cannabis from Marijuana Cannabis with the currently validated methodology.</p>			
Approved	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Duration One year, or next procedure update
Signature	Amanda Battin Venable <small>Digitally signed by Amanda Battin Venable Date: 2019.11.24 20:17:06 -05'00'</small>		Date 11-25-2019
E. Quality Assurance Authorization (to be completed by the Quality Manager, Forensic Scientist Manager or designee)			
Acceptable within general QA guidelines and good laboratory practice?		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Significant negative impact to Crime Laboratory Quality System?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Restrictions/limitations:			
<input checked="" type="checkbox"/>	Authorized	<input type="checkbox"/> Rejected	Signature Katy Schell <small>Digitally signed by Katy Schell DN: cn=Katy Schell, o=North Carolina State Crime Laboratory, ou=Drug Chemistry Section, email=KSchell@ncdoj.gov, c=US Date: 2019.11.25 09:20:41 -05'00'</small>
			Date 11/25/2019

Deviation Request Form (DRF)

Directions: The Initiator will complete Sections A through C. Additional continuation pages can be included if necessary.

Initiator	Katy Schell			Date	01-23-2019		
A. Requested deviation applies to (Technical Procedure – include specific section):							
Drug Chemistry Analysis - Version 13							
<p>5.6.1 The results for identified substances from a single unit exhibit shall be reported with the name of the substance, the Schedule, and the net weight of the material with associated uncertainty.</p>							
B. Requested deviation:							
<p>Add language for the reporting of potential analogs and/or isomers, consistent with the NCGS Chapter 90.</p> <p>Also, add the National Alliance for Model State Drug Laws (NAMSDL) reference to the reference section of the procedure (www.namsdl.org).</p> <p>See attached.</p>							
C. Necessity for the deviation:							
<p>A newly identified substance in the drug chemistry section could potentially be deemed an analog according to the NCGS Chapter 90. An update to the reporting is needed to standardize the reporting of such substances. Also, the addition of the NAMSDL guidelines for "substantially similar" will be beneficial in ensuring consistency in the evaluation process for the new reporting statement. The NAMSDL guidelines are being incorporated into procedure, as well as added to the reference section of the procedure.</p>							
D. Technical review and Authorization (to be completed by the Quality Manager and/or Technical Leader)							
Comments(to include merits and impacts):							
<p>The additional language statement listed in the results will provide the customer with more information regarding potential analog substances. The addition of a reporting statement related to possible analogs will not have a negative affect on the quality of casework being performed in the drug chemistry section. Some substances may be isomers, as well as analogs, in which 5.6.1.1.3 shall be followed. Section 5.6.1.1.4 outlines substances that may be isomers, but do not satisfy 5.6.1.1.2.</p>							
Approved	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Duration	1 year, or until the next procedure revision	
Signature	Amanda Battin Venable			Digitally signed by Amanda Battin Venable Date: 2019.01.23 15:37:03 -05'00'		Date	01-23-2019
E. Quality Assurance Authorization (to be completed by the Quality Manager, Forensic Scientist Manager or designee)							
Acceptable within general QA guidelines and good laboratory practice?					<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/> No
Significant negative impact to Crime Laboratory Quality System?					<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/> No
Restrictions/limitations:							
<input checked="" type="checkbox"/>	Authorized	<input type="checkbox"/>	Rejected	Signature	Georgana Baxter		Date
				Digitally signed by Georgana Baxter DN: cn=Georgana Baxter, o=North Carolina State Crime Laboratory, ou=Quality Manager, email=tsuggs@ncdoj.gov, c=US Date: 2019-02-14 13:41:58 PostiPhorumPDF Version: 9.3.0		2/19/2019	

DRF – Section B. Requested Deviation Continued.

5.6.1.1 An identified substance not specifically listed in NCGS Chapter 90 shall first be evaluated to determine if it is a controlled substance, a potential controlled substance analog, and/or a controlled substance isomer.

5.6.1.1.1 An identified substance found to be controlled shall be reported in accordance with 5.6.1.

5.6.1.1.2 A potential controlled substance analog, as defined in NCGS Chapter 90, shall first be evaluated to determine if it is substantially similar to a Schedule I or Schedule II controlled substance.

5.6.1.1.2.1 A substance will be considered substantially similar if any of the following are satisfied:

- The substance differs in no more than two (2) atoms, one (1) functional group, or any combination thereof, from the structure of a controlled substance. A functional group being that of an alkyl, alkene, alkyne, arene, haloalkane, haloalkyne, haloalkene, aromatic halide, alcohol, ether, amine, aldehyde, ketone, carboxylic acid, ester, or amide group;
- The substance: (1) differs in its chemical structure to a controlled substance only by substituting one or more hydrogens with halogens or by substituting one halogen with a different halogen; or (2) is an alkyl homolog of a controlled substance; or
- The substance in question shares a common core structure (the central portion of the molecule is the same) with a controlled substance in schedules I or II and has only one point of divergence from the controlled substance.

5.6.1.1.2.2 After evaluation, a substance deemed substantially similar shall be reported using the following wording: "X, the chemical structure of which is substantially similar to the chemical structure of Y, a Schedule Z controlled substance", where X is the identified substance; Y is the substance currently listed in NCGS Chapter 90; and Z corresponds to the current Schedule listed in NCGS for substance Y.

5.6.1.1.2.3 The evaluation process will determine "Y" and "Z" in 5.6.1.1.2.2, and shall be documented by the Drug Chemistry Section Technical Leader, or his/her designee, for use in reporting.

5.6.1.1.3 An identified substance may be an isomer of a controlled substance. Such substances shall be evaluated to determine if it is a potential analog under the criteria in

5.6.1.1.2. Substances found to satisfy 5.6.1.1.2 shall be reported in accordance with 5.6.1.1.2.2 and 5.6.1.1.2.3. Substances that do not satisfy 5.6.1.1.2 shall be handled according to 5.6.1.1.4.

5.6.1.1.4 A substance that is evaluated and is not found to be a controlled substance or does not fall under 5.6.1.1.2 or 5.6.1.1.3 shall be reported in accordance with 5.6.9. An exception may be made by the Drug Chemistry Section Technical Leader, or his/her designee, on a case by case basis.

Deviation Request Form (DRF)

Directions: The Initiator will complete Sections A through C. Additional continuation pages can be included if necessary.

Initiator	David Freeman	Date	10/4/18
A. Requested deviation applies to (Technical Procedure – include specific section):			
<p>"Technical Procedure for Drug Chemistry Analysis" Section 7.1.1 - All scientists shall wear a lab coat, gloves, protective eyewear and particle masks when working any suspected fentanyl, fentanyl analog, or heroin cases until the time that the identification of the substance has indicated the absence of fentanyl or its analogs.</p>			
B. Requested deviation:			
<p>Remove the requirement which mandates that all scientists in the Drug Chemistry Section wear a particle mask when working any suspected fentanyl, fentanyl analog, or heroin cases until the time that the identification of the substance has indicated the absence of fentanyl or its analogs.</p> <p>"All scientists shall wear a lab coat, gloves, and protective eye wear when working any suspected fentanyl, fentanyl analog, or heroin cases until the time that the identification of the substance has indicated the absence of fentanyl or its analogs. Particle masks (e.g., N95 dust masks) may be used for the comfort of the analyst."</p>			
C. Necessity for the deviation:			
<p>The ANAB Assessment Team cited the Drug Chemistry Section for not wearing particle masks during analysis of suspected fentanyl cases. The Drug Chemistry Section has since determined that particle masks are not necessary for the safety of analysts because administrative and engineering controls provide adequate protection for employees. Therefore, the requirement that mandates the wearing of particle masks will be removed from the Technical Procedures.</p>			
D. Technical review and Authorization (to be completed by the Quality Manager and/or Technical Leader)			
Comments(to include merits and impacts):			
<p>Analysts should exhibit caution when working with any suspected controlled substance case. The removal of the requirement for scientists in the Drug Chemistry section to wear particle masks when analyzing suspected fentanyl-containing exhibits will not affect the quality of casework being performed in the Drug Chemistry Section. Other required safety precautions, such as the use of a lab coat, gloves, and protective eye wear will remain in place, as well as the requirement for informing one other scientist when performing such analyses.</p>			
Approved	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/> No
Duration	Until next procedural revision		
Signature	Amanda Battin <small>Digitally signed by Amanda Battin Date: 2018.10.08 10:34:21 -04'00'</small>		Date
October 8, 2018			
E. Quality Assurance Authorization (to be completed by the Quality Manager, Forensic Scientist Manager or designee)			
Acceptable within general QA guidelines and good laboratory practice?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/> No
Significant negative impact to Crime Laboratory Quality System?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/> No
Restrictions/limitations:			
<input checked="" type="checkbox"/>	Authorized	<input type="checkbox"/>	Rejected
Signature	Katy Schell <small>Digitally signed by Katy Schell DN: cn=Katy Schell, o=North Carolina State Crime Laboratory, ou=Department of Justice, email=kschell@ncdoj.gov, c=US Date: 2018.10.08 11:07:32 -04'00'</small>		Date
			10/8/2018

Technical Procedure for Drug Chemistry Analysis

- 1.0 Purpose** - This procedure specifies the required elements for the identification of controlled substances.
- 2.0 Scope** - This procedure applies to general casework samples in the Drug Chemistry Sections of the State Crime Laboratory.
- 3.0 Definitions**
- **Homogenous** – Uniform.
 - **Residue** – An amount of material which cannot be readily removed from the container in which it was submitted.
- 4.0 Equipment, Materials and Reagents** – See Drug Chemistry Section technical procedures.
- 5.0 Procedure**
- 5.1 Examination Documentation**
- 5.1.1** The electronic FA worksheet is provided as a controlled form and shall be used as designed for casework. Forensic Scientists shall record notes which will allow another Forensic Scientist to repeat the analysis under conditions as close as possible to the original, evaluate the data, interpret the results, and form an independent conclusion.
- 5.1.2** The Drug Chemistry FA worksheet is a generic worksheet for controlled substances and clandestine laboratory casework. The comments section shall be used for explanation of tests if needed. Excel spreadsheets are an acceptable format to record and add lists of weights or to organize data. These shall be imported and approved in the Case Record Object Repository for the Case Record.
- 5.1.3** The “Notes” section of the FA worksheet is provided for detailed descriptions of evidence or other necessary information not addressed in **5.1.1** or **5.1.2**.
- 5.1.4** There will be instances when plain paper is needed for note taking. Clandestine laboratory field work is one example. This is an acceptable practice as long as the notes are properly labeled, retained, and promptly scanned into the Case Record Object Repository. Any tests or analysis conducted shall include information that is included in the controlled worksheet.
- 5.1.5** Date(s) of examination shall be noted as “Date started” and “Date completed.” The completion date reflects the date when all data has been incorporated into a recorded conclusion.
- 5.2** Laboratory facilities provide sufficient environmental conditions to conduct all tests included in the Section technical procedures with no further consideration required.
- 5.3 Standards and Controls**
- 5.3.1** Forensic Scientists are responsible for using documented Drug Chemistry Section technical and administrative procedures outlined for the identification of controlled substances.

5.4 Calibrations - See Drug Chemistry Section technical procedures.

5.5 Application of Procedure on Evidence

5.5.1 Analytical Schemes

5.5.1.1 There are four general analytical schemes to be used for controlled substances after the physical examination of the drug form is conducted.

5.5.1.2 Pharmaceutical Preparation (see below for scheme).

5.5.1.3 Residue/Paraphernalia/Liquids (see below for scheme).

5.5.1.4 General Unknowns/Powders/Clandestine Tablets (see below for scheme).

5.5.1.4.1 For cases involving suspected fentanyl, fentanyl analogs, or heroin, appropriate safety measures will be taken as outlined in section **7.1**

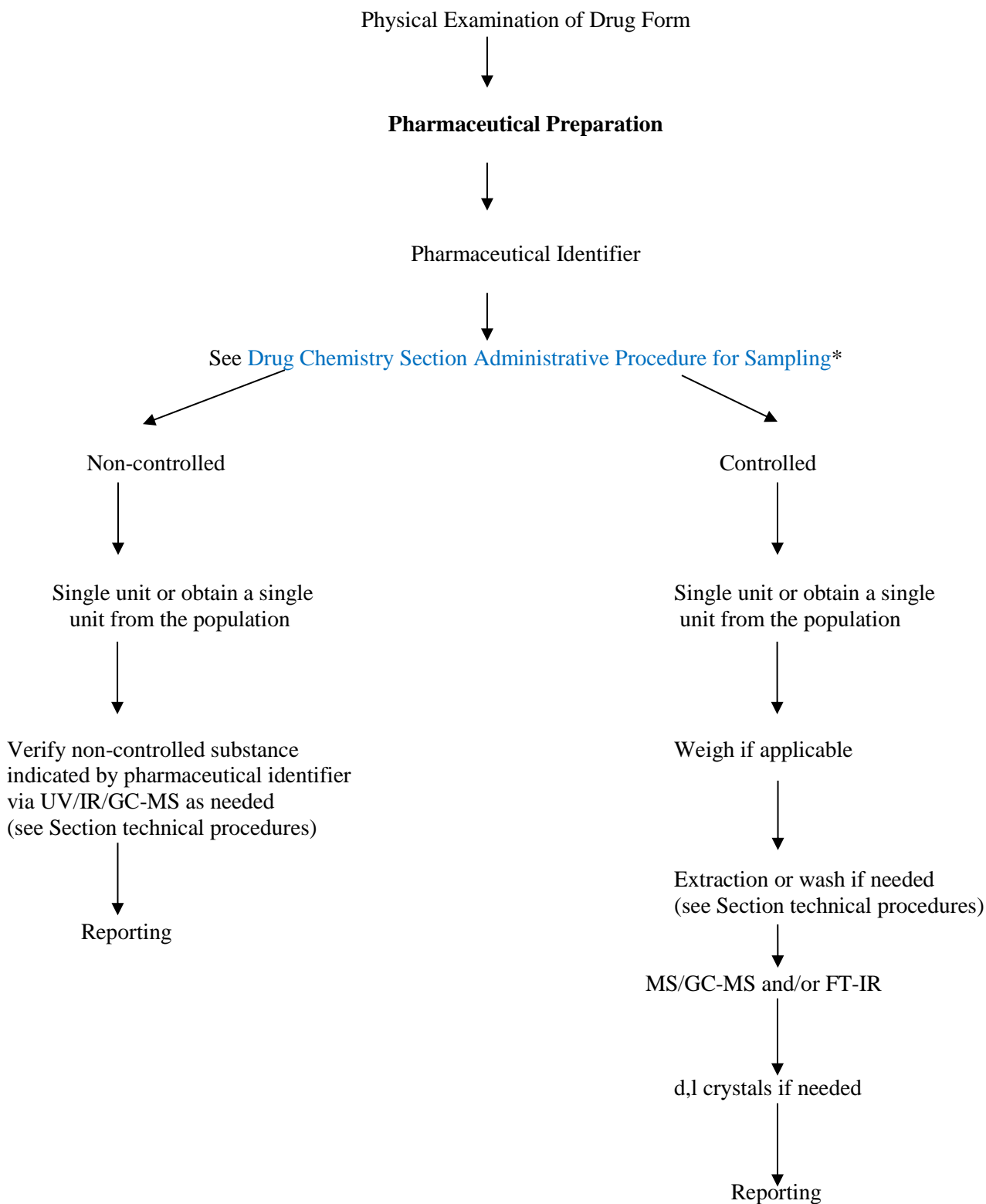
5.5.1.5 Plant material (see below for scheme).

5.5.1.6 It should be noted that sample size or other circumstances may require a rearrangement or modification of one or more steps.

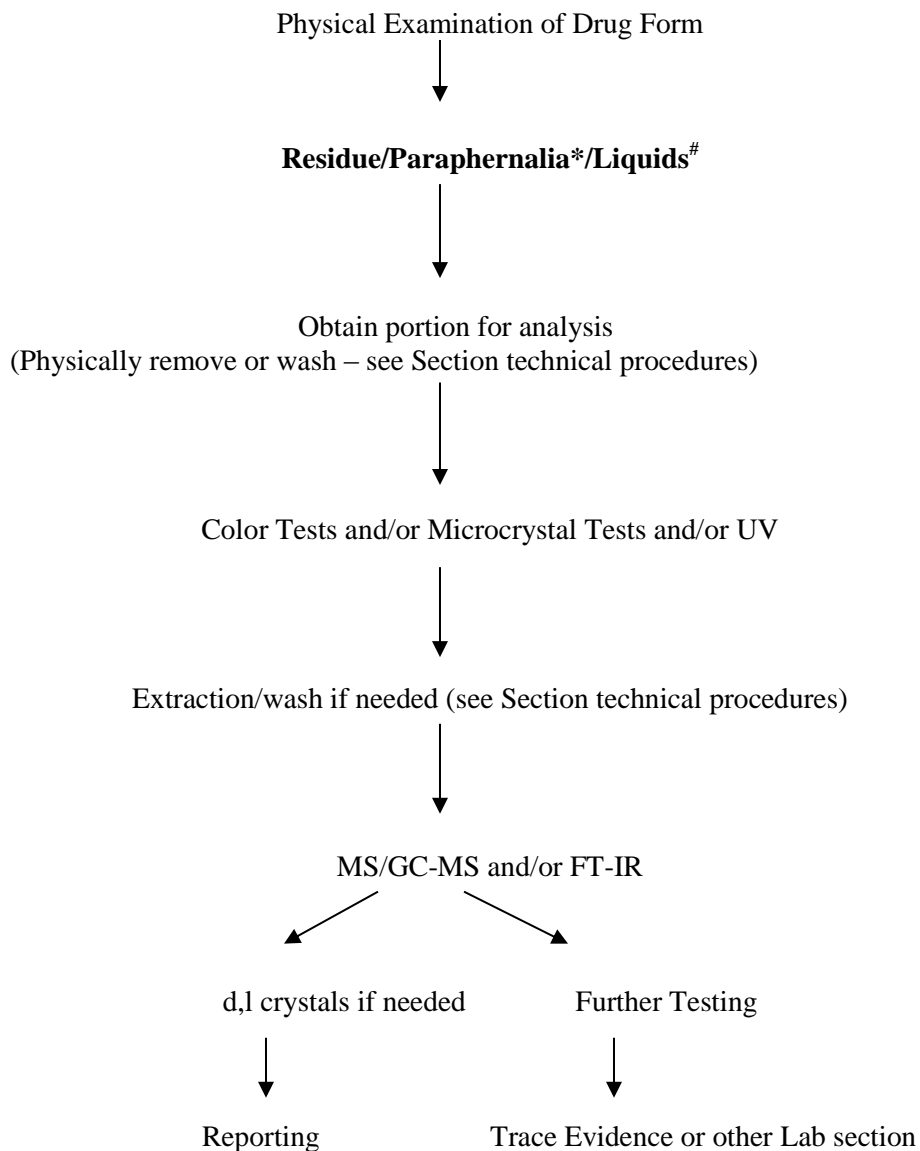
5.5.1.7 A Forensic Scientist may encounter exhibits that require specialized analysis. For these cases the flowchart for general unknowns shall be followed and any deviations from the technical procedures shall be approved by the Drug Chemistry Technical Leader or his/her designee in accordance with the [Laboratory Procedure for Authorizing Deviations](#).

5.5.1.8 The chosen analytical scheme shall demonstrate the identity of the specific drug present and shall preclude a false positive identification and minimize false negatives. Where a scheme has limitations, this shall be reflected in the final interpretation.

(ANALYTICAL SCHEMES FOLLOW)

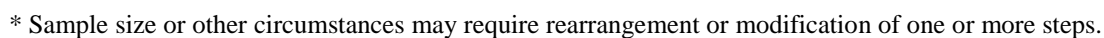


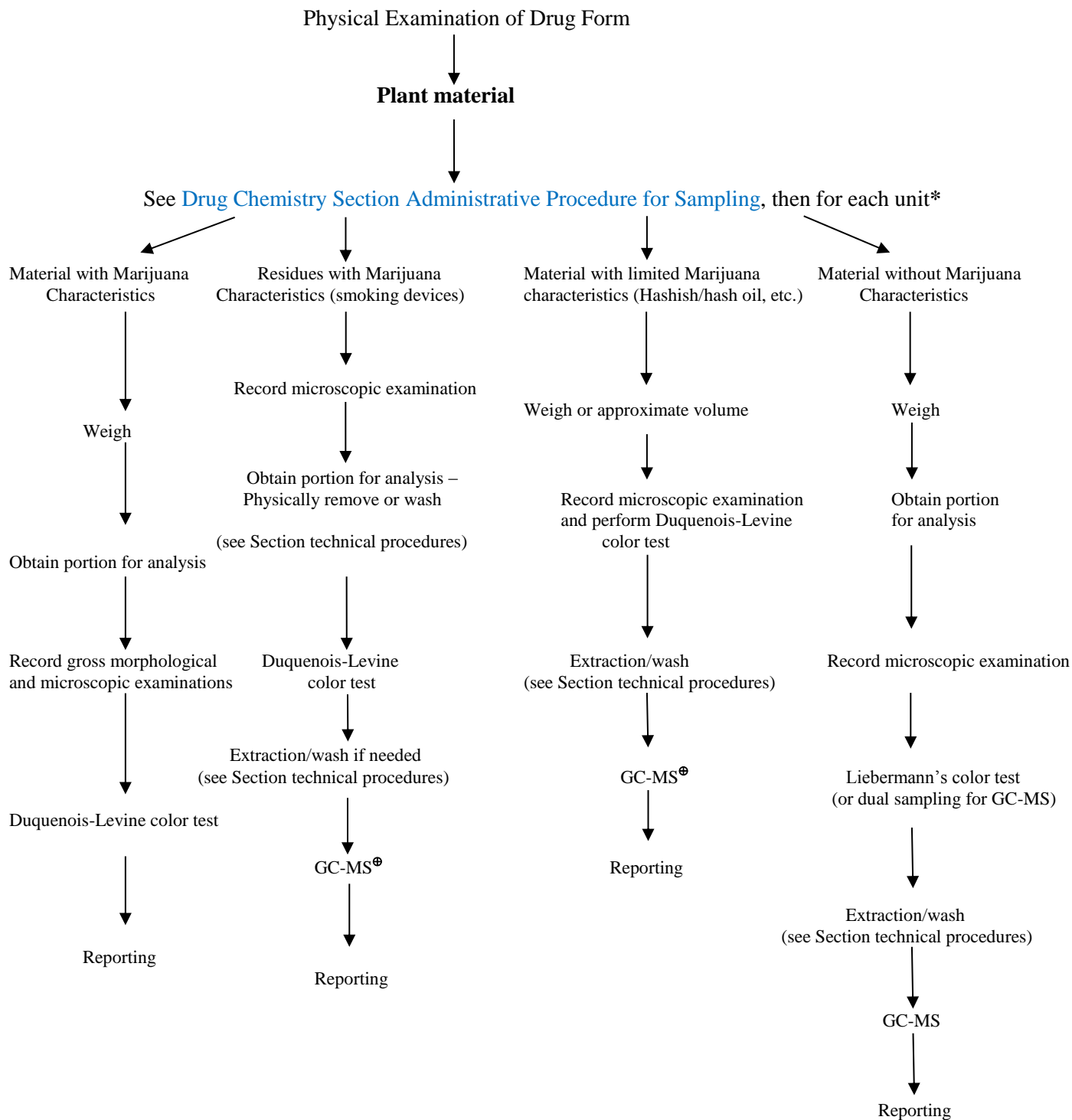
* Sample size or other circumstances may require rearrangement or modification of one or more steps.



* Sample size or other circumstances may require rearrangement or modification of one or more steps.

#Refer to [Drug Chemistry Section Administrative Procedure for Sampling](#) if applicable when exhibit is a liquid pharmaceutical preparation.





* Sample size or other circumstances may require rearrangement or modification of one or more steps.

[Ⓢ] Required if macroscopic characteristics are absent or if another test is inconclusive.

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- 5.5.2 Color tests** are used to screen evidence to determine if a controlled substance may be present. (See the [Drug Chemistry Section Technical Procedure for Preliminary Color Tests.](#))
- 5.5.2.1** A screening test shall be chosen based on its usefulness (i.e., microcrystalline test for cocaine, Marquis for heroin).
- 5.5.3 Ultraviolet (UV) spectroscopy** may be used on extracted samples or used on straight material to screen. (See the [Drug Chemistry Section Technical Procedure for Ultraviolet Spectroscopy.](#))
- 5.5.3.1** Ultraviolet spectroscopy may be used for cases involving dilution/diversion when known standards are submitted for comparison purposes.
- 5.5.4 Microcrystalline tests** may be used to screen evidence or to help identify a controlled substance when used in conjunction with other technical procedures. (See the [Drug Chemistry Section Technical Procedure for Polarized Light Microscopy.](#))
- 5.5.4.1** When a microcrystalline test is used in conjunction with a confirmatory test (Category A), documented descriptions of the crystals shall be included in the case notes for peer review. When this method is employed, the microcrystalline test will be considered a Category C test.
- 5.5.4.2** When a microcrystalline test is used as a confirmatory test (Category B), (i.e., not in conjunction with a Category A test), the crystals shall be contemporaneously peer reviewed and a Verification Review will be entered into the case record in FA.
- 5.5.5 Pharmaceutical Identifiers** - Forensic Scientists shall use the markings and characteristics of pharmaceutical preparations to determine the consistency of the units and as a preliminary examination only.
- 5.5.5.1** Complete markings shall be required for identification. Tablets must be intact or complete markings must be physically matched back together if broken tablets are present.
- 5.5.5.2** Information obtained from partial imprints may not be used as a preliminary examination. This type of information may be included in the casefile for information purposes only.
- 5.5.5.3** These identifications shall be made by using credible reference materials (e.g., *Micromedex*, *The Physician's Desk Reference*, *The Logo for Tablets and Capsules*, manufacturer's published data, and/or internet pharmacies such as Drugs.com and Pharmer.org).
- 5.5.6 Extractions/washes** - Non-controlled substances are often mixed with controlled substances and interfere with results. It may be necessary to remove them before proceeding with analysis. (See the [Drug Chemistry Section Technical Procedure for Extractions and Separations.](#))
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5.5.7 Infrared (IR) Spectroscopy (FT-IR) may be used to screen a sample, or it may be used to identify a controlled substance when used in conjunction with preliminary tests. (See the [Drug Chemistry Section Technical Procedure for Infrared Spectroscopy](#).)

5.5.7.1 FT-IR is used for identification when the controlled substance is not mixed with other substances, or is mixed with other substances in a ratio such that the FT-IR spectrum of the mixture does not interfere with a favorable comparison to the known reference material.

5.5.8 Gas Chromatography Mass Spectrometry (GC-MS) may be used to screen evidence or to identify controlled substances when used in conjunction with preliminary tests. (See the [Drug Chemistry Section Technical Procedure for Gas Chromatograph-Mass Spectrometry](#).)

5.5.8.1 If the controlled substance is mixed with other substances, or in a form that is not compatible with the instrument, refer to the [Drug Chemistry Section Technical Procedures for Extractions and Separations](#), and the [Drug Chemistry Section Technical Procedure for Gas Chromatograph-Mass Spectrometry \(GC-MS\)](#) for suggested sample preparation.

5.5.9 Gas chromatography (GC) may be used to identify controlled substances when used in conjunction with other preliminary tests listed in **5.5.11**.

5.5.10 Sampling - See the [Drug Chemistry Section Administrative Procedure for Sampling](#) to determine sampling selection or sampling plan and population(s).

5.5.11 Categories of Analytical Techniques

Listed in order of decreasing discriminatory power from A to C and specified for the techniques currently utilized at the North Carolina State Crime Laboratory:

Category A	Category B	Category C
Infrared Spectroscopy	Gas Chromatography	Color Tests
Mass Spectrometry	Microcrystalline Tests (Not used in conjunction with a Category A Test)	Ultraviolet Spectroscopy
	Pharmaceutical Identifiers	Microcrystalline Tests (Used in conjunction with a Category A Test)
	Cannabis Only: Macroscopic Examination Microscopic Examination (Counts as one each)	

5.5.12 When a Category A technique is incorporated into an analytical scheme, then at least one other technique (from either Category A, B, or C) shall be used.

5.5.12.1 This combination must identify the specific drug(s) present.

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- 5.5.12.2** When sample size allows, the second technique shall be applied on a separate sampling.
- 5.5.12.3** All Category A techniques shall have reviewable data.
- 5.5.13** When a Category A technique is not used, then at least three different validated techniques shall be used.
- 5.5.13.1** This combination shall identify the specific drug(s) present and shall preclude a false positive identification. Two of the three methods shall be based on uncorrelated techniques from Category B.
- 5.5.13.2** A minimum of two separate samplings shall be used in these three tests.
- 5.5.13.3** All Category B techniques shall have reviewable data.
- 5.5.14** Reviewable data includes:
- 5.5.14.1** Printed spectra and chromatograms.
- 5.5.14.2** Reference to published data for pharmaceutical identifiers.
- 5.5.14.3** Contemporaneous documented peer review, photographs, or digital images of microcrystalline tests if used without a Category A Test.
- 5.5.14.4** Descriptions of microcrystalline test results, if used in conjunction with a Category A Test.
- 5.5.14.5** For cannabis and botanical materials only: recording of detailed descriptions of morphological characteristics. (See the [Drug Chemistry Section Technical Procedure for the Identification of Marijuana](#) for descriptions used in conjunction with the FA worksheet.)
- 5.5.15** For the use of any method to be considered of value in the identification of the controlled substance, the test shall be considered positive.
- 5.5.15.1** While negative tests provide useful information for ruling out the presence of a particular drug or drug class, these results have no value toward establishing the positive identification of a drug.
- 5.5.16** In cases where hyphenated techniques are used (e.g., GC-MS), they will be considered as separate techniques provided that the results from each are used.
- 5.5.17** Cannabis exhibits tend to have characteristics that are visually recognizable; therefore, macroscopic and microscopic examination of cannabis shall be considered as two separate Category B techniques when observations include documented botanical features as described in the [Drug Chemistry Section Technical Procedure for Identification of Marijuana](#).
- Additional testing shall follow the scheme outlined in Sections **5.5.12** and **5.5.13** set forth in this procedure.

- 5.5.18** For exhibits that lack sufficient observable macroscopic and microscopic botanical detail (i.e., extracts and residues), tetrahydrocannabinol (THC) shall be identified utilizing the principles in **5.5.12** and **5.5.13** set forth in this procedure.
- 5.5.19** On rare occasions, a category “A” technique may be used by itself for identification of a newly encountered analyte if data from reference material is not available. A verification review from the Technical Leader (or Forensic Scientist Manager/Forensic Scientist Supervisor) shall be required to document approval for these instances.
- Data obtained from the analyte shall be compared to published reference data from a credible source recognized in the forensic community.
 - An analyte in this instance shall be defined as an unusual steroid or new designer drug.
- 5.5.20** **Weights** (received and returned) of the following types of evidence shall be recorded in the case notes. (See the [Drug Chemistry Section Technical Procedure for Balances](#).)
- Solids (to include clandestine tablets containing substances in which weight thresholds apply)
 - Powders
 - Opiate tablet preparations
 - Amphetamine tablets
 - Plant material
- 5.5.20.1** The analytical balance shall be used for weight determinations of material when hypergeometric or threshold sampling applies, AND the amount of material present in each unit prohibits reporting of measurement uncertainty if a table top balance were used.
- 5.6** **Reporting** (See the [Drug Chemistry Section Administrative Procedure for Sampling](#) for the format to report identified substances for exhibits where sampling or sample selection has occurred.)
- 5.6.1** The results for identified substances from a single unit exhibit shall be reported with the name of the substance, the Schedule, and the net weight of the material with associated uncertainty.
- 5.6.2** All digits of received net weights recorded in the case notes shall be reported with the associated uncertainty. See [Procedure for Measurement Assurance](#) and the [Drug Chemistry Section Technical Procedure for Balances](#).
- 5.6.2.1** When pharmaceutical tablets other than opiate preparations and amphetamine are identified, reporting of the net weight is not required.
- 5.6.3** Gross weights may be recorded as needed, but shall not be reported unless sample matrix prevents complete removal of packaging. When this occurs, uncertainty of measurement does not apply to gross weights.

- 5.6.4** The notation “Net Weight of Material - Less than 0.1 gram” is required to report all recordable weights less than 0.1 gram when a table top balance or analytical balance is used to obtain the weight. Uncertainty of measurement does not apply in this situation.
- 5.6.4.1** When the net weight of a single pharmaceutical unit is less than 0.1 gram, it is acceptable to record an actual weight less than 0.1 gram in the casefile, and report the results as “Net Weight of (Tablet, etc.) – Less than 0.1 gram.” Uncertainty of measurement shall not be reported, even if it was calculated on an Excel spreadsheet.
- 5.6.5** An amount of material which does not register on a table top balance, or an amount that cannot be readily removed from the container in which it was submitted, may be reported as a residue.
- 5.6.6** When a sample’s infrared spectrum indicates a mixture of a controlled substance(s) and non-controlled substance(s), the ratio will be evaluated based on the training and experience of the Forensic Scientist. If the overwhelming majority of the sample is indicated to be non-controlled, then the reported results shall indicate that the material contains the controlled substance(s).
- 5.6.6.1** Suggested Example:
Item 1:
Material containing Cocaine – Schedule II.
Net weight of material – 2.51 (+/- 0.0X) grams.
- 5.6.6.2** Suggested Example:
Item 1:
2.51 (+/- 0.0X) grams of material containing Cocaine – Schedule II.
- 5.6.7** When the sample size of an exhibit prohibits complete analysis, the reported results shall be recorded as “Insufficient sample for analysis.”
- 5.6.8** The “TYPE EXAMINATION REQUESTED” for submitted clandestine laboratories shall be listed as “Examine for controlled substances.” when there is no additional request from the customer.
- 5.6.8.1** When a specific request for analysis of pseudoephedrine (or ephedrine) is made by the customer in these type cases, the “TYPE EXAMINATION REQUESTED” shall be listed as “Examine for controlled substances and/or (pseudo)ephedrine.”
- 5.6.9** The results for non-controlled substances shall be reported as “No controlled substances identified” and the net weight of the material with associated uncertainty shall be reported for the analyzed portion, if a net weight was recorded.
- 5.6.9.1** When no specific additional analysis is requested by the customer, the results for non-controlled clandestine laboratory samples shall be reported as “No controlled substances identified” and the net weight of the material with associated uncertainty shall be reported for the analyzed portion.
- 5.6.9.2** When a specific request for analysis of (pseudo)ephedrine is made by the customer, and analysis fails to identify a controlled substance or

(pseudo)ephedrine in clandestine laboratory samples, the results shall be reported as “No controlled substances or (pseudo)ephedrine identified.” The net weight of the material with associated uncertainty shall be reported for the analyzed portion.

5.6.10 The number of tablets, capsules, or other dosage units containing controlled substances shall be reported. The number returned shall be included in the case notes and reported as provided in the [Drug Chemistry Administrative Procedure for Sampling](#).

5.6.11 Liquids containing controlled substances shall be measured by weights or volumes. The amount of the received liquids shall be reported. The amount of the returned liquids shall be included in the case notes.

5.6.12 When a Forensic Scientist opens an item of evidence and determines it does not meet submission criteria, analysis may be terminated and the following results reported:

5.6.12.1 “The analysis on (Item # ____) has been terminated and the evidence is being returned because it does not meet Drug Chemistry Section submission guidelines.”

5.7 **Calculations** - See Drug Chemistry Section technical procedures.

5.8 **Uncertainty of Measurement** - See the [Drug Chemistry Section Procedure for Measurement Assurance](#).

6.0 **Limitations** - See Drug Chemistry Section technical procedures.

7.0 **Safety** - See [State Crime Laboratory Safety Manual](#).

7.1 Suspected fentanyl, fentanyl analog, and heroin cases

7.1.1 All scientists shall wear a lab coat, gloves, protective eyewear and particle masks when working any suspected fentanyl, fentanyl analog, or heroin cases until the time that the identification of the substance has indicated the absence of fentanyl or its analogs.

7.1.2 The analyzing scientist will inform at least one other scientist in the laboratory when working a suspected fentanyl, fentanyl analog, or heroin case.

7.1.3 Once the case is analyzed and it has been determined that fentanyl or a fentanyl analog is contained in the evidence, the scientist shall double bag the evidence and mark it with a warning sticker.

8.0 **References**

ASTM Standard E2329-09. “Identification of Seized Drugs.” ASTM International: West Conshohocken, PA, 2009, www.astm.org.

“Part III B – Methods of Analysis/Drug Identification.” *Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) Recommendations*. 5th Edition. January 29, 2010.

9.0 **Records**

- FA case files

10.0 Attachments - N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document – Drug Chemistry Policy 2008-DCS-01 and 2008-DCS-02 were combined and edited for conversion to ISO standards.
02/15/2013	2	<p>2.0 – Scope changed to cover all Drug Chemistry Sections.</p> <p>5.1.2 – Notation added to allow for wider use of Excel spreadsheets.</p> <p>5.1.3 – Wording changed to allow for wider use of “Notes” section.</p> <p>5.5.4.1 and 5.5.4.2 – References to Original Section 5.5.17 updated to reference new Section Number 5.5.14.</p> <p>5.5.17 and 5.5.18 – References to Original Sections 5.5.15.</p> <p>5.5.9 – “are” used changed to “may be” used. Removed HPLC and reference to HPLC Technical Procedure. (Original section 5.5.11)</p> <p>5.5.10 – Notation for determining sampling selection added. (Original section 5.5.12)</p> <p>(Original Section 5.5.12.1) Removed – See Drug Chemistry Technical Procedure for Sampling.</p> <p>(Original Section 5.5.12.2) Removed – See Drug Chemistry Technical Procedure for Sampling.</p> <p>(Original Sections 5.5.12.3 through 5.5.12.6) Removed – See Drug Chemistry Technical Procedure for Sampling. Sections 5.5.12.3.2, 5.5.12.3.3, Section 5.5.12.3.5 partial sentence: “OR homogenize all of the material. And associated bullet point - deleted.</p> <p>(Original Section 5.5.13) Removed – See Drug Chemistry Technical Procedure for Sampling.</p> <p>5.5.20 – “Weights” section moved from original 5.5.2 and 5.5.2.1 and reworded.</p> <p>5.6 - “Reporting Weights” section renamed “Reporting” and moved from original Section 5.5.3.</p> <p>5.6.1.1 – Added reference to “associated uncertainty.”</p> <p>5.6.1.3 – Clarification added for use with table top. (Original Section 5.5.3.2)</p> <p>5.6.1.5.1 and 5.6.1.5.2 – Measurement assurance data added to example. (Original Sections 5.5.3.5.1 and 5.5.3.5.2)</p>

05/03/2013	3	5.5.7.1 - Wording changed - removed not significantly different phrase for clarification; 5.5.9 – clarified other preliminary tests as those listed in 5.5.11
05/10/2013	4	5.3.1 – Added reference to section administrative procedures 5.5.1.7, 5.5.10, 5.6 - Revised name of Sampling Plan from Technical to Administrative Procedure 5.5.3.1 – Removed quantitative use of UV
07/31/2013	5	5.6.1.1 and 5.8 – Updated name of Procedure for Measurement Assurance 5.6.1.3 – Added “Net weight of material - ” 5.6.1.5 – Removed “or gas chromatogram”, changed their ratio to the ratio 5.6.3 and 5.6.3.1 – Removed sections
11/15/2013	6	Added issuing authority to header
12/18/2013	7	5.5.1.7 - Analytical scheme for Pharmaceutical Preparations amended to include chemical analysis to verify identity of non-controlled preparations 5.6.2 – Results for reporting of non-controlled substances changed to allow for only one option of wording, and report weight if recorded
04/18/2014	8	5.5.3 - Reworded 5.5.19 – Added Forensic Scientist Supervisor
08/29/2014	9	5.6.2.1 – Changed “indicated” to “identified”
05/15/2015	10	5.5.5 – Added Drugs.com and Pharmer.org as examples of internet pharmacies 5.5.11 – Removed HPLC. 5.5.20 – Added weight requirement for opiate and amphetamine tablet preparations. 5.6.2 – Clarified only net weights recorded are to be reported. 5.6.3 – Clarified gross weights are only reported when sample matrix is involved. 5.6.3.1.1 – Deleted and added to 5.6.3 above. 5.6.4 – Clarified reporting of weights of pharmaceutical tablets that weigh less than 0.1 gram. 5.6.5 – Clarified use of residue amount. 5.6.8 – Clarified reporting of weights for analyzed portion of non-controlled substances. 5.6.9 – Clarified reporting of returned controlled substance tablet counts. 5.6.11 – Add wording for results when evidence does not meet submission guidelines and work is terminated.
10/19/2015	11	Header - Revised issuing authority 5.5.1.5, 5.5.1.7 – Added hashish 5.5.5 – Reorganized section/clarified requirement for all markings to be present on pharmaceuticals if database identification is used as a preliminary examination 5.5.5.2 - Partial imprint information may be included in the casefile, but not used as a preliminary examination
07/08/2016	12	5.5.1.5 – Change wording to plant material to reflect new analytical schemes.

		<p>5.5.1.8 – Added new statement reference precluding false positive identifications and minimizing false negatives. Revised analytical scheme for plant material to accommodate analysis of synthetic cannabinoids on non-controlled plant material.</p> <p>5.5.20.1 – Updated when analytical balance is required.</p> <p>5.6.2.1 – Reporting of non-controlled tablet weights is not required.</p> <p>5.6.4.1 – Section removed and reporting of net weights less than 0.1 gram on analytical balance combined with section 5.6.4.</p> <p>5.6.8 – Clarified type examination requested for cases with/without special customer request.</p> <p>5.6.9 - Clarified results wording for specific customer requests for (pseudo)ephedrine in clandestine laboratory samples.</p>
04/07/2017	13	<p>5.5.1.4.1 and 7.1 – Added safety measures for processing cases involving fentanyl and fentanyl analogs</p> <p>5.5.11 – Clarified</p> <p>5.5.20 – Formatting updates and clarification</p>