



Laboratory Services Bureau

CONTROLLED SUBSTANCES SECTION

PROVIDING THE HIGHEST QUALITY FORENSIC SCIENCE SERVICES TO THE CITY OF PHOENIX

The **Controlled Substances Section** evaluates items of evidence to determine if they contain Controlled Substances as defined in Arizona's Criminal Code. The section is comprised of Forensic Scientists who perform analysis of evidence and a Laboratory Technician who performs support duties.

CONTROLLED SUBSTANCES



Controlled Substances Analysis

A forensic scientist follows an analytical scheme designed to gather more specific information about a suspected controlled substance during each step of the process.

The steps in the process are:

Visual Examination

A forensic scientist looks at the evidence to determine what they are dealing with and if it is in a usable form and condition.

*Is it plant material? A powder or crystalline material? A pill?

Is it in a form and condition to be used or manipulated into use by the known practices of drug users?

This is a legal requirement derived from Arizona case law: *St. v. Moreno* (1962).

If the substance is in a usable form and condition...

Determine Quantity

A forensic scientist will determine the weight, the volume or the count associated with an item of evidence. The quantity of material can be considered by the criminal justice system to determine if a legal threshold amount of a controlled substance is present. The threshold amounts are defined in Arizona's Criminal Code.

Preliminary Testing

A forensic scientist will perform tests on samples from an item of evidence to gather information about what class of drug they are dealing with. Preliminary tests

guide the forensic scientist and help them determine if a sample needs any special preparation to subsequently identify the sample. Examples of preliminary tests include:

- *Chemical color tests
- *Physical indicator (pill markings)
- *Portable Raman spectroscopy (TruNarc)
- *Thin layer chromatography



Confirmatory Testing

After gathering preliminary information about the evidence, a forensic scientist will prepare a sample of evidence for identification. The Controlled Substances Section uses gas chromatography/mass spectrometry

(GC/MS) to identify controlled substances. GC/MS provides specific structural information about a substance which allows a forensic scientist to identify it.

An identification is made by comparing data obtained from an item of evidence to data obtained from a known standard sample of a drug.

The Controlled Substances Section maintains a collection of hundreds of known controlled substances samples.

Reporting Conclusions

After conducting all the steps in the analytical scheme, a forensic scientist will prepare a report of their findings. The report will include information to inform the criminal justice system of what the substance is, the legal category the substance belongs to, if the substance is in a usable form and condition, and how much of the substance there is.

Here is an example of a controlled substances report conclusion:

Heroin, a narcotic drug in a usable condition. 3.33 grams +/- 0.11 grams net weight as received.



A few notes:

The Controlled Substances Section performs qualitative analysis of controlled substances. The section does not perform quantitative analysis of controlled substances. Qualitative analysis provides information about what a substance is (e.g. the sample contains methamphetamine). Quantitative analysis provides information about what a substance is and the percent of the substance in the sample (e.g. the sample contains 65% methamphetamine). Because of definitions in Arizona's Criminal Code, laboratories only need to perform qualitative controlled substances analysis.

Not all analyses lead to an identification of a controlled substance as defined by Arizona's Criminal Code. The Controlled Substances Section continuously sees new, emerging drugs in items of evidence. The section can provide information to investigators about what emerging drug they are dealing with and investigators can modify their investigation with this new information.

Field Drug Testing Program

The Controlled Substances Section administers the Department's Controlled Substances Officer (CSO) Program. The CSO Program has been in place since 2000 and is a cooperative agreement between the Maricopa County Attorney's Office (MCAO) and the Phoenix Police Department.

If a CSO performs field drug testing on an item of evidence and generates a sworn statement of their findings, the MCAO will file charges based on the officer's affidavit. The program applies to both possession and sale cases.

The primary tool used by CSOs to evaluate items of evidence is the TruNarc instrument. With the TruNarc, an officer can provide information on over 20 different controlled substances. The CSO Program provides information that allows for rapid charging of suspects and reduces the number of items which require immediate testing by the Controlled Substances Section.

