

Stephen Comstock (SC) and Sandra McVeigh (SM) are the Toxicologists and Certified Forensic Alcohol Analysts assigned to complete drug and alcohol testing at Mineral King Laboratory which is owned by Tulare Regional Medical Center. Also, Sandra McVeigh is the Forensic Alcohol Supervisor and the custodian of records. Both Stephen and Sandra can testify to the Toxicology Report with a brief description of testing and quality control requirements as listed below. Currently, we have no one qualified to testify as an expert witness to include our pathologists which are filling shortfalls in other counties.

Chain of custody protocol brief description:

Chain of custody: is a record of signatures of persons that have handled the sample(s), dates and times as well as test requisition orders. Samples are received at MKL from law enforcement, courier or the sample's collector with a chain of custody in a specimen biohazard intact/un-tampered bag (detailed at Chain of Custody Process).

ELISA Screening Method brief description:

The ELISA Screening Test is based upon the competitive binding to antibody of enzyme labeled antigen and unlabeled antigen, in proportion to their concentration in the reaction. This screening method provides preliminary analytical test results. When there are presumptive positive specimens those identified specimens will require more specific testing by GC/MS prior to confirmation.

GC/MS (Gas Chromatography Mass Spectroscopy) testing briefly:

Currently, GC/MS is the preferred method for confirmation of drugs. The gas chromatograph using a column separates different molecules in a mixture by the differences in chemical properties. The molecules move off the column at different times (retention time) into the mass spectrometer. The mass spectrometer ionizes the molecule into fragments and provides picture of the fragments using their mass-to-charge ratio. The picture of specific fragments, identify the substance.

Forensic Alcohol Analysis Method brief description:

Samples are analyzed by GC-FID (Gas Chromatography, Flame Ionization Detection) approved by the State of California under Title 17. As above the gas chromatograph column separates different molecules in a mixture which move off the column to the FID. The FID detects ions formed during combustion of the organic mixture in the flame which is proportional to the concentration of the organic species in the sample gas stream. The following are performance standards requirements from California Code Title 17 that must be met for release of alcohol results.

1. The result obtained for the Blank sample must be less than 0.01%.
2. The result for each secondary alcohol standard must be $\pm 5\%$ of stated concentration.
3. The result of the quality control reference material must agree within $\pm 0.01\%$ of the posted determined concentration.
4. The results of the duplicate unknown values must fall within $\pm 5\%$ of the mean results of those concentrations.

Quality control of a run or batch brief description:

All machines/analyzers are maintained in accordance with manufacture recommendations and serviceable before operation. All methods (screening and confirmation) require calibration/standard and/or control procedures before any unknown samples are accepted or reported.