



FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.

**Industrial Hygiene Assessment
of an Unoccupied Property
Resulting in the Discovery of an
Illegal Drug Laboratory
at
8105 W 16th Place
Lakewood, CO 80214-6052**

Prepared for:
Lynn Bartsch
1905 Foothills Drive, South
Golden, CO 80401

Prepared by:

FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.
185 Bounty Hunter's Lane
Bailey, CO 80421



January 14, 2009

EXECUTIVE SUMMARY

On Thursday, January 8, 2009, Forensic Applications Consulting Technologies, Inc. (FACTs) was contracted to perform a standard cursory evaluation for the presence of methamphetamine at 8105 W 16th Place, Lakewood, CO 80214-6052 (the subject property).

Pursuant to the Colorado Real Estate methamphetamine disclosure and testing statute as described by CRS §38-35.7-103(2)(a), FACTs collected two standard five-part composite samples for the quantitative determination of the presence of methamphetamine from ten different locations in the subject property. The sampling data quality objectives (DQOs) employed by FACTs were to determine, within normal analytical confidences,¹ the possibility of methamphetamine presence at the subject property. The samples were collected by Mr. Caoimhín P. Connell, who is an Industrial Hygienist, as that term is defined in CRS §24-30-1402.

Based on state of the art sampling and analysis techniques, we conclusively determined the presence of methamphetamine in the residential structure; therefore, based on current statutes and regulations, the property meets the definition of an “illegal drug laboratory” as described below, is has been conclusively demonstrated to be noncompliant with Colorado State regulations and State statutes as described below.

According to current State of Colorado Regulations and Statutes, our verbal report to the prospective buyer on Wednesday, January 14, 2009, served as “Discovery” as that term is found in Colorado Revised Statutes §25-18.5-103 and “Notification” as that term is used in CRS §25-18.5-103 (1)(a).

Based on this finding, after notification, entry into the property is prohibited by statute CRS §25-18.5-104. The prohibition of entry extends to the owner, the seller, the owners representatives, bank representatives, home inspectors, Realtors, and anyone else “...unless the person is trained or certified to handle contaminated property pursuant to board rules or federal law.”

Background Information

Structure

The subject property built *circa* 1953, consisted of a single family dwelling approximating 1,360 square feet of interior space, with a detached tool shed of approximately 40 square feet. At the time of our visit, the structure was unoccupied, devoid of all chattels and was in a generally good state of repair.

¹ Colorado Department Of Public Health And Environment, State Board Of Health, Regulations Pertaining to the Cleanup of Methamphetamine Laboratories, 6 CCR 1014-3, used merely as a sampling reference.



ASSESSMENT PROTOCOLS

Sampling Protocol

The Industrial Hygiene assessment was performed pursuant to the Colorado's Real Estate methamphetamine disclosure and testing statute as described by CRS §38-35.7-103(2)(a).

According to Colorado revised statutes,² the seller of a property shall disclose in writing to the buyer whether the seller knows that the property was previously used as a methamphetamine laboratory.

During our cursory assessment, the hypothesis was made that the subject property was devoid of detectable concentrations of methamphetamine at a specified limit of detection and data would be collected to support the hypothesis. As such, the data quality objectives were not designed to quantify or characterize the *extent* or degree of contamination, but rather to support the statement: "Methamphetamine is not present in the property above specified levels."

Our DQOs were such that we selected a total sampling area that would result in a reportable quantity limit of 0.09 µg/100cm². That is, unless the concentration of the methamphetamine in the sample submittal exceeded 0.09 µg/100cm², the laboratory would report the concentration as "below detection limit." The value of 0.09 µg/100cm² was selected since according to the State of Colorado Regulations, the minimum permissible concentration of methamphetamine allowed as determined during compliance sampling is 0.1 µg/100cm².

Our testing produced results that failed to support the hypothesis, and we therefore accept the null hypothesis; *viz.* the subject property conclusively contains methamphetamine. Our sampling indicates that if the samples were collected as part of a final clearance sampling protocol, the concentrations would have been approximately twice the minimum permissible concentration of methamphetamine allowed as determined during compliance sampling.

Our data also suggest that there is a finite probability that the methamphetamine concentrations in the property are such that upon completion of the mandatory Preliminary Assessment, conditions at the property may permit the Industrial Hygienist to issue a Decision Statement directly from the mandatory Preliminary Assessment.

Sample Collection

Using standard industrial hygiene methods, we collected two 5-part composite samples from the primary structure. The samples were submitted to Analytical Chemistry, Inc. for quantitative analysis using gas chromatography coupled with mass spectrometry. Analytical Chemistry Inc. is one of the laboratories listed in Colorado's regulations as being proficient in methamphetamine analysis.

² CRS 38-35.7-103(3)(a)



Wipe Samples

The wipe sample media was individually wrapped commercially available *Johnson & Johnson™* gauze pads. Each gauze material was assigned a lot number for quality assurance and quality control (QA/QC) purposes and recorded on a log of results. Each pad was moistened with reagent grade methyl alcohol. Each batch of alcohol was assigned a lot number for QA/QC purposes and recorded on a log of results.

The sampling media were prepared off-site in small batches in a clean environment. The sample media were inserted into individually identified polyethylene centrifuge tubes with screw caps and assigned a unique sample identifier.

Field Blanks

Our data quality objectives did not include a field blank, and none were submitted. The history of the FACTs sampling media has demonstrated a media and solvent contamination level below the analytical detection limit for the method (for n=63).

Field Duplicates

For the purposes of the data quality objectives associated with this cursory evaluation, no duplicates were required, and none were collected.

Sample Results

In the table below, we have presented the result of the sampling in the context of the DQOs.

Sample ID	Sample Location	Methamphetamine Concentration µg/100cm ²
BM010809-1A	Kitchen top of refrigerator	0.23
BM010809-1B	Living room ceiling fan	
BM010809-1C	Dining room ceiling fan	
BM010809-1D	Bathroom top of lighting fixture	
BM010809-1E	South Central Bedroom ceiling fan	
BM010809-1	Composite	
BM010809-2A	SW Bedroom ceiling fan	0.12
BM010809-2B	SW Bedroom furnace return	
BM010809-2C	NW Bedroom ceiling fan blade	
BM010809-2D	Garage room fireplace shelf	
BM010809-2E	Back garage room top of electrical box	
BM010809-2	Composite	

Table 1
Results of Methamphetamine Samples

The submitted composites conclusively contain methamphetamine. If the composite samples had been collected and submitted as part of final verification sampling conducted pursuant to Colorado regulation 6 CCR-1014-3, the results would have indicated that the concentrations were at least twice the statutory clean-up limit permitted by regulation. A copy of the laboratory report is included with this discussion as Appendix A.



PERTINENT REGULATORY STANDARDS

The State of Colorado currently has one methamphetamine regulation and three methamphetamine statutes that are germane to the subject property.

State Statutes

Environmental Statutes

Colorado has one of the country's most comprehensive and scientifically based clandestine drug laboratory regulations. The Colorado regulations become applicable when the owner of a property has received "notification" from a peace officer that chemicals, equipment, or supplies indicative of a "drug laboratory" are located at the property, or when a "drug laboratory" is otherwise discovered,³ and the owner of the property where the "drug laboratory" is located has received notice.

In turn, "drug laboratory" is defined in Colorado Revised Statutes §25-18.5-101 as the areas where controlled substances have been manufactured, *processed*, cooked, disposed of, *or stored* and all proximate areas that are *likely* to be contaminated as a result of such manufacturing, *processing*, cooking, disposing, or *storing*. The definitions of an illegal drug lab includes smoking methamphetamine, since smoking is a process, and its mere presence in the context of illegal possession constitutes *storage* and therefore, an "illegal drug lab" as defined by State statutes.

Pursuant to State statute CRS §25-18.5-105(1), an illegal drug laboratory that has not met the cleanup standards set by the State Board of Health must be deemed a public health nuisance, and must either be demolished or remediated.

Property Statutes

Pursuant to CRS §38-35.7-103 (1) a buyer of residential real property has the right to test the property for the purpose of determining whether the property has ever been used as a methamphetamine laboratory.

The fatal flaws of CRS §38-35.7-103, notwithstanding, pursuant to CRS §38-35.7-103 (2)(a):

If the buyer's test results indicate that the property has been used as a methamphetamine laboratory but has not been remediated to meet the standards established by rules of the state board of health..., the buyer shall promptly give written notice to the seller of the results of the test, and the buyer may terminate the contract.

In this case, the conclusive presence of methamphetamine is a reasonable indicator that the property was used to manufacture methamphetamine. In any event, the manufacturing of methamphetamine, *per se*, is a moot point as described below.

³ CRS §25-18.5-103



Contrary to common misconception, by virtue of these findings, any second test performed pursuant to CRS §38-35.7-103(2)(b) that fails to confirm the presence of methamphetamine can **not** be used to release the seller from the statutory requirements to perform the required Preliminary Assessment, since the discovery and notification have already occurred pursuant to CRS §25-18.5-103 (1)(a) and Colorado regulations 6 CCR 1014-3. Pursuant to State statutes, any additional testing by another Industrial Hygienist can only be used if the data support these initial findings; the data are not permitted to be used to refute, rebut or counter these findings, and cannot be used to provide the seller with regulatory relief.

Criminal Proceedings – Public Nuisance Statutes

Pursuant to State statute CRS §16-13-303(c)(1), every building or part of a building including the ground upon which it is situated and all fixtures and contents thereof, and every vehicle, and any real property shall be deemed a class 1 public nuisance when used for the unlawful storage or possession of any controlled substance, or any other drug the possession of which is an offense under the laws of Colorado. Based on CRS §16-13-303(c)(1), the presence of extant methamphetamine in the property is *prima facie* evidence of possession of the same.

Pursuant to State statute §16-13-308(1)(a), if probable cause for the existence of a Class 1 Public Nuisance is shown to the court by means of a complaint supported by an affidavit, the court shall issue a temporary restraining order to abate and prevent the continuance or recurrence of the nuisance or to secure property subject to forfeiture. Such temporary restraining order shall direct the County Sheriff or a peace officer to seize and, where applicable, close the public nuisance and keep the same effectually closed against its use for any purpose until further order of the court.

An alternative declaration of Public Nuisance may be found in statute §16-13-307(4), wherein an action to abate a public nuisance may be brought by the district attorney, or the attorney general with the consent of the district attorney, in the name of the people of the State of Colorado or in the name of any officer, agency, county, or municipality whose duties or functions include or relate to the subject matter of the action.

In this case, jurisdiction for the abatement of the public nuisance lies with the office of the “Governing Body:”

Mr. Craig Sanders
Environmental Protection Supervisor
Jefferson County Department of Health and Environment
1801 19th Street
Golden, CO 80401

FACTs will forward a copy of this report to the Governing Body on Thursday, January 15, 2009.



State Regulations

Pursuant to Colorado regulations 6 CCR 1014-3,⁴ following discovery and notification, a comprehensive and detailed “Preliminary Assessment” must be commissioned by the property owner (seller) and performed by an authorized and properly trained Industrial Hygienist who must characterize extant contamination. The content and context of the “Preliminary Assessment” is explicitly delineated by regulation. Any remediation or cleaning of the property must be based on the Industrial Hygienist’s Preliminary Assessment, and cannot occur until such assessment has been conducted.

Since discovery and notification had not, to our knowledge, taken place at the time of our visit, FACTs was not performing a “Preliminary Assessment” as that term is defined in State regulation, and this work does not meet the definition of a “Preliminary Assessment” and cannot be used or otherwise substituted for a Preliminary Assessment.

Furthermore, no retesting of the property can challenge these data and provide regulatory relief unless the retesting is performed as part of the Preliminary Assessment, and a Decision Statement is subsequently issued pursuant to state regulations.

Mandatory Contamination Thresholds

The actual methamphetamine *concentrations* found in a sample taken at the subject property, are not germane, are not within our stated data quality objectives, and therefore, are not required to be reported. FACTs has reported the meaningless units in this report as an academic pursuit.

A recurring myth amongst unauthorized consultants fraudulently presenting themselves as Industrial Hygienists in methlab related issues is that if sampling (such as that performed at the subject property) finds methamphetamine, but the concentration is less than 0.5 micrograms per one hundred square centimeters ($\mu\text{g}/100\text{cm}^2$) of surface area, then the property is “OK,” and not covered by the State regulations.

However, this argument is erroneous and no such provisions are found anywhere in State statutes or State regulation. If an Industrial Hygienist chooses non-mandatory sampling (such as performed at the subject property) during an industrial hygiene evaluation, and those samples result in ANY contamination, even below the value of $0.5 \mu\text{g}/100\text{cm}^2$, then the property must, by state regulation, be declared a methlab.⁵ This is due to the fact that cursory sampling does not meet the data quality objectives upon which the State clean-up level of “ $0.5 \mu\text{g}/100\text{cm}^2$ ” value is based.

In any event, contrary to erroneous statements frequently made by consultants fraudulently representing themselves as Industrial Hygienists, the mere value of “ $0.5 \mu\text{g}/100\text{cm}^2$ ” is not the State of Colorado cleanup level, but rather is the value upon which

⁴ Titled: Colorado Department Of Public Health And Environment, State Board Of Health, *Regulations Pertaining to the Cleanup of Methamphetamine Laboratories.*

⁵ *Ibid.* Appendix A



the final cleanup level is based and which is described in the mandatory Appendix A of the State regulations. The Colorado clearance level of “0.5 µg/100cm²,” frequently misquoted by members of the general public, applies exclusively as *prima facie* evidence of decontamination at the end of a project⁶ and is that attainment threshold occasionally needed to issue a “decision statement” (final clearance).

Contrary to popular misconception, there is no *de minimis* concentration during a Preliminary Assessment below which a property could be declared “not a meth lab” or “not of regulatory concern” since virtually any concentration of meth present in a sample at the property would:

*...lead a reasonable person, trained in aspects of methamphetamine laboratories, to conclude the presence of methamphetamine, its precursors as related to processing, or waste products.*⁷

In a recent unofficial opinion issued by the State of Colorado Department of Public Health and the Environment,⁸ the state opined that even when the cursory concentrations are far below state mandated limits:

"Performing a PA [Preliminary Assessment] and clearance sampling is the only way to meet the requirements of the Reg, get the liability shield, and provide protection for future Real Estate transactions."

Although our initial testing was conducted pursuant to CRS §38-35.7-103, based on our observations, our role and activities jointly and contemporaneously fell under CRS §25-18.5-103, and the drug laboratory was “otherwise” discovered.

Statement of Uncertainty

For all sampling and analytical methods, there is a specific uncertainty associated with the analysis. Therefore, for any reported laboratory value, there is a *probability* that the true result is greater than the reported value (Upper Confidence Limit, UCL), or less than the reported value (Lower Confidence Limit, LCL). A laboratory result, therefore, represents a *probable* result in between two confidence limits and may be depicted thus:

⁶ Colorado Department Of Public Health And Environment, State Board Of Health, *Regulations Pertaining to the Cleanup of Methamphetamine Laboratories*, 6 CCR 1014-3.

⁷ *Ibid.*

⁸ Email transmission from Craig Sanders to FACTs, January 31, 2008, quoting Coleen Bresnahan, CDPHE, regarding a property at 32548 Kinsey Lane Conifer, Colorado.





Figure 1
Confidence intervals of Reported Values

The reported value (RV) lies somewhere in between two possible “true” values, the UCL and the LCL.

Compliance and the decision to remediate or not remediate is based not only on the reported value, but also on the statistical uncertainty of the results. So, in the drawing below, where the reported value (A) and the LCL are greater than the decision threshold (the horizontal line), we are *confident* the reported value indicates noncompliance. Where the reported value (D) and the UCL are less than the decision threshold, we are *confident* the reported value indicates compliance.

However, there is an ambiguous zone of reported values, such as (B), where although the reported value is greater than the decision threshold, there is a probability the true value is less than the decision threshold. Similarly, where the reported value is less than the decision threshold, there is a probability the true value is greater than the decision threshold (C).

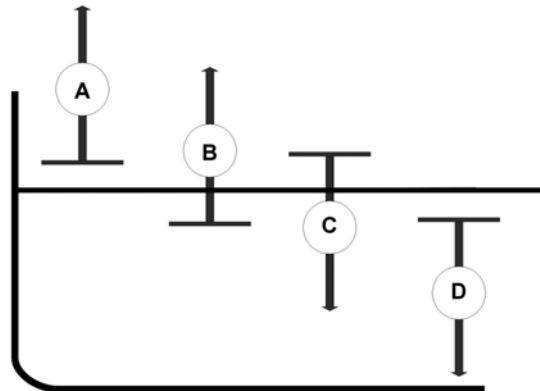


Figure 2
Uncertainty in Reported Values

Standard industrial hygiene sampling protocols require that the Industrial Hygienist consider this degree of uncertainty, known as the total coefficient of variation (Cv_T), for each method. The Cv_T includes the uncertainty associated with both the sampling and analytical processes. For many methods, such as this analysis method, the degree of analytical uncertainty is known and published, and is generally small. However, for field methamphetamine sampling, the statistical uncertainty is generally very large. When we analyze field data from fully characterized properties, we see that the variation of concentrations from the building as a whole usually exhibits a lognormal distribution. As such, geometric standard deviations can be as large as 3.0.



Standard Industrial Hygiene protocols typically use the 95% confidence intervals to determine the possible “spread” of the laboratory results about the true value. As such, where the Cv_T is known, the IH calculates the UCL and LCL and determines if the UCL is greater than or less than the Decision Threshold. In this case, the LCL is conclusively greater than the minimum decision threshold, and the UCL may be greater than the maximum decision threshold.

We did not see anything in this property that would indicate the data distribution would be any different, therefore, there is a finite probability that at least one location in the property has methamphetamine concentrations significantly greater than the maximum permissible level allowed by State regulations. Our sampling merely conclusively confirms noncompliant conditions exist at the residence at the time of sampling.

FOLLOW-UP ACTIONS

Colorado State statutes do not prohibit a prospective buyer from purchasing a property identified as an illegal drug lab. However, those same statutes require any such purchaser of the property to bring the property into compliance within 90 days.

From this point forward, there is only one of two legal paths the property owner can take:

- 1) A Preliminary Assessment must be performed.
- 2) The property must be demolished.

CONCLUSIONS

Based on our objective sample results collected during our January 8, 2009 visit, the subject property contains methamphetamine.

Based on the presence of methamphetamine, the property meets the definition of an illegal drug lab and Class 1 public nuisance as defined in State statutes.

Pursuant to State statutes, the illegal drug lab has been “otherwise discovered.” Pursuant to statute, a Preliminary Assessment must be performed pursuant to regulation by an authorized Industrial Hygienist, and a “decision statement” obtained, or the property must be demolished. Pursuant to CRS §38-35.7-103(2)(a), the buyer must promptly give written notice to the seller of the results of the testing, and the buyer may terminate the contract. We recommend that the registered owners (the buyer) notify the seller in writing, by certified mail, of the results of the methamphetamine tests performed at the property.

Prepared by:



Caoimhín P. Connell
Forensic Industrial Hygienist



APPENDIX A LABORATORY REPORT





ANALYTICAL CHEMISTRY INC.

Established in 1979

4611 S. 134th Place, Ste 200
Tukwila WA 98168-3240

Website: www.acilabs.com

Phone: 206-622-8353

E-mail: info@acilabs.com

Lab Reference:	09102-09
Date Received:	January 9, 2009
Date Completed:	January 13, 2009

January 13, 2009

CAOIMHIN P CONNELL
FORENSIC APPLICATIONS INC
185 BOUNTY HUNTER'S LN
BAILEY CO 80421

CLIENT REF: Bartsch

SAMPLES: wipes/2

ANALYSIS: Methamphetamine by Gas Chromatography-Mass Spectrometry.

RESULTS: in total micrograms (ug)

Sample	Methamphetamine, ug	% Surrogate Recovery
BM010809 - 01	0.073	93
BM010809 - 02	0.039	98
QA/QC Method Blank	< 0.004	
QC 0.100 ug Standard	0.106	
QA 0.020 ug Matrix Spike	0.018	
QA 0.020 ug Matrix Spike Duplicate	0.021	
Method Detection Limit (MDL)	0.004	
Practical Quantitation Limit (PQL)	0.030	

'<': less than, not detected above the PQL

Robert M. Orheim
Director of Laboratories

APPENDIX B CONSULTANT'S SOQ





FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.

CONSULTANT STATEMENT OF QUALIFICATIONS

(as required by State Board of Health Regulations 6 CCR 1014-3 Section 8.21)

FACTs project name:	8105	Form # ML15
Date:	January 14, 2009	
Reporting IH:	Caoimhín P. Connell, Forensic IH	

Caoimhín P. Connell, is a private consulting forensic Industrial Hygienist meeting the definition of an "Industrial Hygienist" as that term is defined in the Colorado Revised Statutes §24-30-1402. Mr. Connell has been a practicing Industrial Hygienist in the State of Colorado since 1987 and has been involved in clandestine drug lab (including meth-lab) investigations since May of 2002.

Mr. Connell is a recognized authority in methlab operations and is a Certified Meth-Lab Safety Instructor through the Colorado Regional Community Policing Institute (Colorado Department of Public Safety, Division of Criminal Justice). Mr. Connell has provided methlab training for officers of over 25 Colorado Police agencies, 20 Sheriff's Offices, federal agents, and probation and parole officers from the 2nd, 7th and 9th Colorado judicial districts. He has provided meth-lab lectures to prestigious organizations such as the County Sheriff's of Colorado, the American Industrial Hygiene Association, and the National Safety Council.

Mr. Connell is Colorado's only private consulting Industrial Hygienist certified by the Office of National Drug Control Policy High Intensity Drug Trafficking Area Clandestine Drug Lab Safety Program, and P.O.S.T. certified by the Colorado Department of Law (Certification Number B-10670); he is a member of the Colorado Drug Investigators Association, the American Industrial Hygiene Association, and the Occupational Hygiene Society of Ireland.

He has received over 120 hours of highly specialized law-enforcement sensitive training in meth-labs and clan-labs (including manufacturing and identification of booby-traps commonly found at meth-labs) through the Iowa National Guard/Midwest Counterdrug Training Center and the Florida National Guard/Multijurisdictional Counterdrug Task Force, St. Petersburg College as well as through the U.S. Bureau of Justice Assistance (US Dept. of Justice). Additionally, he received extensive training in the Colorado Revised Statutes, including Title 18, Article 18 "Uniform Controlled Substances Act of 1992."

Mr. Connell is also a current law enforcement officer in the State of Colorado, who has conducted clandestine laboratory investigations and performed risk, contamination, hazard and exposure assessments from both the law enforcement (criminal) perspective, and from the civil perspective in residences, apartments, motor vehicles, and condominiums. Mr. Connell has conducted over 80 assessments in illegal drug labs, and collected over 1,000 samples during assessments.

He has extensive experience performing assessments pursuant to the Colorado meth-lab regulation, 6 CCR 1014-3, (State Board Of Health *Regulations Pertaining to the Cleanup of Methamphetamine Laboratories*) and was an original team member on two of the legislative working-groups which wrote the regulations for the State of Colorado. Mr. Connell was the primary contributing author of Appendix A (*Sampling Methods And Procedures*) and Attachment to Appendix A (*Sampling Methods And Procedures Sampling Theory*) of the Colorado regulations. He has provided expert witness testimony in civil cases and testified before the Colorado Board of Health and Colorado Legislature Judicial Committee regarding methlab issues. Mr. Connell has provided private consumers, state officials and Federal Government representatives with forensic arguments against fraudulent industrial hygienists and other unauthorized consultants performing invalid methlab assessments.

Mr. Connell, who is a committee member of the ASTM International Forensic Sciences Committee, was the sole sponsor of the draft ASTM E50 *Standard Practice for the Assessment of Contamination at Suspected Clandestine Drug Laboratories*, and he is an author of a recent (2007) AIHA Publication on methlab assessment and remediation.