



**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

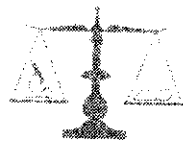
**Preliminary Assessment  
of an  
Identified Illegal Drug Laboratory  
2336 W County Road 60 E  
Fort Collins, CO 80521**

Prepared for:

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## EXECUTIVE SUMMARY

On or about September 23, 2005, members of the Larimer County Drug Task Force (LCDTF) responded to 2336 W County Road 60 E, Fort Collins, Colorado (the subject property), subsequent to a report of possible methamphetamine (meth) related activities at the subject property.

Based on our discussions with members of the on-scene Law Enforcement team and a review of available law enforcement documents, Forensic Applications Consulting Technologies, Inc. (FACTs) has determined that definitive indicators of methamphetamine activity were located at the property. Pursuant to Colorado State regulations,<sup>1</sup> a "Preliminary Assessment" of an illegal drug lab must be performed to characterize extant contamination (if any), and to direct appropriate decontamination procedures (if any). This document, and all associated appendices, CD disc and photographs, is the "Preliminary Assessment" pursuant to those regulations.

This preliminary assessment confirmed widespread and significant contamination throughout the entire residential structure including the garage and all personal items contained in the house, and all items contained in the garage, and the heating system in the residential structure including all associated ductwork. Quantitative sampling confirmed the presence of widespread methamphetamine contamination at the subject property, and confirmed the subject property was an "illegal drug laboratory" as that term is defined in Colorado Revised Statutes (CRS) §25-18.5-101.

Pursuant to CRS §25-18.5-105, the subject property is deemed a "public health nuisance." Pursuant to CRS §16-13-303, the subject property and all of its contents is deemed a Class 1 Public Nuisance. As such, the subject property must be remediated according to State Board of Health regulations 6-CCR-1014-3 or demolished (CRS §25-18.5-103).

Based on our objective data, the entire occupiable structure (including the garage) and all contents contained in the primary structure and the garage, will require full decontamination and/or disposal by a qualified contractor. The furnace system and all associated ductwork must be decontaminated by a qualified, trained, experienced<sup>2</sup> contractor or the furnace system must be entirely removed and/or replaced.

We observed that several violations of State statutes, and State regulations occurred at the property. Specifically:

- 1) Contrary to 6 CCR 1014-3, (§§5.8.1. and 5.8.2) personal items had been removed from the property without required testing.

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<sup>1</sup> State Board Of Health Regulations Pertaining To The Cleanup Of Methamphetamine Laboratories 6 CCR 1014-3.

<sup>2</sup> 6 CCR 1014-3, Mandatory Appendix C

- 2) Contrary to Colorado Revised Statutes (CRS) §25-18.5-103(3), items that were removed from the property were not secured to prevent exposing another person to any toxic or hazardous chemicals until the property and debris is appropriately discarded or cleaned and tested according to board rules.
- 3) Contrary to CRS §25-18.5-104, unauthorized entry occurred onto the property.
- 4) Contrary to CRS 25-18.5-103 and 6 CCR 1014-3(4.), unauthorized decontamination and cleaning occurred at the property in the absence of a Preliminary Assessment.

All work associated with this Preliminary Assessment was performed in a manner consistent with regulations promulgated by the Federal Occupational Safety and Health Administration, (OSHA).

## REGULATORY REQUIREMENTS

### *Preliminary Assessment*

According to Colorado State Regulation 6-CCR 1014-3, following the discovery of an illegal drug lab, as that term is defined in CRS §25-18.5-101, and following "notification," a "Preliminary Assessment" must be conducted at that property. The preliminary assessment must be made according to specified requirements<sup>3</sup> by an authorized Industrial Hygienist as that term is defined in CRS §24-30-1402.

Discovery and notification occurred on September 23, 2005 when members of the LCDTF responded to the subject property. From that point forward, the requirements of CRS §25-18.5 and 6-CCR 1014-3 were in effect.

During the preliminary assessment, the hypothesis is made that the subject area is clean and data will be collected to find support for this hypothesis. Any reliable data that disproves the hypothesis, including police records, visual clues of illegal production, storage, or use, or documentation of drug paraphernalia being present, is considered conclusive, and compels the Industrial Hygienist to accept the null hypothesis and declare the area non-compliant.<sup>4</sup> The strength of evidence needed to reject the hypothesis is low, and is only that which would lead a reasonable person, trained in aspects of meth laboratories, to conclude the *presence* of methamphetamine, and/or its precursors or waste products as related to processing.

Sampling, if it is performed at all, is conducted in the areas with the highest probability of containing the highest possible concentrations of contaminants. According to the State regulations:<sup>5</sup>

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<sup>3</sup> Section 4 of 6 CCR 1014-3

<sup>4</sup> This language and emphasis is verbatim from Appendix A (mandatory) of 6 CCR 1014-3

<sup>5</sup> Section 4.6 of 6 CCR 1014-3

*Identification and documentation of areas of contamination. This identification may be based on visual observation, law enforcement reports, proximity to chemical storage areas, waste disposal areas, or cooking areas, or based on professional judgment of the consultant; or the consultant may determine that assessment sampling is necessary to verify the presence or absence of contamination.*

Pursuant to these regulations, information obtained in the preliminary assessment and those findings enter the public domain, and are not subject to confidentiality.<sup>6</sup>

If the Industrial Hygienist performing the assessment finds *evidence* of contamination, the subject property owner is required to either remediate the subject property or demolish the subject property.<sup>7</sup>

After the subject property has been remediated, an Industrial Hygienist must again perform sampling to quantify the remaining contamination and/or verify that the remediation has reduced the contamination in the subject property to below statutory limits. The second phase of sampling is based on a different hypothesis test, wherein the Industrial Hygienist presumes the property is non-compliant and must attempt to *prove* the property is non-compliant. If, based on the totality of the circumstances, the Industrial Hygienist fails to find sufficient evidence to support the hypothesis of non-compliance, that area shall be deemed to be compliant and the Industrial Hygienist shall issue a decision statement releasing the subject property. Contrary to public misconception, the decision statement is not based exclusively on sampling results, however, if objective sampling data indicates contamination is below the cleanup levels, those data may be used as *prima facie* evidence that insufficient evidence exists to support the hypothesis that any given area is non-compliant.<sup>8</sup>

### **Initial Statement on Hypothesis Testing**

Regarding this subject property, information existed that challenged the hypothesis that contamination was absent from all portions of the subject property. Based on the totality of circumstances, including objective sampling, we were unable to support the initial hypothesis and, therefore, we accept the null hypothesis and declare all items and the primary residence and associated garage structure on the subject property as non-compliant.

### **Elements of the Preliminary Assessment**

Specific mandatory information must be presented as part of the complete documentation. This discussion, in its totality, contains the mandatory information for a preliminary assessment as follows:

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<sup>6</sup> Section 8.26 of 6 CCR 1014-3

<sup>7</sup> Colorado Revised Statutes §25-18.5-103

<sup>8</sup> No guarantee is ever made or implied that the subject property is completely free of contamination. Rather, a reasonable, standardized approach to decontamination is executed.

Form	DOCUMENT	Included
ML1- App. A	FACTs Property description field form	CH
ML2- App. A	Plumbing inspection field form (plumbing system integrity and identification of sewage disposal mechanism)	CH
ML2- App. A	Ventilation inspection	CH
ML3- App. A	FACTs Functional space inventory field form	CH
ML4- App. A	FACTs Law Enforcement documentation field form	CH
ML5- App. A	FACTs Field Observations field forms	CH
ML6- App. A	FACTs Contamination migration field form Fig. 1 Body of RE	CH
ML7- App. A	FACTs ISDS field form	CH
CD	FACTs Pre-remediation photographs	CH
ML8- App. A	FACTs Pre-remediation photograph log sheet field form	CH
Report	FACTs Drawing of Cook area(s) field form	CH
Report	FACTs Drawing of Storage area(s) field form	CH
Report	FACTs Drawing of Waste area(s) field form	CH
Report	FACTs Drawing General site field form	CH
Report	FACTs description sampling procedures, handling, and QA/QC	CH
Report	FACTs health and safety procedures used in accordance with OSHA	CH
Report	FACTs Analytical Laboratory Documentation Form	CH
ML14- App. A	FACTs Certification of procedures, results, and variations from standard practices.	CH
ML15- App. A	FACTs SOQs	CH
Appendix D/B	FACTs Analytical Laboratory Reports	CH
NA	Available Law Enforcement documents – (Law Enforcement Sensitive; interviewed LEOs but documents not included)	CH
ML18- App. A	FACTs Field Data Sheets	CH
CD	A description of the analytical methods used and laboratory QA/QC requirements.	CH

**Table 1  
Inventory of Mandatory Information**

### Chattels, Out Buildings, and Land

Pursuant to State regulations, "Property" means anything that may be the subject of ownership or possession, including, but not limited to, land, buildings, structures, vehicles and personal belongings. Further, pursuant to Colorado Revised Statutes §25-18.5-101, the definition of a "drug laboratory" includes all proximate areas that are likely to be contaminated as a result of manufacturing, processing, cooking, disposing, or storing.

### Personal Belongings

Upon our arrival, in violation of State Regulations and statutes, we found each of the buildings on the property virtually emptied of contents. Pursuant to Colorado Regulations.<sup>9</sup>

<sup>9</sup> 6 CCR 1014.3

§5.8.1 Personal property must either be decontaminated to the cleanup levels specified in section 7.0 of this regulation, or properly disposed in accordance with these regulations.

§5.8.2 Personal property that will not be disposed of must be sampled in accordance with procedures described in Appendix A of this regulation. Discrete samples must be collected from each individual item, except as provided in 5.8.3.

Pursuant to CRS §25-18.5-103:

§(3) A person who removes personal property or debris from a drug laboratory shall secure the property and debris to prevent theft or exposing another person to any toxic or hazardous chemicals until the property and debris is appropriately disposed of or cleaned according to board rules.

We found none of the mandatory records that would document that items removed from the property were secured to prevent exposing another person to any toxic or hazardous chemicals or had been tested according to board rules.

Included with this discussion is a read-only Compact Digital disc (CD). The CD contains mandatory information and photographs required by State regulation for a preliminary assessment. Also included with this assessment is all pertinent documentation associated with the assessment. This Preliminary Assessment is not complete without the CD and all associated support documents.

### **Review of Law Enforcement Documentation**

As part of the Preliminary Assessment, FACTs is required by regulation<sup>10</sup> to review available law enforcement documents pertinent to a subject property. During this project, the Larimer County Drug Task Force and the Fort Collins Police Services exhibited the highest level of professionalism and cooperated in every way with the requirements of our Preliminary Assessment.

We interviewed agents associated with the case, and discussed information contained in the Law Enforcement documents. As part of our assessment, we reviewed several of the pertinent narratives and case reports.

### **Governing Body**

We were informed by the Larimer County Building Department that the Larimer County Sheriff's Office is the "Governing Body" as defined in CRS §25-18.5-101.

We were also provided a copy of the Larimer County Building Department "Methamphetamine Cleanup Procedures" which we have found to be contrary to the language and intent of both the current State Statutes and State Regulations and which are unlikely to withstand civil challenge. We have provided a discussion of how the Larimer County Building Department "Methamphetamine Cleanup Procedures" are inconsistent with State statutes and State regulations in Appendix C.

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<sup>10</sup> 6 CCR 1014-3 (Section 4.2)



As such, based on our obligations to follow State regulations and State statutes, we have conducted our work pursuant to mandatory State requirements, the Larimer County Building Department policies, notwithstanding. A copy of this Preliminary Assessment has been forwarded to the Governing Body, by FACTs, on behalf of the property owner.

### **Visual Inspection of the Property**

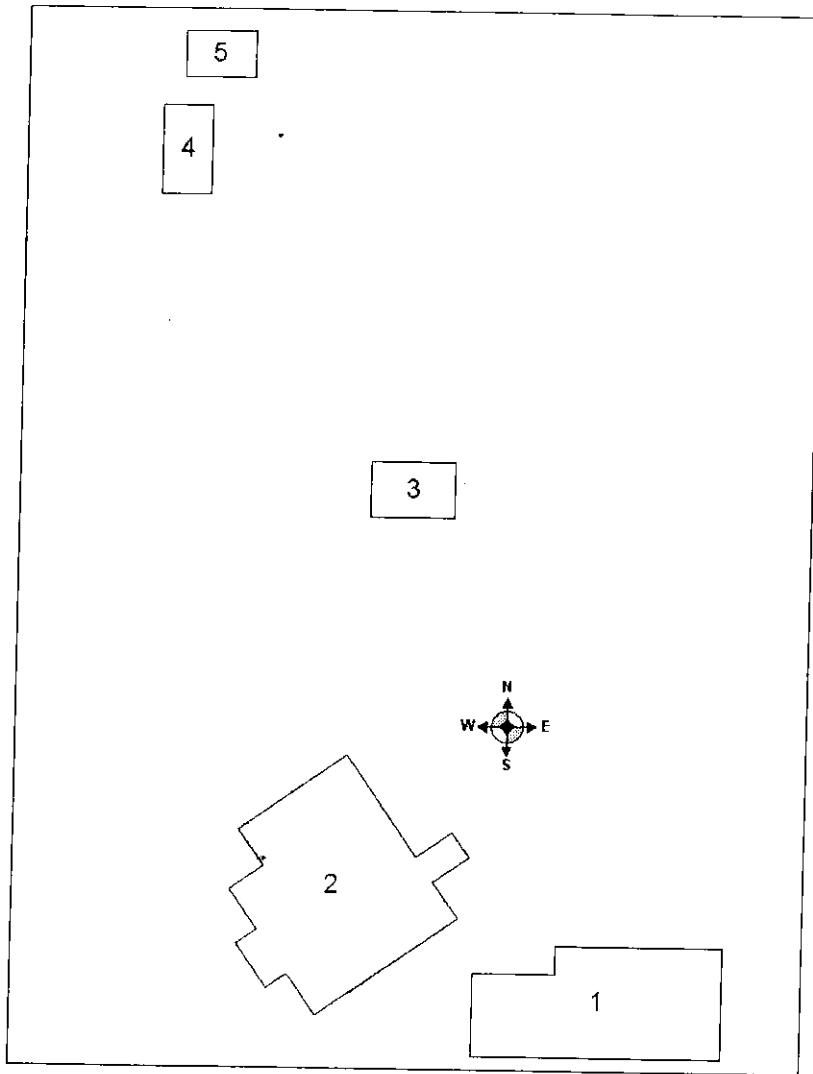
As part of our preliminary assessment, on October 6, 2006, FACTs performed a visual inspection of the subject property. Pursuant to regulatory requirements, the subject property was assigned into "functional spaces," and an indicia inventory and assessment was performed for each functional space.

In general, upon our arrival, we found the security of the subject property intact. Upon our arrival, all ground floor doors to the residence at the subject property were locked.

The property was virtually emptied of all chattels, furniture, and major appliances. The space heater and ventilation system in Building 1 was not in place.

In general, there were five structures on the property which were included in the assessment. The general layout of the structures is given in the drawing below; the spatial separation of the structures is roughly proportional and accurate.





**Figure 1**  
**Structure Locations – Not to Scale**

To protect against the introduction of contaminants into the subject property, the Industrial Hygienist and his Technician donned fresh Tyvek<sup>®</sup> suits and booties upon entering the property. All equipment brought into the subject property was staged at or near the front door of each structure entered.

### **Sample Collection**

Although State regulation does not require samples to be collected during a Preliminary Assessment, given the limited amount of visual indicators, we collected samples from the subject property in an effort to support the initial hypothesis, and if applicable pending sample results, to support the second hypothesis as well. We collected three types of samples: 1) wipe samples, 2) vacuum samples, 3) screening samples. Selected wipe samples and vacuum samples were submitted for analysis to Analytical Chemistry Inc. in Tukwila, Washington. Selected wipe samples were archived pending the results of the initial suite of samples. The screening samples were measured *in situ*.

We collected our samples in such a manner that if remediation was not required, the sampling would constitute final verification sampling. For that reason, we have included the Decision Threshold that would have been applied if the subject property did not require remediation.

## **Wipe Samples**

Wipe samples were collected in a manner consistent with State regulations. The wipe sample medium 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 Safeway™ brand USP 70% isopropyl 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 in small batches in a clean environment (FACTs Corporate Offices). The sample media were inserted into individually identified disposable polyethylene centrifuge tubes with caps. For QA/QC purposes, a field blank was randomly selected from the batch, randomly inserted in the sampling sequence and submitted along with the samples for methamphetamine analysis. To ensure the integrity of the blank, FACTs personnel were unaware, until the actual time of sampling, which specific sample would be submitted as a blank. To ensure the integrity of the blanks, laboratory personnel were not informed which specific sample was a blank. The history of the FACTs field blank media has demonstrated a media and solvent contamination level below the analytical detection limit for the method. For the purposes of the data quality objectives associated with this Preliminary Assessment, no duplicates were required, and none were collected.

Prior to the collection of each specific sample area, the Industrial Hygienist donned fresh surgical gloves, to protect against the possibility of cross contamination.

Each proposed sample area was delineated with a measured outline.

Each wipe sample was collected by methodically wiping the entire surface of the selected area with moderate pressure; first in one direction and then in the opposite direction, folding the gauze to reveal fresh material as necessary. Each sample was returned to its centrifuge tube and capped with a screw-cap.

## **Vacuum Samples**

The vacuum sample was collected in accordance with standard industrial hygiene microvacuum sampling procedures.<sup>11</sup> After an area had been selected and measured, a commercially available 25 mm diameter extended-cowel cassette fitted with mixed cellulose ester (MCE) membrane was attached to a commercially available personal

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<sup>11</sup> For example, see ASTM Method D 5756-02



sampling industrial hygiene pump. The pump was adjusted to draw approximately four liters of air per minute with a back pressure of approximately two inches of water column. The cassette was opened to present an "open face" and the selected area was vacuumed with the cassette. Prior to the collection of the sample, the Industrial Hygienist donned fresh surgical gloves, to protect against the possibility of cross contamination.

The cassette was sealed and secured with a strip of duct tape for shipping to the laboratory.

### **Screening Samples**

As part of our assessment of the Individual Sewer and Disposal System (ISDS), we performed screening of the soils in the area suspected of overlying the septic tank and leach field. At specific depth intervals, portions of the soils were placed into zip-lock plastic bags and placed in the sun to warm the contents. The outdoor air temperature at the time of our visit was 80°F. After approximately 15 minutes, a small hose was plumbed into the plastic bag, and an aliquot of air was drawn into an MOS hydrocarbon sensor for measurement. The reading was recorded and the samples were discarded.

### **Collection Rationale**

The samples that were collected throughout the subject property comprised of "discreet" and "composite" samples. Discreet samples are collected at single isolated locations; composite samples have been collected from more than one area, and then combined for a single analysis. The advantage to composite samples is that sampling error is reduced (more areas are sampled), and the costs for additional samples is not increased.

In the following table, the Decision Threshold is that value below which the sample result would need to be if the samples were final verification samples.

## Sample Results

Sample ID	Sample Location	Conc. µg/100 cm <sup>2</sup>	Decision Threshold µg/100 cm <sup>2</sup>	Sample Status
FM100606-1a	Garage foyer west wall	-		-
FM100606-1b	Garage foyer east wall	-		-
FM100606-1c	Garage foyer south wall	-		-
FM100606-1	Garage foyer composite	0.01	0.17	Above
FM100606-2	Top of freezer in freezer room	0.74	0.50	Below
FM100606-3a	Main garage area north wall	-		-
FM100606-3b	Main garage area east wall	-		-
FM100606-3c	Main garage area south wall	-		-
FM100606-3	Main garage area composite	BDL	0.17	Below
FM100606-4	BX	BDL	0.50	Below
FM100606-5a	Garage 1st floor northeast room S floor	-		-
FM100606-5b	Garage 1st floor northeast room N floor	-		-
FM100606-5	Garage 1st floor NE room composite	0.02	0.50	Below
FM100606-6a	Garage 2nd floor E room W ceiling	-		-
FM100606-6b	Garage 2nd floor E room E ceiling	-		-
FM100606-6	Garage 2nd floor E room ceiling composite	0.28	0.50	Below
FM100606-7	Garage 2nd floor E room closet shelf	ARCHIVED		
FM100606-8	Garage 2nd floor W room carpet	0.04	0.5	Below
FM100606-9a	2nd Floor W bedroom, S wall	-		-
FM100606-9b	2nd Floor W bedroom, W wall	-		-
FM100606-9c	2nd Floor W bedroom, N wall	-		-
FM100606-9	2nd Floor W bedroom, wall composite	ARCHIVED		
FM100606-10a	Residence, mud room on entrance door	-		-
FM100606-10b	Residence, E wall at storeroom door	-		-
FM100606-10c	Residence, S wall, central studio	-		-
FM100606-10d	Residence, Kitchen E wall	-		-
FM100606-10e	Residence, W wall above door to solarium	-		-
FM100606-10	Residence, composite	0.56	0.10	Above
FM100606-11	Residence, furnace interior	0.57	0.50	Above
FM100606-12	Structure 3, W wall, pane of glass	Pending		
FM100606-13	Structure 4, E wall, pane of glass	Pending		
FM100606-14	Structure 5, Dust from bottles	Pending		

\*BDL = Below the analytical detection limit

**Table 2**  
**Summary of Preliminary Sampling**

Overall, the samples indicate widespread contamination throughout the entire residential structure and the garage including all contents. It is a common misconception that

concentrations below the value misinterpreted as the State's regulatory threshold value (0.5 µg/100m<sup>2</sup>) necessarily indicate that the area is not contaminated. However, the regulatory threshold values are exclusively to be used as *prima fascia* evidence during final verification activities in the absence of all other information. During a Preliminary Assessment, there is no *de minimis* concentration of methamphetamine below which a statement of compliance can be made in the absence of any other information. The data quality objectives and sampling objectives and hypothesis testing are different for the Preliminary Assessments than they are for the final verification sampling.

The regulations state:

#### Pre-decontamination sampling

In pre-decontamination sampling, the question that is being asked is "Is there evidence of the presence of methamphetamine production in this area?" The assumption (hypothesis) is that the area is clean i.e. "compliant," and data will be collected to find support for the hypothesis. Data (such as samples) are collected to "prove" the area is compliant. Sampling, if it is performed, is conducted in the areas potentially containing the highest possible concentrations of contaminants. Any data that disproves the hypothesis, including police records, visual clues of production, storage, or use or documentation of drug paraphernalia being present, is considered conclusive, and leads the consultant to accept the null hypothesis and declare the area non-compliant. The strength of evidence needed to reject the hypothesis is low, and is only that which 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.

#### Decision Statement

If, *based on the totality of the circumstances*, the consultant finds that insufficient evidence exists to support the hypothesis that any given area is non-compliant, that area shall be deemed to be compliant with section 25-18.5-103 (2), C.R.S., and shall be released. If objective sampling data indicates contamination is less than the cleanup level, that data may be used as *prima facie* evidence that insufficient evidence exists to support the hypothesis that any given area is non-compliant.

The totality of evidence, including the sample results for this case, wherein every sample collected from the residence contained methamphetamine, and other indicators conclusively demonstrated the *presence* of methamphetamine in the residence and therefore the need for decontamination.

### **Quality Assurance/Quality Control**

The following section is required by regulation and is not intended to be understood by the casual reader. All abbreviations are standard laboratory use: MDL was 0.004 µg; LOQ was 0.03 µg; MBX <MDL; LCS 0.100 µg (recovery =103%); Matrix spike 0.020 µg (recovery 0.019 µg, 95%); Matrix spike Dup 0.020 µg; (recovery 0.018 µg, 90%); Surrogate recovery (all samples): High 111% (Sample 10), Low 99% (Sample 3); FACTs reagents: IPA lot #A0503 <MDL for n=5; Gauze lot G0603 <MDL for n=2.

The QA/QC indicate the data met the data quality objectives, and the results do not appear to be biased.



## Sample Locations

In the figures that follow, the sample locations have been presented. The drawings are stylized and not to scale.

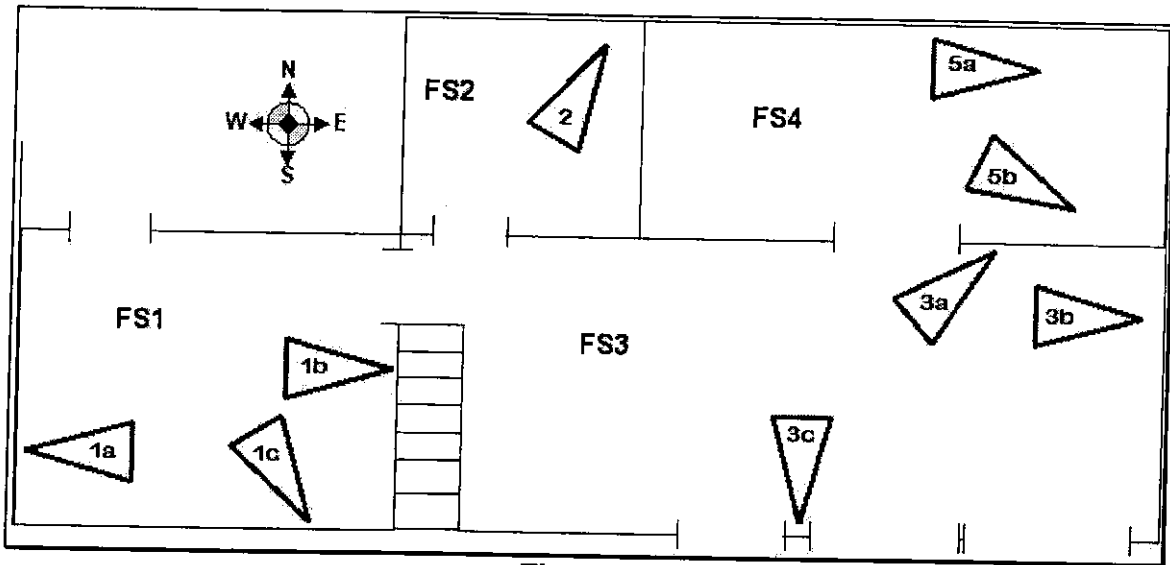


Figure 2  
Sample Locations Building 1 First Floor - Not to Scale

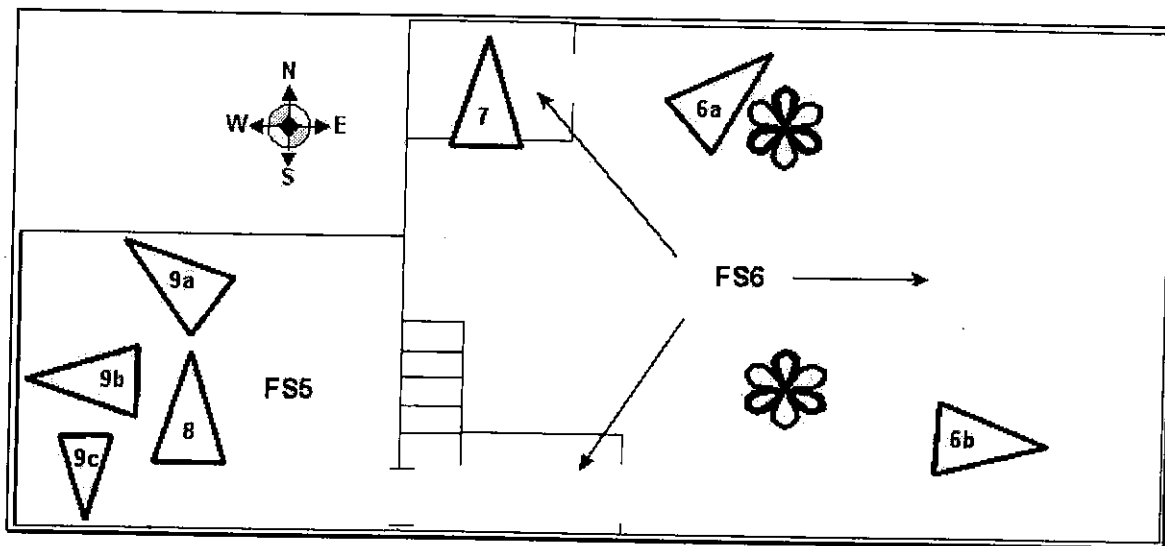
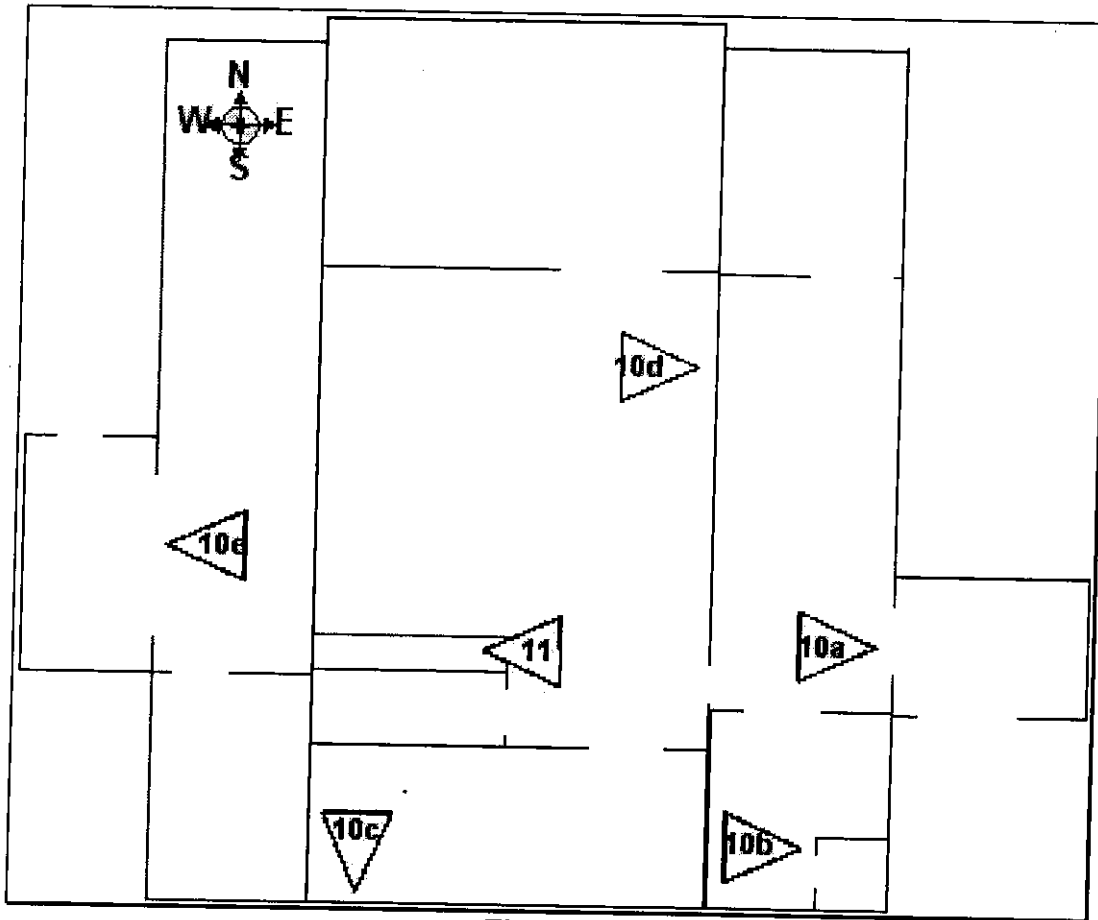
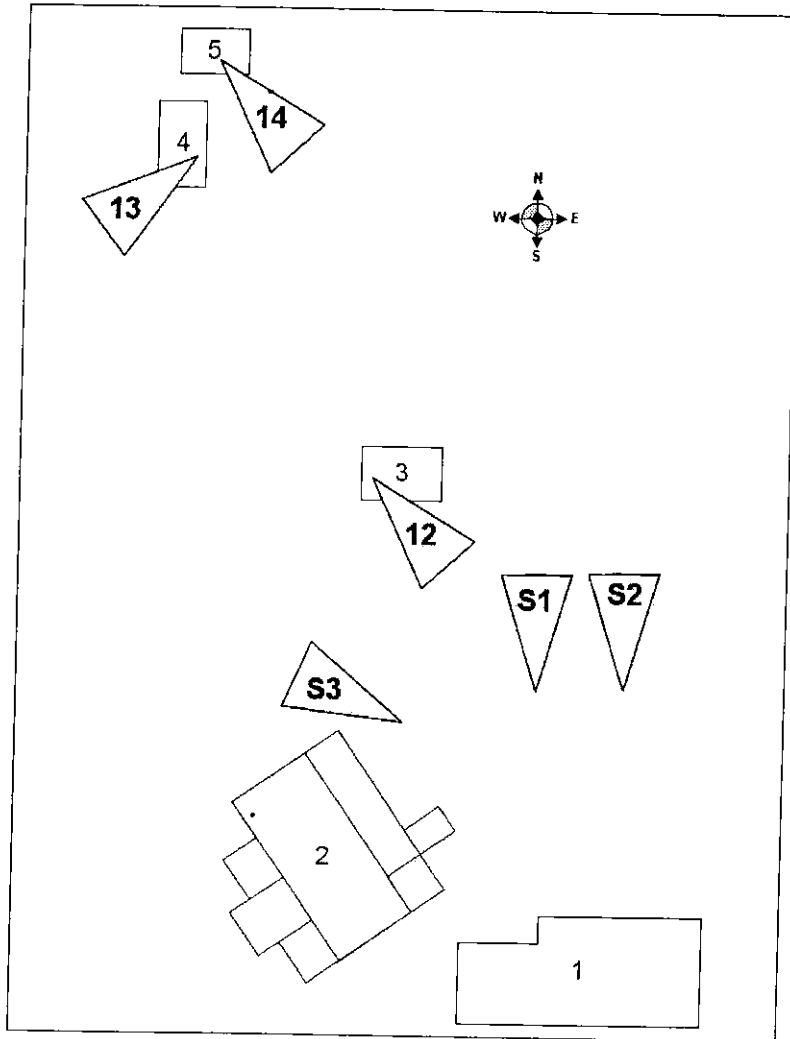


Figure 3  
Sample Locations Building 1 Second Floor - Not to Scale



**Figure 4**  
**Sample Locations Building 2 - Not to Scale**

In the above diagrams, the designations "FS1," "FS2," "FS3," etc. designate "Functional Space 1," "Functional Space 2," and so forth. Functional spaces are discussed later in this document.



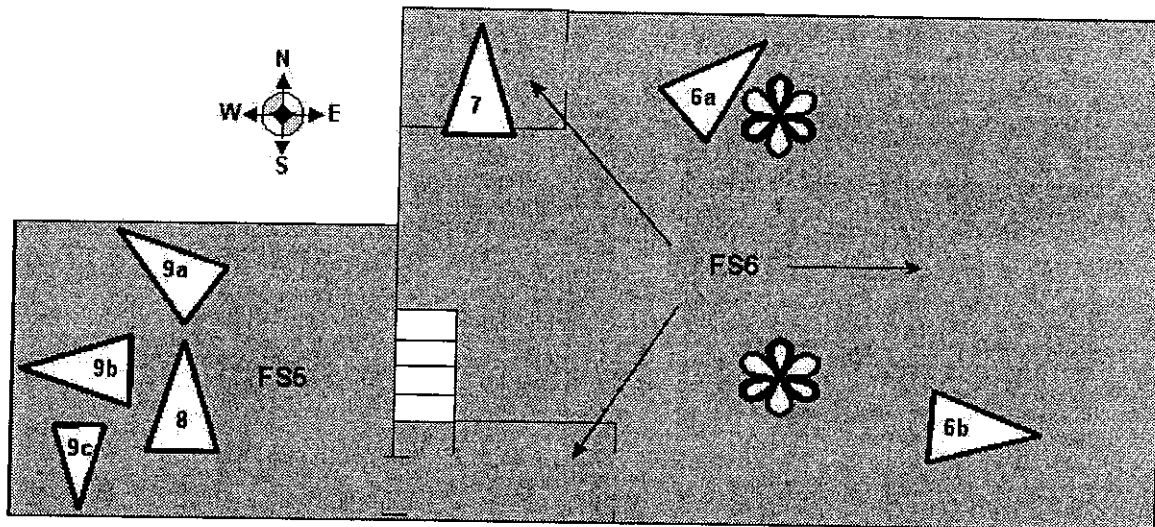
**Figure 5**  
**Sample Locations Exterior and Out Buildings - Not to Scale**

In the above diagram, the samples designated as S1, S2 and S3 represent the soil screening samples from the septic tank/leach field exploration holes.

### **Identification of Cook/Storage Areas**

Based on the best information from Law Enforcement personnel associated with this subject property, potential cook and storage areas appear to have been limited to the garage residential area. However, based on our sampling, processing and/or storage of methamphetamine may have occurred throughout the entire residence.





**Figure 6**  
**Drawing of Potential Cook/Storage Locations - Not to Scale**

## FUNCTIONAL SPACE SUMMARY

The following Functional Spaces have been identified and are addressed below:

Structure	Functional Space	Description of Functional Space
1	1	First floor entry foyer
1	2	First floor freezer and storage room
1	3	First floor main parking garage area
1	4	First floor northern storage room
1	5	Second floor brown carpet living area
1	6	Second floor east living area and closet
1	7	Attic
2	1	Mud room and east living room
2	2	Northeast bedroom
2	3	Southeast bathroom and laundry
2	4	North end, central studio and bathroom
2	5	Kitchen and dining room
2	6	North bedroom
2	7	West living room
2	8	Solarium
2	9	Southwest bedroom
2	10	Crawlspace
2	11	Attic
3	1	Nearest shed
4	1	Chicken coop
5	1	North building

**Table 3**  
**Functional Space Summary**

## **Structure Number 1- Garage - Studio**

### **Functional Space 1: Entry Foyer**

Functional Space 1 was delineated by the walls of the entry foyer. A wipe composite sample from three of the walls, conclusively demonstrated the *presence* of methamphetamine.

### **Functional Space 2: Freezer Room**

This functional space was delineated by the walls that describe the concrete floor room. A wipe sample collected from the functional space indicated the *presence* of methamphetamine.

### **Functional Space 3: Garage**

The Garage was defined as that term is commonly used. We collected a three part wipe composite sample from the garage walls. The results of that composite sample conclusively confirmed the presence of methamphetamine in this area.

### **Functional Space 4: Northern Storage Room**

We collected a two part wipe composite sample from the concrete floor of this room. The results of that composite sample conclusively confirmed the presence of methamphetamine in this area.

### **Functional Space 5: Bed Room**

This room is the western most upstairs room delineated by the walls and by the brown carpet found in the room.

We collected a vacuum sample from the carpet and we collected a three part composite sample from the walls of the bedroom. The results of the samples conclusively confirmed the presence of methamphetamine in this area.

### **Functional Space 6: Upstairs East Room**

At the entry to this room was a stack of cinderblocks. Several of the cinderblocks contained red staining consistent with iodine stains. Additionally, above the entry door to this room, we observed a red stain on the wall which was also consistent with iodine.

We collected a two-part composite of the ceiling of the room, and we also collected a single discreet sample from the closet. The results of those samples conclusively confirmed the presence of methamphetamine in this area.

### **Functional Space 7: Attic**

The attic is defined as that term is commonly known. Visual assessment indicated that although the attic was significantly disturbed, there was no indication of storage or use, vis-à-vis methamphetamine activity. We do not believe that the methamphetamine which

is assumed to be present in the attic raises to the standard of "contaminant" as defined by State regulation, and therefore, we have excluded Functional Space 7 from the decontamination process.

## **Structure 2 - Residence**

Pursuant to the information obtained from the Larimer County Drug Task Force, there was virtually no indication that this structure was involved in methamphetamine related activities.

However, pursuant to CRS §25-18.5-101 *Definitions* (2) "Drug laboratory" means

*"...the areas where controlled substances ... and all proximate areas that are likely to be contaminated as a result of such manufacturing, processing, cooking, disposing, or storing."*

And 6 CCR 1014-3 which states:

*§ 4.6 Identification and documentation of areas of contamination. This identification may be based on visual observation, law enforcement reports, proximity to chemical storage areas, waste disposal areas, or cooking areas...*

Finally, State Statute CRS §16-13-303 says:

*(1) Every building or part of a building including the ground upon which it is situate and all fixtures and contents thereof, every vehicle, and any real property shall be deemed a class 1 public nuisance when: (c) (I) Used for unlawful manufacture, cultivation, growth, production, processing, sale, or distribution or for storage or possession for any unlawful manufacture, sale, or distribution of any controlled substance, or any other drug the possession of which is an offense under the laws of this state, or any imitation controlled substance, ...*

Therefore, based on these requirements, we included the proximal buildings upon the same real property in our scope of sampling.

However, in light of the fact that there was no information to suggest the structure was used for any drug related activities, we collected a single five-part composite of the structure, and a single discreet sample of the furnace.

These samples were conclusive for the presence of methamphetamine and indicated the potential for widespread methamphetamine contamination. Originally, based on the best information available, the entire structure was treated as a single functional space. However, considering the results of the samples, final verification sampling should segregate the property into the following functional spaces:

- 1) Mud room
- 2) East bathroom
- 3) East living room



- 4) Northeast bedroom
- 5) Kitchen and dining room
- 6) North central bedroom
- 7) South central studio
- 8) West living room
- 9) Solarium
- 10) Southwest bedroom

Although not a functional space *per se*, the sample collected from the ventilation system, indicated that contamination in that system is high.

The industrial hygiene and medical communities now know that the mere use of methamphetamine in a home results in elevated exposures to the occupants via airborne migration. When methamphetamine is smoked, between 80%<sup>12</sup> and half<sup>13</sup> of the substance is released from the user's pipe. Of that material which is inhaled, between 33%<sup>14</sup> and 10%<sup>15</sup> of the nominal dose is not absorbed into the body (leaving the remainder airborne). Recent work conducted by Industrial Hygienists at the National Jewish Hospital<sup>16</sup> in Denver, Colorado, indicate that a single use of methamphetamine, by smoking, would result in an average residential area ambient airborne concentration of methamphetamine ranging from 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to over 130  $\mu\text{g}/\text{m}^3$ . These authors found that smoking methamphetamine just once in the residence can result in surfaces being contaminated with methamphetamine. The authors concluded: "If methamphetamine has been smoked in a residence, it is likely that children

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<sup>12</sup> Cook CE, Pyrolytic Characteristics, Pharmacokinetics, and Bioavailability of Smoked Heroin, Cocaine, Phencyclidine, and Methamphetamine (From: Methamphetamine Abuse: Epidemiologic Issues and Implications Research Monograph 115, 1991, U.S. Department Of Health And Human Services Public Health Service Alcohol, Drug Abuse, and Mental Health Administration National Institute on Drug Abuse)

<sup>13</sup> Cook CE, Jeffcoat AR, Hill JM, et al. Pharmacokinetics of Methamphetamine Self-Administered to Human Subjects by Smoking S-(+)-Methamphetamine Hydrochloride. Drug Metabolism and Disposition Vol. 21 No 4, 1993 as referenced by Martyny JW, Arbuckle SL, McCammon CS, Erb N, Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)

<sup>14</sup> Harris DS, Boxenbaum H, Everhart ET, Sequeira G, et al, The bioavailability of intranasal and smoked methamphetamine, Pharmacokinetics and Drug Disposition, 2003;74:475-486.)

<sup>15</sup> Cook CE, Jeffcoat AR, Hill JM, Pugh DE, et al Pharmacokinetics of methamphetamine self-administered to human subjects by smoking S-(+)-methamphetamine hydrochloride Drug Metabolism and Disposition, Vol 21, No. 4, pp. 717-723, 07/01/1993

<sup>16</sup> Martyny JW, Arbuckle SL, McCammon CS, Erb N, Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)



present in that structure will be exposed to airborne methamphetamine during the "smoke" and to surface methamphetamine after the 'smoke.'<sup>17</sup>

Since it is the purpose of the ventilation system to move air throughout the structure, and the furnace (including ductwork) is conclusively contaminated, we conclude the furnace may be a source of continued contamination until appropriately addressed. The results of the furnace sample alone would lead a reasonable person, trained in aspects of meth laboratories, to conclude the *presence* of widespread methamphetamine contamination throughout the entire occupied space, all other sample results notwithstanding.

### ***Individual Sewer and Disposal System***

Pursuant to 6-CCR-1014-3 §4.11, the ISDS must be included in the Preliminary Assessment and appropriately evaluated.

The assessment of the ISDS was complicated by two factors:

- 1) Official records were unclear and conflicting,
- 2) Location of the ISDS was not obvious.

### **Official ISDS Records**

Two official records exist regarding the sewer system:

- 1) "Application and Permit for ISDS" issued by the Larimer County Health Department on or about September 23, 1982,
- 2) Larimer County Assessor Property Information.

The first document, a copy of the Application, is included as Appendix D of this Preliminary Assessment. This document indicates the presence of an ISDS.

The second document, from the Assessor's Office, indicates that the property is not an ISDS but rather is on City water and City Sewer.

The application includes a drawing of the supposed location of the septic tank and the leach field. The drawing failed to include a permanent landmark as a reference point, and instead, included the location of a mobile home as a reference point. Mobile homes by definition are not stationary, and the official application indicates that the mobile home was no longer in place approximately one month after the date of the application.

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<sup>17</sup> Martyny JW, Arbuckle SL, McCammon CS, Erb N, Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)

## Location of ISDS

We used standard current aerial photography to attempt to locate the ISDS. The aerial photography did not provide conclusive information on the location of the ISDS. We did not refer to historical aerial photography which may provide additional information.

We also noted that the residential structure appears to be a mobile home around which additions have been made. In the absence of any other reliable information, we concluded that the central portion of the existing residence was the original mobile home on the property and was the reference point for the drawing of the location of the ISDS.

Based on the best information available, we made three exploration digs on the property in the areas most likely to contain the ISDS.

At each of the digs, we screened the soils of the excavation pits for total hydrocarbons.

At no time did we conclusively identify the location of the supposed ISDS, and at no time did we find any indications of hydrocarbon concentrations that would suggest contaminated soils, OR a contaminated ISDS.

## CONCLUSION

Based on the totality of the circumstances, including our subjective observations and objective data from sampling, we find that there is insufficient evidence to support the preliminary hypothesis and we accept the null hypothesis and conclude that widespread and significant methamphetamine presence exists throughout the subject property including all personal items contained therein; the garage and all items contained therein.

The archived samples of the out-buildings have been submitted for analysis to determine their inclusion or exclusion in remedial actions. We will issue a supplemental letter following the receipt of those sample results.

## RECOMMENDATIONS

Based on our observations and laboratory results, we recommend the following:

- 1) A licensed contractor who is trained and experienced in methlab decontamination, as required by State regulations, should be retained for the decontamination work. All work performed at the residence should be conducted by an experienced contractor whose employees are documented to have been properly trained in accordance with 29 CFR §1910.120 and Colorado Revised Statute §25-18.5-104; *Entry into illegal drug laboratories.*
- 2) All small remaining personal items and debris in the structure should be removed and discarded as methamphetamine contaminated wastes pursuant to 6 CCR 1014-3, §5.8.1.

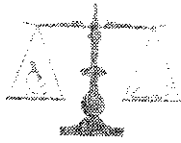


- 3) Following the removal of all personal items, all surfaces in the entire interior space, including the garage, should be thoroughly wiped down to remove residual contamination. Surfaces included in the decontamination should include, but are not limited to, ceiling fan blades, cabinet interiors, interior of refrigerator, and all accessible surfaces.
- 4) The carpeting in the subject property may be adequately decontaminated by standard steam cleaning; alternatively the carpet could be removed and discarded. If the carpet is permitted to remain, the carpet should be sampled during the final verification sampling.
- 5) The ventilation system must, at a minimum, be decontaminated pursuant to Appendix C of the State Regulations, 6-CCR-1014-3. Based on our experience, it is difficult to properly clean furnaces and duct interiors to concentrations below the State's statutory limits. As such, it may be more economically feasible to remove and replace the furnace and all associated duct-work.
- 6) We recommend the decontamination process be conducted in Level C PPE ensembles with a minimum of half-face APRs or PAPRs. We recommend that a decontamination corridor with showers be established at the garage driveway for access into the primary residence.
- 7) All remediation work performed at the residence should be conducted under written contract with a reputable remediation company qualified to perform the work.
- 8) All work performed at the residence should be conducted in accordance with all other State regulations.
- 9) All remediation work should be presumed to be pursuant to 29 CFR §1910.120 unless otherwise indicated.
- 10) The contractor *should* be contractually obligated to perform personnel air monitoring for methamphetamine for at least one full shift employee per day to allow for support of proper PPE selection.
- 11) The contractor *should* be contractually obligated to include the personnel air monitoring data in their final documentation.
- 12) Any contractors (and their subcontractors) should be contractually obligated to decontaminate the subject property to below the statutory limits. Any recleaning required by a contractor (or their subcontractor) pursuant to a failed final assessment should be contractually obligated to be performed at the expense of the contractor.

- 13) Contractors should be contractually obligated to cover industrial hygiene costs of return visits and sample expenses as a result of failed final clearance(s).
- 14) State regulation prohibits painting or otherwise encapsulating surfaces prior to final clearance sampling.
- 15) Following the decontamination process, prior to the final clearance sampling by the Industrial Hygienist, the remediation contractor/subcontractor should be contractually obligated to collect a minimum of three QA/QC wipe samples from the subject property, as part of their own QA program, and submit those samples for methamphetamine analysis. The contractor should be contractually obligated to provide their wipe sampling data (including location of sample, area of sample, and analysis results), to the consulting Industrial Hygienist for review prior to final clearance sampling.
- 16) If the three contractor QA/QC samples suggest that contamination in the subject property has been sufficiently reduced, the Industrial Hygienist should perform final clearance sampling according to 6-CCR 1014-3.
- 17) All personal property and chattels formerly associated with the subject property should be located, and tested pursuant to State regulations.
- 18) In the event that contaminated chattels were found to have been relocated off-site, all locations wherein the personal property was relocated should be tested for methamphetamine contamination.
- 19) This Preliminary Assessment must be submitted to the Larimer County Sheriff's Office which is the identified Governing Body for this subject property.

Enclosures: One CD; 72 Page data package, and Appendices





**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

## **APPENDIX A:**

### **SUPPORTING DOCUMENTS**

<b>Form</b>	<b>DOCUMENT</b>
ML1	FACTs Property description field form
ML2	Plumbing inspection field form (plumbing system integrity and identification of sewage disposal mechanism)
ML2	Ventilation inspection
ML3	FACTs Functional space inventory field form
ML4	FACTs Law Enforcement documentation field form
ML5	FACTs Field observations field forms
ML6	FACTs Contamination migration field form
ML7	FACTs ISDS field form
ML8	FACTs Pre-remediation photograph log sheet field form
ML14	FACTs Certification of procedures, results, and variations from standard practices. (Signature page)
ML15	FACTs SOQs
ML 17	FACTs Field Data Sheets