AUSTIN POLICE DEPARTMENT
FORENSIC CHEMISTRY SECTION
STANDARD OPERATING PROCEDURES

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This Section Specific Standard Operating Procedures contains policies and procedures that are supplemental to the Division Standard Operating Procedure Manual.

FORENSIC CHEMISTRY

1.1 Scope of Operations

The Forensic Chemistry Section will follow the guidelines set forth in the Forensic Science Division SOP. Supplemental requirements specific to Chemistry section are contained within the Forensic Chemistry Standard Operating Procedural Manual, the Drug Section Technical Manual, the Blood Alcohol Technical Manual, the Drug Training Manual, and the Blood Alcohol Training Manual. These manuals combined represent guidelines for the Quality System within the Forensic Chemistry Section. (ISO 4.2.5)

This document specifies procedures for the routine examination and analyses of an unknown substance to determine if it is a controlled substance, and bodily fluid such as blood for the determination of alcohol concentration. It also provides procedural guidelines for assistance to police officers at clandestine labs in the documentation and collection of evidence.

1.2 History of the Forensic Chemistry Section

No Supplemental Requirements

1.3 Mission Statement

No Supplemental Requirements

1.4 Goals and Objectives

No Supplemental Requirements

1.5 Code of Ethics

No Supplemental Requirements

1.6 Organization and Staffing

No Supplemental Requirements

1.7 List of Location, Addresses and Phone Numbers

No Supplemental Requirements

1.8 Organizations Chart

No Supplemental Requirements

1.9 Section Descriptions and Responsibilities

- **Clandestine Lab Response Team Member Responsibilities:**
  - Wearing the proper protective equipment and adhering to the Clan Lab Team safety protocol.
  - Advising officers of the Clan Lab Response Team of existing or potential chemical hazards.
  - Safely shutting down chemical reactions in progress.
  - Dismantling clandestine lab with the assistance of Team members.
  - Ensuring that an inventory of items seized has been completed.
  - Verifying that evidence Chain of Custody Tags have been completed properly.
  - Transport evidence to laboratory or other secure storage facility when small quantities of substances can be safely transported.
  - Contacting chemical disposal contractor for immediate response when quantities or the hazardous nature of substances preclude transporting by lab personnel.

1.10 Hours of Operation

- On-Call Status
  - The assigned on-call analyst is listed in the call out schedule for drug analysts. Analyst is on call to:
    - Assist with clandestine lab investigations,
    - Assist officers in drug identification, or
    - Assist in the collection of large drug seizures.
  - An analyst may be called out to clandestine labs by:
    - The section supervisor,
    - The supervisor of the clandestine lab team or their designee.

1.11 Manuals

No Supplemental Requirements

1.12 Customer Service

Officer Training: Spot Test Reagents

Practice:
Officers are instructed utilizing the format in the Forensic Chemistry Training Manual. Instruction will include evidence and chemical safety precautions, proper chemical handling, how to interpret flow chart and test results, how to properly request analysis using the LIMS system and how to interpret web based pill identification software for controlled substance identification. Students will be administered a competency test.

At the conclusion of the presentation and competency test, feedback from officers is requested to improve the training program. Feedback is retained in the chemistry laboratory with copies of competency exams. (ISO 4.7.2)

1.13 Management System

No Supplemental Requirements

1.14 Planning and Development

Scope
In order to address customer needs and optimize the section's ability to meet those needs, the section utilizes a priority system based on the type of analysis required, the requesting customer, and required deadlines. These codes are used by staff in determining priority of case assignments.

Practice

Priority Codes
All assignments received by the section are given a priority code (See Appendix 03 for priority codes). These priority codes are also used by section management to distribute staffing according to current caseload.

- Assignments requiring analyses for state and federal prosecution on differing items should be divided into two assignments and assigned to the same analyst, when possible.

An assignment's priority or due date may be changed by the analyst, supervisor, or Administrative staff dependent on the requestor and criminal jurisdiction of the case. Due dates are approximate and subject to change dependent on staffing. (ISO 4.1.5.b)

Exam Counting Guidelines

Exam counting allows the section to determine the actual number of items analyzed for a specific request. This also allows for the tracking of the number of samples per item is being processed, which provides accountability for the amount of time an analyst spends on a request.

- Blood alcohol cases are one item per sample analyzed.
- Examinations for drug procedures will be counted and recorded.
- The number of items analyzed will be counted and recorded.
- The number of samples analyzed will be counted and recorded.
- The number of instrumental exams will be counted and recorded.

1.15 Purchasing Supplies and Services

No Supplemental Requirements

1.16 Management Review System

No Supplemental Requirements

1.17 Equipment and Supply Inventory

No Supplemental Requirements

2 FACILITY DESIGN AND SECURITY

2.1 Physical Plant/Space and Design

No Supplemental Requirements

2.2 Section Security

General Security

Evidence Storage Areas (ASCLD/LAB 5.3.4.1, ACLD/LAB 5.8.4.2 AND ISO 5.3.4.1a)

Evidence Storage Locations:

- Refrigerators for storage of blood samples.
  - Bulk capacity refrigerator is located in the chemistry lab. It is used for the storage of blood alcohol cases pending analysis and in process of analysis. Refrigerator has a key lock and slide lock arm for securing evidence.
  - Small capacity lockable refrigerator is located in the blood alcohol lab for cases pending transfer to outside lab for additional testing.

- Bulk storage for drug items
  - Storage Vault
    - Selected cases pending assignment are stored in the section drug vault room.
    - In-process items that are too large to be housed in analyst's in-process storage location can be stored in this area. Evidence stored in this area must be sealed.

- Clandestine lab room is used to store small clandestine lab cases pending analysis and disposal.
- Hazardous storage buildings can be used to house large clandestine lab items and large bulk cases pending analysis or disposal.

- In Process Evidence
  - Each drug analyst is assigned a keyed cabinet for short term storage.
  - Each blood alcohol analyst is assigned a keyed lockbox for refrigerated items in process.
  - For larger in-process bulk evidence, analysts can be assigned a keyed locker within the section drug vault room.
  - The microscopy room may be used as a temporary storage area for drying plant material in process of analysis.
  - Hazardous storage buildings can be used for drying plant material pending analysis. Read Section 5.1 Evidence Procedure for storage by type of chemicals or drugs.

- Hazardous Storage Building Security (ISO 5.3.4.1f)
  - Designations of Alarm Zones

Security Zone	Security Zone Building	Actual Building Number	Area Armed
Zone 1	Building 3	Building 3A	Entry/exit door
Zone 2	Building 3a	Building 3B	Entry/exit door
Zone 3	Building 3b	Building 5A/5B	Entry/exit door
Zone 4	Building 3c	Building 4A/4B	Entry/exit door
Zone 5	Building 3d	Building 6A/6B	Entry/exit door

  - Each door is equipped with an entry door sensor, a key pin lock and a keyed tamper proof lock. (ASCLD/LAB 5.3.4.1.b,e, ISO 5.3.4.1a,and c)
  - Temporary transfer of a portion of storage unit to another section of the division
    - Temporary access to an evidence storage location may be assigned to another section of the division.
    - Access to the location will be limited and does not include an alarm access code
    - The section being given access will provide a lock to secure evidence.
    - Entry will require an analyst and the assigned section employee.
    - The transfer of the storage location will be recorded in the entry log book.

Storage of Reference Standard and Reference Material Collections (5.6.3.2.1)

- Blood alcohol reference standards are stored in a locked refrigerator in the blood alcohol lab.
- Drug Reference Material consists of purchased drug reference materials, forfeited controlled substances and proficiency samples.
  - Storage is dependent on the type of drug and its chemical properties. They are stored within secured locations in the chemistry laboratory.

- Secured locations include the locked chemistry vault drug standards cabinet, refrigerator lock box or the locked freezer.
- A log will be maintained to track receipt, usage and disposal. Two analysts must initial all entries.

Records

- Key log book
- Hazardous Storage Building entry log book
- Hazardous Storage Building Alarm Log book
- Drug standards and proficiency samples log book

3 QUALITY ASSURANCE

3.1 Proficiency testing

Drug Analyst Proficiency Cycle- Four years
Each analyst will participate annually in a controlled substance proficiency exam. Analysts will also participate in a proficiency exam in all of the following categories at least once in a 4 year cycle:

- General Chemistry
- Quantitative Analysis
- Clan lab analysis

Blood Alcohol Proficiency cycle consists of each analyst participating in one proficiency test per year.

3.2 Court Testimony Monitoring

No Supplemental Requirements

3.3 Case Review

Practice

- If possible the Technical and Administrative Review should be conducted by the same Reviewer. (ASCLD/LAB 5.9.4 and 5.9.5)
- If corrections are indicated, the reviewer is responsible for changing the status of the assignment to “2” to prevent another reviewer from reviewing the case while corrective measures are being addressed.
- All corrected documents will be attached to the assignment and the assignment will be rerouted to the reviewer.
- Federal Rule 16 reports require review by a second analyst before release and need to be retained in the case record. This review can be documents in the narrative of the case record.
- Blood alcohol affidavit and certified lab report do not require a second analyst to review since they are reviewed and approved at the time the initial report.

3.4 Laboratory Audits

No Supplemental Requirements

3.5 Validation

No Supplemental Requirements

3.6 Instruments and Equipment

General Requirements for Analytical Instrumentation (ISO 5.5)

- Instrument logbooks will be kept with the instruments. (ISO 5.5.5)

Instrument and Equipment Maintenance

Routine and preventative maintenance is scheduled as needed.

- Analysts that have successfully completed training and are authorized to perform casework are also authorized to perform performance verifications on the respective instruments and equipment.
- If a performance check fails and the analyst is not able to perform the corrective measures, a contracted vendor will be called for service or item will be forwarded to vendor for service or replacement.
- The instrument/equipment will be tagged with an “Out of Service” card and an entry made into instrument log book.
- Upon completion of repairs, the type of repair and the name of the person/vendor who performed the repairs will be recorded in the instrument log book.
- The instrument/equipment will remain out of service until it passes the performance verification process.
- A logbook documenting all maintenance and repair will be kept with the instrument/equipment.
- Recording of maintenance or repairs performed should be recorded using Maintenance Log (FC 08).
- Recording of the verification of the instrument after repairs and/or after re-installation of the software will be noted using Instrument/Software Verification form (FC 10).

Refrigerators for Blood Alcohol samples and standards

- Refrigerator temperatures are monitored at a minimum of once a week.
- Temperatures are recorded in a log book.

Thermometers
National Institute of Standards and Technology (NIST) traceable thermometers will be used to record temperature of blood alcohol refrigerators and to assist in the evaluation process for pipettes. These

thermometers will be replaced upon expiration of the calibration. The NIST traceable certificate will be housed in a notebook with each blood alcohol refrigerator or in the blood alcohol lab.

Pipette
The positive displacement micro-pipette should be capable to accurately deliver 200 microliters. This pipette is located in the blood alcohol lab.

- Micro-pipette will be sent to an outside vendor for annual calibration or purchased as new.
- Micro-pipette will be inspected and tested upon return from the vendor or as newly purchased. See blood alcohol manual for testing procedure and acceptable testing limits upon purchase or return from a vendor for external calibration.
- Testing will be recorded and retained in a notebook.

Ultraviolet/Visible Spectrophotometer (UV/VIS)

- A performance verification check will be conducted at least quarterly.
- The verification process uses passes/failed report that records indicators for failure.
- Pass/fail performance verification reports will be maintained in the instrument log book.
- Repairs requiring a completed FC10 form and corresponding performance check may include but are not limited to:
  - Changing of source lamps
  - Repair/Changing of internal hardware including gratings, filter, choppers, and mirrors

Infrared Spectrophotometer (FTIR)

- A performance verification (Val Pro Qualification) check on the infrared spectrophotometer will be conducted at least quarterly.
- The performance verification check records energy ratio, noise level, wave number accuracy, optical resolution, repeatability, and detector linearity.
- The report notes pass/fail for each parameter.
- A bench alignment check should be conducted weekly.
  - Record the bench alignment check
  - If the bench alignment needs adjustment, the analyst is to conduct this process and save the new bench alignment.
  - If bench alignment fails after 2 attempts, the contracted vendor will be contacted for assistance and possible service call.
- A desiccant check should be conducted weekly
  - The weekly desiccant check will be recorded.
  - If a new desiccant pack is needed, an entry will be made into the instrument log book documenting the date the new desiccant pack was placed into the instrument and who performed this function.
- Repairs requiring a completed FC10 form and corresponding performance check include but are not limited to:
  - Repair/Changing of IR source, mirrors, beam splitter, detector, or ATR prism.

Mass Spectrometer (MS)

- Weekly standard spectra tune:
  - The laboratory uses the Standard Spectra Tune for weekly tunes. This tune ensures standard response over the full mass range.

- The Standard Spectra Tune checks the following criteria.
  - PFTBA is the compound used to tune the instrument.
    - If instrument is out of the compound it will not tune.
    - The compound's parameters that are being checked are PFTBA's mass 69 as the base peak, mass 219 should be between 35% and 99% and mass 502 is >1%.
    - These readings are recorded under "Rel Abund" on the tune print out.
    - If readings are outside of these parameters, it is up to the analyst to review all other information provided on the printed report in order to interpret the failure and to conduct the correctives measures needed.
    - If the issue cannot be resolved, the contracted vendor will be contacted for assistance and a possible service call.
  - Air and Water Leak Check
    - This is accomplished by comparing a standardized measurement of the system air (nitrogen *m/z* 28) and water (*m/z* 18) levels relative to PFTBA mass 69.
    - The abundance of *m/z* 28 should be less than that of *m/z* 18, and each should be less than 5% of *m/z* 69.
    - If air and water is present it is documented in the ion chromatograph of the report.
    - If recorded ranges are out of bounds, this indicates an air/water leak and corrective measures must be taken to eliminate source.
    - Instrument is placed "Out of Service" until resolved.
  - Filament –
    - The tune checks ensure that a current is being supplied by the filament. If the filament fails, the tune fails.
    - The Standard Tune Report also indicates which filament is being used.
    - If the filament fails, the instrument is changed over to the secondary filament, and the changeover is documented in the instrument log book.
    - If both of the filaments have failed, both are replaced and the instrument is tuned again to determine if the issue is resolved.
    - If the issue is not resolved, the contracted vendor will be contacted for assistance and a possible service call.

- Daily Tune evaluation:
  - The daily tune evaluation evaluates the instrument against the current tune file.
  - The parameters are reported as pass/fail.
  - If a parameter fails, the report also references several suggestions for the failure. It is up to the analyst to interpret the failures and to conduct the correctives measures needed to remedy the issue.
  - If the issue cannot be resolved, a contracted vendor will be contacted for assistance and a possible service call.

- Repairs requiring a completed FC10 form and corresponding performance check include but are not limited to:
  - General MS source cleaning/repairs
  - Electron multiplier replacement/repair
  - Quadrapole replacement/repair
  - Detector replacement/repair

Gas Chromatograph (GC)

Depending if the Gas Chromatograph is fitted with a FID or connected to a Mass Spectrometer, it is checked as follows:

- GC with MS
  - A weekly test mixture of drugs is injected to ensure that the column is able to separate the drugs within the mixture when using a predetermined method. If the sample is not being properly detected by the system, the analyst must evaluate the cause of the issue and take corrective measures to remediate.
  - If the issue cannot be resolved, a contracted vendor will be contacted for assistance and a possible service call. All corrective action must be documented in the instrument log book and the instrument will remain out of service until the issue is corrected.
  - The recorded results are maintained instrument notebook.
- Repairs requiring a completed FC10 form and corresponding performance check include but are not limited to:
  - Capillary column replacement

- GC with FID (Flame Ionization Detector)
  - Depending if the GC is being used to detect volatile compounds or drugs in a sample, an appropriate test mixture is analyzed with each batch for blood alcohol determination or drug purity. The purpose of the test mixture is to ensure that the column is able to separate the compounds of interest.
  - If the sample is not being detected by the system, the analyst must evaluate what is causing the issue and take corrective measures to remediate. If the issue cannot be resolved, a contracted vendor will be contacted for assistance and a possible service call. All corrective actions must be documented in the instrument logbook and instrument will remain out of service until issue is corrected.
  - The test mixtures are to be analyzed during every batch run and after repairs or maintenance.
- Repairs requiring a completed FC10 form and corresponding performance check include but are not limited to:
  - Capillary column replacement
  - FID replacement repair

Liquid Chromatography/Mass Spectrometry (LC/MS)

- Monthly Mass Spectrometer Calibration

- The mass spectrometer shall be calibrated monthly.
- A solution of Sodium Cesium Iodide (NaCsI) is used to calibrate the MS.
  - The NaCsI solution is prepared by mixing 20 parts Sodium Iodide to one part Cesium Iodide by mass. This mixture is diluted to 100mL using a 50:50 (by volume) solution of ultrapure water and LC-MS grade isopropanol.
- The solution is infused into the MS probe located on the front of the MS panel.
- The Calibration consists of three tests:
  - Static
  - Scanning
  - Scanning Speed
- All three tests evaluate the following ions (amu) in the NaCsI solution:

  22.99
  132.91
  172.88
  322.78
  472.67
  622.57
  772.46
  922.36
  1072.25
  1222.14
  1372.04
  1521.93
  1671.83
  1821.50
  1971.61
- Calibration must meet manufacturer's specifications with at least 14 of the 15 ions detected.
- The calibration shall be evaluated weekly using the calibration verification tool in Empower.
  - Calibration verification uses the same criteria as the calibration itself.

- Weekly Liquid Chromatograph Performance Check
  - Weekly a test mixture will be injected into the Liquid Chromatograph
    - If the calculated resolution falls below a value of 1.25 then the column shall be evaluated for suitability, and the issue resolved before the instrument is placed into service.
    - The mixture shall be run after service/repair.
- All calibration reports, evaluations, and weekly performance checks shall be printed, initialed, and stored in the LC-MS instrument book.

3.7 **Reagents** (ASCLD/LAB 5.1.3) (ASCLD/LAB 5.1.3.1)

Practice

Procedures for the preparation, verification and schedule of quality checks of the stock reagents is documented in the drug and blood alcohol technical manual.

- Definitions:
  - Stock Reagent: Reagent made in bulk for use by the section.
  - Bench Reagent: Bench reagent is a subsample of the stock reagent that is used for casework at the drug analyst's workstation.
- Analysts that are authorized to perform casework are also authorized to perform reagent quality checks in their respective categories of testing.

Records

- Reagent Quality Check Form (FC 013) will be maintained for all stock reagents. This document is maintained in the notebooks housed in the analytical weight room.
- A separate Reagent Quality Check Form (FC 013) is maintained for bench reagents. This document is maintained in the Reagent/Balance Notebook housed at each drug analyst's workbench
- The documentation on the quality check for alcohol stock solutions are kept in a notebook housed in the blood alcohol lab.

3.8 Document Management

No Supplemental Requirements

3.9 Deviation from Documented Procedures

No Supplemental Requirements

3.10 Preventive and Corrective Actions

No Supplemental Requirements

3.11 Suggestions/Complaints

No Supplemental Requirements

3.12 Customer Survey

No Supplemental Requirements

3.13 Reference Standards and Reference Materials

Scope

These policies serve to establish guidelines for the use of the reference alcohol standards for the establishment of standard curves in the determination of the concentration of alcohol in blood samples.

Drug reference material is used as a quality control and for the use in the generation of in-house instrumental data reference libraries (ASCLD/LAB 5.6.3.2).

Reference Standards

- Before use, all newly calibrated mass reference materials will be verified by weight using an appropriate balance and documented.
    - All mass reference standards shall be verified annually within two weeks of calibration of chemistry section balances.
    - Analysts that are authorized to perform casework are also authorized to perform reference standard verifications.

Reference Material Practices

- Blood Alcohol
    - Reference materials are identified by vendor, identity and lot number. Since materials are purchased in 1 ml ampules, only one vial per lot is tested against an established curve to verify that the contents are within the specifications listed in the Certificate of Analysis. Certificate of Analysis for each lot purchased will be maintained (ISO 5.6.3.1, 5.6.3.2). Materials purchased from ISO Guide 34 vendors do not require verification.
    - The verifying data for the reference material will be labeled with the concentration of solution, lot number, source and initials of the analyst. This data will be maintained.
    - Analysts that are authorized to perform casework are also authorized to perform reference standard verifications.

- Drug Chemistry
    - Prior to use in casework, a reference material must be entered into the reference material log book and Access database. The weight of the container with contents before and after performing verification of standard will be recorded. Verification can be accomplished by comparing purchased drug reference material produced by FTIR or GC/MS against known literature data or acceptable reference libraries (ISO 5.6.3.2).
    - The verifying spectra for reference materials will be labeled with the name of the drug, lot number, source, initials of the verifying analyst and attached to a completed reference material verification worksheet (FC 04) and placed in the reference material verification log book.
    - Any sample removed for laboratory purposes will be recorded in the reference material log book and co-initialed by another analyst (ISO5.6.3.3).
    - Analysts that are authorized to perform casework are also authorized to perform reference standard verifications.

Reference Materials Not Purchased Commercially

- In-house samples
    - Analyze and characterize any in-house samples before they are used as a reference material.

- If a compound cannot be purchased and must be synthesized by a chemist in the laboratory or obtained from another forensic laboratory, the identity of the substance must be confirmed before it can be used as a reference.
- This reference material will be assigned a unique lot number and tracked.
- The data will be attached in the reference material verification note book and/or respective LIMS case number.
- The drug section technical leader will determine when adequate verification has been performed on any compound to be used as a reference material. Documentation of this verification is recorded on the Reference Material Verification Worksheet (FC 04).

Intermediate checks/ Inspections (ISO 5.6.3.3)

- Every two years all drug reference materials will be weighed and verified against the last weight entered into the reference material log book.
  - If a drug reference material is suspected to have been adulterated, or contains a large weight discrepancy it should be brought to the immediate attention of the supervisor. An internal investigation will be conducted to reconcile this discrepancy.

Data Library References

- All software libraries will be reviewed by the technical leader prior to installation in an instrument. See Drug Technical Manual Appendix A for reviewed libraries.
- Reference material once verified can be added to existing APD libraries.

3.14 Reference Collection (Controlled Substances Forfeited for Official Use) (ASCLD/LAB 5.6.3.2.1).

Scope

Chapter 481.159 of the Texas Controlled Substance Act under the Texas Health and Safety Code allows law enforcement agencies to use controlled substances for official purposes after being forfeited by a District Court Order or Federal Court. (ISO 5.6.3.1)

Guidelines

The following guidelines are guideline for controlled substances forfeited for official use

- These substances have been awarded to the Austin Police Department by a court ordered forfeiture signed by a District or Federal Judge.
  - The laboratory will retain a copy of the signed court order.
- The section will maintain records on each substance forfeited:
  - Substance forfeited.
  - Forfeiture date.
  - Incident number, lab number and item number of substance forfeited.
  - Weight of forfeited substance
  - The purity of the controlled substance, if applicable.

- The section will not accept chemicals and precursors forfeited for investigative use.
- If it is deemed by the section supervisor that all items forfeited from a case cannot be utilized by the section, these items will be returned to the evidence room for disposal.

Practice

- The following weights per drug type are the maximum quantity of forfeited substances the section will store for official use unless authorized by the Laboratory Director
  - Marihuana – 500 pounds
  - Cocaine – 6 pounds
  - Crack Cocaine – 6 pounds
  - Methamphetamine – 3 pounds
  - Heroin - 3 pounds
  - LSD – 1000 dosage units
  - MDMA – 1000 tablets

- The analyst is required to document the release/return of the controlled substance and obtain documentation from the officer of any loss and/or of the tampering/altering of the substance while in the officer's possession. If related to an offense, the offense number is required.
- When forfeited substances released for official purposes are returned, they are subjected to retesting and weighing. If a discrepancy greater than ± 0.2 gram for samples between 10 to 400 grams or greater than ± 0.2 pound exists that cannot be justified, it will be reported to the supervisor, who will then report the discrepancy to the Laboratory Director.
- The release and return of the substances will be documented in the Forfeiture log book
- If after testing it is deemed altered from original state released, it will be set aside for disposal.
- If charges are filed using the forfeited substance, the forfeited substance is assigned a new incident number and is treated the same as other drug cases submitted for analysis.
- If no case was made by officers, the substance will be returned for future use.
- Forfeited substances utilized by the section deemed to no longer be usable will be transferred to the Evidence Control Section for disposal.
- The supervisor is required to ensure that proper authorization has been granted on the Forfeiture Release/Tracking Form (FC 06).
- Investigative and Training purposes
  - Dog training
    Controlled substance released for dog training purposes requires an additional form, the Dog Training Aids Tracking Form (FC 03). Since these training aids require repackaging and retesting to ensure the authenticity of the substance released a lab number will be created. Each sequential return and release will be documented on the Dog Training Aids Tracking Form and in LIMS.
  - Uncertainty Budget Development
    - Previously verified forfeited substances may be used as a reference material for development of uncertainty budgets including:
      - Gas Chromatography Quantification of Methamphetamine
      - Gas Chromatography Quantification of Cocaine
      - Gas Chromatography Quantification of Heroin
      - Ultraviolet spectrophotometry of Methamphetamine

  - Ultraviolet spectrophotometry of Cocaine
  - Ultraviolet spectrophotometry of Heroin
- Forfeited substances **MAY NOT** be used as calibrators for any functions within the chemistry section.

Intermediate Checks and Inspections (ISO 5.6.3.3)

- The intermediate check of the Forfeited Controlled Substances follows the same procedure as the intermediate checks for reference materials.

3.15 Examination Verification

No Supplemental Requirements

3.16 Contamination Detection and Prevention

Laboratory Visitors

- Instrument/equipment repair technicians who will only be working in the instrument room will not be required to wear a mask or gloves.
- Technicians conducting repairs in the wet lab work area will be required to wear gloves, a lab coat and a mask if evidence is present.

4. LABORATORY RECORDS

4.1 Case Record

Documentation (ASCLD/LAB 4.13.2.4 and 4.13.2.5)
These policies are established as minimum requirements for case documentation and record keeping required for controlled substance and blood alcohol cases. All other supporting documentation not specifically noted but that should also be considered such as narratives for case events and phone log, shipping forms for evidence to outside lab and copy of report from outside tab testing.

Required as an attachment to the case record per assignment for technical and administrative approval (ASCLD/LAB 4.13.2.5)

- Draft copy of laboratory report(s)
- Email of requestor if creating the assignment on their behalf
- Matrix Report(s)
- Data printouts
- Calculation worksheets
- Outside lab submission form

Abbreviations or symbols (ASCLD/LAB 4.13.2.13)
See Appendix 02 for list.

Selection of Report Format
Drug Assignments (DC):

- If the case is not a clandestine lab, no change to the report format is required.
- If the case is a clandestine lab, utilize the "CLAN" Clandestine Lab Report Template"
- If the case is generated by an outside agency, utilized the "DCOA" "DC Outside Agency" format so the report will populate with the agencies unique item numbering system.

Blood Alcohol assignments (BAC)

- The format shall be changed to the format which matches the analyst if an affidavit is required for the assignment.
- Assignments that generally do not require affidavits are cases where no analysis is being performed and sexual assault cases.

Item Selection for Analysis

- Items that are Prelog requested can be moved to prior or new assignment at the discretion of the analyst to meet customer's needs.
- **Drugs:**
  - If items are too numerous for matrix, new assignment(s) can be made by the analyst to fulfill the customer's request.
  - If no analysis is to be performed on a requested item, reason should be noted in the matrix. Examples.
    - Tablets that qualify as a misdemeanor by aggregate weight and charge.
    - Labeled liquids that qualify as a misdemeanor by aggregate weight and charge.
    - Items containing plant material suspected to be marihuana cumulatively total that is less than 4 ounces.
    - Drug paraphernalia with residue
  - Item(s) that have previously been reported may be removed from assignment or assignment may be administratively closed.
  - Upon inspection, items that could result in a request at a later date may be added to the assignment at the discretion of the analyst.

Evidence Sampling (ISO 5.7)

If all samples are not examined, the analyst may use a sampling plan as outlined in the Technical Manual.

Dates of Examination

- For drug and blood alcohol analysis, the start date is defined by the initial description entry in LIMS. (ISO 4.13.2.2.1 and ASCLD/LAB 4.13.2.2).
- For clandestine lab drug analysis, the sampling date will also be documented. (ISO 5.7.3)

Data

The following data must be documented within the case record (ASCLD 5.10.2 and ISO 4.13.2.5.2):

- Instrumental operating parameters are recorded with the data from each analysis.(ASCLD/LAB 4.13.2.5.2) The data storage location will be identified as below:
  - Raw instrumental data will be retained until the associated assignment is administratively reviewed.
  - All instrumentation data is maintained in the case assignment as the official record.

- Spreadsheets and forms not previously verified for use in casework that include calculations and data transfers will be checked by the technical reviewer. (ISO 5.4.7.1, ASCLD/LAB 5.4.7.1)

Disposition of evidence:
All hazardous clandestine lab samples will be disposed of by a Contracted Hazardous Disposal Company or by the evidence room upon authorization for disposal.

4.2 Laboratory Reports

Blood Alcohol and Drug Reports

- The report should document a general description of the item and at minimum the inner most packaging of the item reported if present. Any subbasement layers should be noted in the matrix. Subsequent layers may be reported at the discretion of the analyst. (ISO 5.10.2.f)

- If the item is electronically containerized with other items, the container identification reported should be the same as reflected in LIMS.

Reporting Guidelines for Blood Alcohol Cases

- Ethanol content will be reported as grams of ethyl alcohol per 100 milliliters of blood. It is reported as the average of at least four data points, truncated to 3 decimal places along with the expanded uncertainty truncated to 3 decimal places.
  - Example of Reported Blood Alcohol Concentration
    0.136 ± 0.009 grams of ethyl alcohol per 100 milliliters of blood
- Any result that is less than the limit of quantitation will be reported as “less than 0.010 grams of ethyl alcohol per 100 milliliter of blood”.
- Any result below the limit of detection will be reported as “No ethyl alcohol detected.”
- If the quantity of sample is insufficient for analysis, the report will read “No Analysis, quantity not sufficient for analysis”.
- If the sample is degraded and unsuitable for analysis, the report will read “No Analysis, sample unsuitable for analysis”.
- If a sample is sent to an outside laboratory for analysis, a footnote will be added to the report detailing where the sample was sent.
- The section will not compile a report for the conversion of serum result to whole blood.

Reporting Guidelines for Drug Cases

The reporting guidelines for controlled substances are based on the laws and definitions provided in the Texas Controlled Substances Act and U.S. Federal Sentencing Guidelines. The State and Federal Controlled Substance Acts determines the terminology used in reporting the identification of controlled substances and requires the reporting of the net weight of the substance to establish the penalty.

Reporting Conclusions

- Scheduled controlled substances not associated with a penalty group may be reported at the analyst’s discretion.

- The determination to report specific or all confirmed controlled substances is dependent on the highest penalty group of the controlled substances confirmed.
- If a controlled substance and a dangerous drug are confirmed in a sample, the analyst should report the controlled substance and note the presence of the dangerous drug in the notes. It may be necessary to report the dangerous drug or other active substance confirmed to determine the penalty group for the controlled substance. (See Special Reporting requirements below.)
- If a sample contains only dangerous drugs, the sample is generally reports as "No Controlled Substances Detected" but is dependent on the customer request and case type.
  - Juvenile cases and cases where the substance was confiscated from a drug free zone generally require the reporting of the dangerous drug confirmed.
  - Upon special request for investigative purposes or per customer contract, report the dominant dangerous drug or all the dangerous drugs confirmed.

Special Reporting Guidelines:

- Substances confirmed that contain no controlled substance may be reported as "No controlled substances detected".
- Controlled substance is detected but does not fulfill the required analytical techniques for identification may be reported as "No controlled substance confirmed.
- If there is an insufficient amount of substance to analyze, it may be reported as "Quantity not sufficient for complete analysis".
- If item has degraded to a state where analysis cannot be performed such as rotted vegetation or coagulated body fluids it may be reported as "Not Suitable for Analysis".
- Items that do not fall into one of the above categories and does not fall under the Pharmaceutical Identification exemption may be reported as "No Analysis."
- Plant material suspected as Marihuana, but determined by analysis to be negative, is reported as "Negative" with no weight.
- For drugs that fall into two or more penalty groups, report the drug as listed in the Controlled Substance Act and add any footnote as appropriate to help identify the penalty group.
- Formulations containing controlled substances
  - In some tablets, capsules and cough syrup preparations containing a controlled substance, it is necessary to know the amount of the controlled substance present to establish the penalty group as stated in the Texas Controlled Substances Act.
  - The amount present may be determined by accepted analytical quantitation procedures or by reliable pharmaceutical information.
  - Footnotes should be used to help the customer understand which penalty group the controlled substance falls under.
  - At the discretion of the analyst and case dependent, the reporting of the non-narcotic active ingredients may be reported to help distinguish between penalty groups.
- If pharmaceutical markings are used in determining the formulation, (for liquids or tablets), the report will contain a footnote stating "Per pharmaceutical identification, sample contains" and the suitable paragraph from the Texas Controlled Substances Act or an equivalent statement.
  - Examples:
    - Hydrocodone qualifying as Dihydrocodeinone.

    - Codeine
- For samples with obliterated pharmaceutical markings (crushed tablets or liquids in unmarked containers) the report will state the name of any controlled substances and the name of any active nonnarcotic ingredients. (see Hydrocodone and Codeine as examples below)
  - Hydrocodone
    - "Hydrocodone" and an active nonnarcotic ingredient are reported as "Hydrocodone and the active nonnarcotic ingredient". No footnote will be used unless sample is quantitated.
    - "Hydrocodone" if no active nonnarcotic ingredient is present. No footnote will be used unless sample is quantitated.
  - Codeine
    - Codeine and the active non-narcotic ingredient. No footnote will be used unless sample is quantitated.
    - Codeine, if no active non-narcotic ingredient is found. No footnote will be used unless sample is quantitated.

- Marihuana and Marihuana Seeds
  - Report plant substance confirmed as "Marihuana.
  - If a significant amount of an impurity, such as tobacco, is present in the marihuana sample, make a conservative visual or microscopic estimate of the percent of marihuana present in notes and report the net weight.
  - If cigarettes or cigarette butts require analysis and the net weight is critical for determining the penalty group, separate the plant matter from the cigarette paper to determine the net weight.
  - Report the results of marihuana pipes and the charred remains of marihuana as Tetrahydrocannabinols (THC) and the weight as "trace", unless microscopically identifiable marihuana is present.
  - For item that consists of suspected marihuana seeds only, no analysis will be performed and reported as No Analysis.
  - If wet plants are submitted, they should be air dried in a secured area of the laboratory. Remove the mature stalk and roots if present from the plant. Record the weight of the remaining plant material once dried.
  - Baked goods/candy containing marihuana in which the plant material can be microscopically confirmed as marihuana will be reported as Marihuana and weight reported in ounces.
  - Baked goods/candy containing plant material that cannot be confirmed as marihuana but tests positive for tetrahydrocannabinols will be reported as "Tetrahydrocannabinols" and weight reported in grams.

- Hash/Hashish
  - For State charges, report compressed resinous plant material (Hash/hashish) and liquid extracts as "Tetrahydrocannabinols", report the weight in grams and document if fragments of plant material (such as leaf fragments and cystoliths hairs) are visible under examination.
  - For federal charges, report Hash that qualifies under federal guidelines as "Tetrahydrocannabinols" plus at least two of the following: cannabinol, cannabidiol,

cannabichromene, and document if fragments of plant material (such as leaf fragments and cystoliths hairs) are visible under examination.

- LSD
  - Only the number of abuse units and no weight of the LSD carrier (e.g. paper) will be reported. See Technical Manual for calculations in determining abuse units for non-perforated paper or liquids.

- Reporting Mushroom Samples
  Report psilocybin mushrooms as "Psilocin". Psilocybin may be reported if it has been confirmed using IR or derivative procedure on GC/MS along with retention time of standard.

- Reporting Opium Samples
  - Morphine, codeine and thebaine are the opium alkaloids that are controlled substances. Non-controlled alkaloids include papaverine, noscapine and narceine.
  - Opium in commercial preparations should be reported as "Opium" only if there is no heroin present and morphine and codeine are detected in combination with at least one of the other alkaloids and one or more active non-narcotic ingredient.
    - Under state law, report with footnote "Per pharmaceutical identification sample contains no more than 500 milligrams per 100 milliliters or per 100 grams, or no more than 25 milligrams per dosage unit."
  - Solid or semi-solid samples: The results will be reported as "Codeine and Morphine and (at least papaverine, noscapine or narceine)" with a footnote stating: "These are commonly detected constituents of opium."
  - Since there are at least 7 types of opium listed in the state law, it is crucial to research which penalty group applies to the sample prior to reporting results.

- Reporting Controlled Substances on a Substrate
  - If a controlled substance is present on a substrate such as a plant material and cigarettes/cigars, the weight of the substrate is included in the net weight reported since the substrate will be consumed.
  - If a controlled substance is present on Marihuana, report the net weight in grams. Report the controlled substance and the Marihuana. Example: Phencyclidine on Marihuana, or Codeine on Marihuana.

- Federal Report Guidelines

  - Cocaine: Identify if the drug is in its salt or base form
  - Heroin is reported as the base form
  - Methamphetamine should be reported in the salt form for solids and the base form for liquid. The isomer can be reported at the discretion of the analyst but should be documented in the worksheet if determined sample does not meet the definition for ICE.
  - The number of tablets per item is required to be reported to determine the number of abuse units.

Quantitation Reporting Guidelines

As a general rule, only methamphetamine requires quantitation for federal prosecution. Percentage determination for cocaine and heroin can be requested under special request and justified by the courts. If the sample is quantitated for federal prosecution, report the substance confirmed, followed by the concentration in parenthesis. Percentages above 1% are reported as truncated whole numbers.

- Cocaine: If the sample is in the base form, no quantitation is required.
- If the sample is in the salt form, report as Cocaine (salt form) such as Cocaine Hydrochloride and the percentage as the base form if quantitation is requested.

- Methamphetamine
  - Depending on the purity weight conversion between methamphetamine actual and ICE:
    - If the purity weight conversion will enhance the penalty level as ICE, then it should be reported to meets the federal guideline for ICE and should be reported as "d-Methamphetamine Hydrochloride" and the percentage as the hydrochloride salt.
    - If the purity weight conversion will not enhance the penalty level then it can be report as methamphetamine and the percentage in base.
    - If the sample <u>does not</u> meet "ICE" per definition,
      - It should be reported as Methamphetamine in the base form and the percentage reported as the base form. Methamphetamine (45% as base)
      - Salt form and or isomer can be listed at the discretion of the analyst but should be documented in worksheet if determined.

- Heroin is reported in the base form as well as the percentage.

- Samples with a purity equal to or lower than 3 standard deviations of the method uncertainty shall be considered unsuitable for quantification. The data and values calculated shall be included in the case record.

- If a liquid sample from a clandestine laboratory is quantitated, report the name of the substance confirmed followed by the concentration truncated to whole numbers in parenthesis. Report the weight of the entire item. Calculate the total amount of the controlled substance in sample and document in the notes section of worksheet.

Recording and Reporting Weights

Record the model number and serial number of the balance used to determine the weight of the item. The appropriate balance should be used for the weight being measured and precision required. The weight report wording will be determined by the uncertainty estimate for each balance.

- Weights less than 0.01 gram will be reported as "Trace".

- For the reported conclusions below no weight will be reported. Recording the gross weight prior and after analysis is acceptable for this type of samples. The analyst has the option of determining and recording the net weight.
  - No controlled substance detected.
  - No controlled substance confirmed.
  - Quantity not sufficient for complete analysis
  - No Analysis
  - Negative
- It may be necessary to report the net weight for which no analysis was performed. This fall under the pharmaceutical identification exception. (see Special reporting guidelines)

Controlled Substances and Dangerous Drugs

- Capsules and tablets
  - If a controlled substance or dangerous drug is confirmed in a pharmaceutical or non-pharmaceutical tablet or capsule, report the total weight of tablets.
  - The number of tablets and capsules will be reported in the description of the item.

- LSD - Report the number of abuse units of LSD samples as defined below:
  - Count and record the number of perforated blotter paper, tablets, gelatin wafers, sugar cubes, stamps, candy pieces or other single abuse units.
  - If the blotter paper is not marked, each one quarter-inch square section of paper is considered a single abuse unit.
  - If the sample is liquid, 40 micrograms of LSD is one abuse unit.
  - The analyst's notes will document how the number of units was calculated. Such as (# of abuse units was calculated by measurement of one quarter-inch square per abuse unit) or (# of abuse units was calculated by using 40 micrograms per abuse unit)

- Volatile chemicals - If an abusable volatile chemical is identified report the weight in grams. (See Health and Safety Code Chapter 485)

Marihuana

- For samples weighing less than one pound, report the weight of marihuana in ounces, truncated to two decimal places.
- Report samples weighing equal to or more than one pound in pounds, truncated to one decimal place.
- If sample weighs less than 0.01 ounce, report "Marihuana Less than 0.01 ounce."
- Use 28.35 grams per ounce and 454 grams per pound for conversions.

Clandestine Lab Chemicals

Occasionally substances that are not controlled substances or dangerous drugs must be analyzed and reported. Record and report these chemicals in the same manner as dangerous drugs

THE UNCERTAINTY OF MEASUREMENT (UOM) (ISO 5.1.2, 5.4.6, ASCLD/LAB 5.4.6)

Uncertainty of Measurement is used to indicate the degree of variability, at a specified level of confidence that can be expected for that particular measurement or method.

A measurement of uncertainty should take into consideration the potential variables that contribute to the measured results. Some sources that contribute to the uncertainty include, but are not limited to, materials and equipment used, environmental condition, the analyst performing the test and the properties or condition of the item being tested. To minimize the possibility of bias in calculating the uncertainty of the balance, it is recommended that balance checks be performed by various analysts. All components that may contribute to the measured uncertainty will be taken into consideration in the Uncertainty Budget. (ISO 5.4.6.2)

For quantitative measurements, such as alcohol concentration and purity of controlled substances, the measurement of uncertainty associated with these quantification well be determined.

A qualitative procedure such as identifying the presence of a controlled substance does not require a measurement of uncertainty.

The following test procedures have been identified as requiring an estimation of uncertainty. The uncertainty estimate can be found in the Technical Manual for each discipline below: (ISO 5.4.6.1)

Blood Alcohol concentration
Drugs: Controlled Substance Purity
Drugs: Controlled Substances reported weights

The confidence level for the reported net weight and the reported quantitative purity results is 99.7%. This is addressed as a footnote on all lab reports and does not have to be addressed per item. Any deviation to this confidence level will be reported as a footnote per that item.

Reporting Estimated Uncertainty for Qualitative Drug Results

- The estimated uncertainty will be reported in the same unit as the net weight. (ISO 5.10.3.1c)
- If the net weight is less than or equal to the estimated uncertainty, report the weight as “trace”.

Examples:

- Controlled Substance, Dangerous Drug, Marihuana or Compound Confirmed
  Net weight: 1.01 ± 0.06 gram(s)

Reporting Quantitation Uncertainty Results for Drugs

The percentage is reported in whole numbers.
Drug (salt or base form)
Net Weight
Purity: ## ± # % as (salt or base form)

Example:
D- Methamphetamine Hydrochloride
Net Weight 53.79 ±0.06 grams
Purity: 85% ±3% as Hydrochloride Salt

4.3 Release of Records Information

4.3.1 Release of Information: No Supplemental Requirements.
4.3.2 Release of information to the News Media: No Supplemental Requirements.
4.3.3 Open Records Requests: No Supplemental Requirements.

4.3.4 Discovery Court Order

- Discovery court orders are assigned to section "BACO" for blood alcohol cases and "DCCO" for drug cases.
  - The assigned analyst is responsible for complying within the due date in the court order if possible.
  - Upon completion of the court order, the assignment will be administratively closed.
- Completion of the order via email may include the court representative and the requestor.
- Completion of the order via CD containing requested documentation should also include a copy of the order. Two copies of CD should be created: (1) for court and (1) for defense.
- Release of the CD will be to the court representative for dissemination to the defense.

No Supplemental Requirements

4.4 Removal of Records for Court

No Supplemental Requirements

4.5 Archiving Laboratory Case Files

No Supplemental Requirements

4.6 Expunctions

The section has several locations for information requested for expunction. See Appendix 04 for the list of locations.

4.7 Control of Laboratory Records

No Supplemental Requirements

5. EVIDENCE PROCEDURES

5.1 General Practices

After Hour Rush Cases: On special circumstances, the section may receive evidence directly from an officer at the laboratory. The evidence will only be accepted if a general offense report and property report exist in Versadex.

Storage of Chemicals as Evidence
The three chemical storage buildings are divided into 6 separate storage areas to allow for segregation of incompatible chemicals. The buildings are numbered 3, 4, and 5. Each building is separated into two rooms and are labeled “A” and “B”. Building 5 has exhaust fans located at floor level to remove heavy flammable vapors. Buildings 3 and 4 have high mounted exhaust fans for the removal of ordinary chemical vapors.

Chemicals are to be segregated for safety and according to the following segregation plan:

- Building 3A
  No Chemicals or evidence will be stored in this building. This area houses the alarm system and supplies for chemical seizure, transport and storage.

- Building 3B
  Oxidizers (permanganates, nitrates, chlorates, perchlorates, peroxides, bromates, iodates, periodates, persulfates, chromates, dichromates, and hypochlorites).

- Building 4A
  - Corrosives (bases)
  - Non-flammables solvents (chlorinated solvents
  - Drying room for plant material suspected of being Marihuana,
  - Controlled Substances
  - Contaminated clothing in plastic bags in Building 4A or 4B until packaged into Biohazard box and transferred to Division Biohazard disposal room.

- Building 4B
  - Corrosives (acids)
    - Concentrated acids must be segregated due to the incompatibility of nitric acid with sulfuric acid and sulfuric acid with hydrochloric acid
  - Phenylacetic acid,
  - Drying room for plant material suspected of being Marihuana
  - Controlled Substances
  - Contaminated clothing in plastic bags until packaged into Biohazard box and transferred to Division Biohazard disposal room.

- Building 5A
  - Flammable solvents (alcohols, acetone, acetic anhydride)
  - Non-flammable solvents

- Building 5B
  The below substances need to be packaged separate from each other
  - Reducing compounds (lithium, aluminum hydride, sodium, potassium, sodium borohydride phosphorus, nitrites, and sulfur)
  - Sodium Acetate, lead acetate, cyanides, mercuric chloride

- Unknown chemicals - If a particular chemical cannot be confirmed by available chemical means, label the bottle as UNKNOWN. (One tub for liquids and one for solids).
- Contaminated Glassware and equipment- Glassware and related contaminated equipment are to be cleaned using triple solvent rinsing and broken in barrels for discarding. Glassware or equipment with extreme contamination that cannot be readily cleaned will be placed in a container for removal and disposal by a hazardous waste contractor or by incineration.

- A chemical storage inventory will be maintained for all chemicals placed in storage. Record the date placed in storage, the incident number, the weight of the chemical and total accumulative quantity in storage.

5.2 Observation by Outside Experts

No Supplemental Requirements

5.3 Evidence Disposal

Evidence that qualifies as excess quantities at clandestine lab may be disposed at site by a contracted vendor. See Texas Controlled Substance Act Section 481.160.

Clandestine lab evidence considered to hazardous for storage, transport and disposal by evidence room will be disposed by chemistry unit utilizing contracted vendor.

5.4 Destruction of Hazardous Substances

No Supplemental Requirements

5.5 Outsourcing

No Supplemental Requirements

6. LABORATORY SAFETY

Practice

- Syringes - Due to the biohazard nature of syringes, upon completion of analysis, the sample will not be returned to the syringe. It will be packaged into a separate lab provided container and properly labeled with unique identifiers. (ASCLD/LAB 5.3.6)
- When possible, at least two analysts should be present at the hazardous storage buildings during loading, unloading, or sampling of seized chemicals.

- **Clandestine Lab Site Safety**

- After the initial entry team has arrested all suspects and secured the site, all officers and suspects are evacuated from the site and the site safety assessment begins.

- **Assessment:**
  - The assessment of a clandestine lab consists of one or more officers of the Clandestine Laboratory Response Team to determine what chemicals and potential hazards exist. They will determine if certified analyst is needed to assess chemicals present, and what reactions are taking place.

  - The Site Safety Officer will determine the level of protection to be worn at the site. The analyst and Response Team should wear a minimum of Level B protection during assessment.
    - Level A protection consists of a totally encapsulated chemical resistant suit worn over SCBA with a full face piece, inner and outer chemical resistant gloves, and chemical resistant boots.
    - Level B protection consists of self-contained breathing apparatus (SCBA) with a full face piece, chemical resistant coveralls, inner and outer chemical resistant gloves, and chemical resistant boots.
    - Level C protection consists of a full face piece, air-purifying, canister equipped respirator, chemical resistant coveralls, inner and outer chemical resistant gloves, and chemical resistant boots.
  - The site safety officer can downgrade the level of protection when they deem ventilation has been accomplished from the results of atmospheric measurements,
  - When all processes have been shut down and have cooled to room temperature, another set of atmospheric measurements should be taken.
  - Ventilation is required if:
    - The concentration of oxygen is less than 19.5 percent or greater than 20 percent.
    - The concentration of any combustible gas is greater than 25 percent of the lower explosive limit (LEL).
    - The concentration of any organic vapors and gases is greater than the permissible exposure limit (PEL) or the threshold limit value (TLV) of their respective components, or generally greater than 5 PPM if the compounds are not known.
    - Before attempting ventilation, the entire operation must be surveyed for explosive devices and booby-traps.
    - Ventilation can be accomplished by opening doors and windows after ascertaining that they are not booby-trapped

  - Be wary of ignition sources. Do not turn on lights or flip any switches. Use the air monitoring equipment to assess the concentration of combustible gas before flipping switches.
  - Carefully remove the source of heat, if any, from the reaction. Eliminating the heat will usually stop or slow down a reaction.
  - Do not turn off water supply to condensers or electrical stirrers until reactions have stopped and cooled to room temperature.
  - If gravity or vacuum filtration is occurring, allow the process to conclude.

- If compressed gas is being fed into a reactor, it should be shut off first by turning the main valve at the top of the cylinder and then shutting off the regulator valve.
- If a vacuum system is in use, it should be brought to atmospheric pressure by slowly allowing air into the system before turning off the vacuum pump.
- If an exothermic (heat producing) reaction is in process, allow it to continue to completion and then cool to room temperature.

- **USE OF AIR PURIFYING RESPIRATOR**
  - Air monitoring instruments shall be used to determine oxygen levels, organic vapor levels (PPM), and concentration of combustible gas (LEL) in atmosphere of clandestine lab.

  - Air Purifying Respirators (APR), will be selected on the basis of hazards present at each specific site. APR will not be used if:
    - Oxygen level is below 19.5%.
    - In any IDLH atmosphere.
    - Atmosphere is unknown.
    - Atmosphere is greater than twice the TLV.

  - Respirators will be cleaned and disinfected after each use.

- **Transporting Chemicals**
  - When chemicals are seized, incompatibles will be properly segregated for transporting to the chemical storage buildings. Unlabeled containers or mislabeled containers should be properly labeled if contents are known or suspected. Use vermiculite to prevent breakage or spilling.
  - Use analyst approved containers for transporting chemicals if not packaged in container provided by the chemical supplier. Avoid placing chemicals directly on the floor of truck bed when possible.
  - **Ether** will not be transported or stored.

- Chemicals of non-evidentiary value such as chemical waste from chemical processes will be labeled with a list of chemicals contained in the waste container.

- A chemical storage inventory will be maintained for all chemicals placed in storage. Record the storage date, the incident number, the number of containers, the weight of the chemical and total accumulative quantity in storage.

- Transportation, handling and storage of compressed gases see Appendix 05

- **EXPOSURE REPORTS -** A Clandestine Lab Exposure Report Form (SA 001) will be completed as soon as practical and forward to division safety manager and clandestine lab site safety officer.

7. PERSONNEL

No Supplemental Requirements

8. COMPUTER RESOURCE MANAGEMENT

No Supplemental Requirements

APPENDIX 01 CRITICAL SUPPLIES

- Reference materials for blood alcohol
  - Reference materials for quantification (See list in Blood Alcohol Manual)

- Reference materials for drug analysis:
  - Reference materials for quantitation

APPENDIX 02 ABBREVIATIONS

- Acceptable standard abbreviations worksheets for weight and measurements

Word	Abbreviation	Word	Abbreviation
centimeter(s)	cm	microgram(s)	ug, mcg
deciliter(s)	dL	milliliter	ml
gallon(s)	gal	milligram(s)	mg
gram(s)	g	millimeter(s)	mm
Grain	grain	ounce(s)	oz
inch(s)	in, “	ounce(s), liquid	liq oz
kilogram(s)	kg	pint(s)	pt
liter(s)	L	pound(s)	lb(s), #
microliter(s)	ul	Foot	ft, ‘

- Acceptable standard abbreviations for colors.

Color	Abbreviation
Black	bk
Blue	bl
Brown	br
Green	gr
Orange	or
Pink	pk
Purple	pr
Red	rd
No Change	nc

- Acceptable non-standard abbreviations for commonly used

Word/Phrase	**Abbreviation**
Approximately	~; approx.
Amount	amt
Blood Alcohol Concentration	BAC
Contains or containing	→
Evidence Consumed in Analysis	ECA
From	F/
Green Plant Substance	GPS
No Analysis	NA
No Controlled Substance Detected	NCS
Number (if in front of a number eg: #12)	#
Plant Substance	PS
Sample Insufficient for Analysis	SIA; ISA
With	W/; w/
Without	W/O; w/o

Ziplock lab provided (for repackaging)	ZLP

- Acceptable non-standard abbreviations for drugs and chemicals.

Drug	**Abbreviation**
Cocaine base	Crack
Cocaine Hydrochloride	Coke, cocaine HCl
Gamma Hydroxybutyric Acid	GHB
Hydrochloric Acid	HCl
Lysergic Acid Diethylamide	LSD
3,4-Methylenedioxyamphetamine	MDA
3,4-Methylenedioxymethamphetamine	MDMA
Methamphetamine	Meth
N-benzylpiperazine	BZP
Phenylacetone	P2P
Phencyclidine	PCP
1-(1-phenylcyclohexyl)piperidine	PCC
Sulfuric Acid	H_2SO_4
Tetrahydrocannabinols	THC
1-(3-trifluoromethylphenyl)piperazine	TFMPP
2,5-dimethoxy-4-iodoamphetamine	DOI
(6-monoacetylmorphine)	6-MAM

APPENDIX 03 FC CASE MANAGEMENT PRIORITY SYSTEMS

- Drug Priority Codes

LIMS Priority Assignment Code	Title	Chemistry Lab Use Description
1	Rocket Docket	Special classification of request made by Travis County
2	Rush – Jail	Person is in jail awaiting charges to be filed. Report is due with 24 hours for misdemeanor or 48 hours for felony from time that person was jailed
3	Normal	Default priority code, to be changed dependent on requestor and request
4	Court	Request made by DA investigator or Prosecutor. Trial date is imminent.
6	Rush – Federal	Drug items that have been identified as having federal charges filed
7	Rush – Print DC	Items have already been analyzed, only require separation for print processing
8	Detective Requested	Drug items for pending narcotic investigations.
9	TCSO Rockets	Travis County Sherriff's Office drug cases, 14 calendar days for report
0	DO NOT USE	
A	AISD	Austin Independent School District Case
C	Clandestine Lab	Clandestine lab coding for disposal purpose of items retained by the lab.
D	Drugs with DNA	Code for drug items that require DNA processing. DNA must be conducted prior to drug testing.
G	Grand Jury	Cases designated by the courts and pending grand jury indictment
H	Hays County	Cases submitted and requested by Hays County, San Marcos PD, Kyle and Buda

J	Juvenile	Cases requested by the juvenile courts
M	Plant Material Drying	Plant material drying and awaiting charges
N	Narc-Warrant - Print	Detective requested cases that require analysis for warrants to be issued or for print process and drug analysis
O	Outside testing	Items sent outside lab for testing – no APD testing required.
P	Proficiency	Sample that has been designated as proficiency or competency testing
R	Reversal	Reversal cases that do not appear on the rocket list but need to be worked to close out assignment
T	System Testing	To be used on drug case that tests updates to Live LIMS system, or other assignments that require analysis but no report such as Intermediate checks of Reference materials
W	Williamson County	Cases requested by Williamson County
X	Found Narcotics/Property	Items submitted to lab for drying purposed only, no analysis to be conducted, case for training purpose and controlled sample was used

- BAC Priority Codes

LIMS Priority Assignment Code	Title	Description and Report Due date
3	Normal	Default priority code, can be changed dependent on requestor and request
4	Court	Request made by Travis County DA's office to meet court date or by DPS for ALR hearings
8	Detective Requested	Request made by Detective for Blood specimen or biological specimens that require outside testing
O	Outside testing	No in-house analysis, BAC analysis to be performed by an outside lab
P	Proficiency	Sample that have been designated as proficiency or competency testing
W	Williamson County	Cases requested or occurred in Williamson County

APPENDIX 04 EXPUNCTION INFORMATION

- The Forensic Chemistry Section has several locations that need to be searched to that contain information often requested for expunction such as name, date of birth, and cause numbers.
  - Forensic Chemistry Lab Number Log books are located in Admin file room
    - For Drugs: 1975 through June 1989 – contain defendant names
    - For Blood Alcohol: from 1984 to April 1986 contain defendant names
  - Files stored at Iron Mountain are Drug case with lab numbers prior to LIMS from 5000-48799 and Blood Alcohol cases from B0050000-B006574.
    - Through property module of Versadex determine when evidence was received by lab.
      - If evidence was received by Deborah Janousek there is not lab folder, evidence was received for disposal only. All lab submission forms submitted for disposal only prior to 2004 have been disposed of in accordance with retention record.
    - Use Lab Number spiral log books located in file room to find the lab number by the date evidence was submitted to the lab.
    - Use this lab number to find the transmittal number for storage box, transmittal number is used to request return of box
      - Location of transmittal numbers to lab number: "G:\Chemistry Unit\Outside Storage\Files at outside storage.xls" under drug folder or BAC folder tab.
    - Request Admin Staff to have box recalled from Iron Mountain
    - Admin Staff will pull file from box for expunction of information
    - Verify that information has been expunged and Admin Staff will return file/box to Iron Mountain.
  - Crime Scene investigations conducted by Chemistry staff are now located in Crime Scene section of the Admin file room. The time period for these cases is 1994 through 1997.
  - Database for case from July 2003 to middle of January 2007. Located at "G:\Chemistry Unit\NFLIS\AustinTXNIMS.mdb"
    - Upon opening database do not open current Access, select “No”
    - Select Data Entry/Case View
    - Enter in offense number include and preceding zeros such as 2004-0010269. As you start to type in case number is show active case for that year.
    - Delete requested information and enter “Expunge” into Last Name or update name if change of name only.
  - Chemistry Staff from 1975 to 2000

    Rudy Bohac AP0586
    Ralph Owen AP0652
    Debra Janousek AP1241
    Glenn Harbison AP1770
    Gloria Rodriguez AP2320
    Bobby Urbanovsky AP0588
    Sam Bivone AP0747
    Tony Arnold AP1758
    Mary Villarreal AP2242

APPENDIX 05 COMPRESSED GASES

All compressed gases are on contract.

- Contact APD Purchasing for current contract if supervisor is not available.
- Receipt for tanks received and picked up should be given to supervisor for budgeting purposed.

Type of cylinder tanks:

- 300 cu ft. of UHP or higher grade for Hydrogen and Helium
- 200 cu ft. of UHP or higher grade will be acceptable if shortage of 300 cu ft will cause section discipline to shut down. We are required to notify APD purchasing if this occurs.

Locations:
All compressed gas cylinders are received into the cylinder holding cell. All empty compressed gas cylinders are to be returned to holding cell for return to vendor.

- Cylinder holding cell (1st floor)
- Manifold closet (2nd floor)
- Drug instrument room
- Blood alcohol lab

Safety:

- All tanks should have tank cap to protect nozzle.
- All tanks should be secured to wall or cart during transport
- Upon receipt, tanks should be labeled “Full” and date received.
- Empty Tanks should be labeled “Empty”.
- Tanks not suitable for used in lab
  - Cylinders that appear to be defective such as stripped thread or connector nozzles should be brought to the attention of the supervisor immediately.
  - Gases that test to be contaminated should be addressed to the technical lead and the supervisor immediately.
  - These tanks should be labeled “DO NOT USE” and segregated from full tanks in the holding cell.

Replacing tanks and Inventory

- Manifold Closet
  - Tanks in reserve should be connected and system checked for leaks.
  - Lines leading to the manifold should be pressurized to indicate the amount of gas available for use.
- Vendor should be called to pick-up empty tanks.