



**NMS Labs**

**CONFIDENTIAL**

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Robert A. Middleberg, PhD, DABFT, DABCC-TC, Laboratory Director

**Toxicology Report**

**Report Issued** 09/03/2013 12:01

**Patient Name** GREEN, ANTHONY  
**Patient ID** RMFS 13-152  
**Chain** 11635269  
**Age** Not Given  
**Gender** Male  
**Workorder** 13206602

**To: 10446**  
Rocky Mountain Forensic Services PLLC  
Attn: Robert Kurtzman, D.O.  
P.O. Box 190  
Loma, CO 81524

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**Positive Findings:**

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>Matrix Source</u>
Ethanol	53	mg/dL	Peripheral Blood
Blood Alcohol Concentration (BAC)	0.053	g/100 mL	Peripheral Blood
Naloxone	Positive	ng/mL	Peripheral Blood
Delta-9 THC	2.6	ng/mL	Peripheral Blood
Delta-9 Carboxy THC	8.2	ng/mL	Peripheral Blood
Amphetamine	85	ng/mL	Peripheral Blood
Methamphetamine	1900	ng/mL	Peripheral Blood

See Detailed Findings section for additional information

**Testing Requested:**

<u>Analysis Code</u>	<u>Description</u>
8052B	Postmortem Toxicology - Expanded, Blood (Forensic)

**Specimens Received:**

<u>ID</u>	<u>Tube/Container</u>	<u>Volume/ Mass</u>	<u>Collection Date/Time</u>	<u>Matrix Source</u>	<u>Miscellaneous Information</u>
001	Gray Top Tube	9 mL	08/22/2013 01:30	Peripheral Blood	
002	Gray Top Tube	9 mL	08/22/2013 01:30	Peripheral Blood	
003	Red Top Tube	3.85 mL	08/22/2013 01:30	Vitreous Fluid	
004	Clear Plastic Container	20 mL	08/22/2013 01:30	Urine	

All sample volumes/weights are approximations.

Specimens received on 08/23/2013.

**Detailed Findings:**

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	53	mg/dL	10	001 - Peripheral Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.053	g/100 mL	0.010	001 - Peripheral Blood	Headspace GC
Naloxone	Positive	ng/mL	1.0	001 - Peripheral Blood	LC/TOF-MS
Delta-9 THC	2.6	ng/mL	1.0	001 - Peripheral Blood	GC-GC-GC/MS
Delta-9 Carboxy THC	8.2	ng/mL	5.0	001 - Peripheral Blood	GC-GC-GC/MS
Ethanol	Confirmed	mg/dL	10	001 - Peripheral Blood	Headspace GC
Amphetamine	85	ng/mL	5.0	001 - Peripheral Blood	LC-MS/MS
Methamphetamine	1900	ng/mL	50	001 - Peripheral Blood	LC-MS/MS

**Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.**

**Reference Comments:**

1. Amphetamine (Benzphetamine Metabolite) - Peripheral Blood:

Amphetamine (Adderall, Dexedrine) is a Schedule II phenethylamine CNS-stimulant. It is used therapeutically in the treatment of narcolepsy and obesity and also in the treatment of hyperactivity in children. Amphetamine has a high potential for abuse. When used in therapy, initial doses should be small and increased gradually. In the treatment of narcolepsy, amphetamine is administered in daily divided doses of 5 to 60 mg. For obesity and children with attention deficits, usual dosage is 5 or 10 mg daily.

Following a single oral dose of 10 mg amphetamine sulfate, a reported peak blood concentration of 40 ng/mL was reached at 2 hr. Following a single 30 mg dose to adults, an average peak plasma level of 100 ng/mL was reported at 2.5 hr. A steady-state blood level of 2000 - 3000 ng/mL was reported in an addict who consumed approximately 1000 mg daily.

Overdose with amphetamine can produce restlessness, hyperthermia, convulsions, hallucinations, respiratory and/or cardiac failure. Reported blood concentrations in amphetamine-related fatalities ranged from 500 - 41000 ng/mL (mean, 9000 ng/mL). Amphetamine is also a metabolite of methamphetamine, benzphetamine and selegiline.

2. Delta-9 Carboxy THC (Inactive Metabolite) - Peripheral Blood:

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users. THCC is usually not detectable after passive inhalation.

3. Delta-9 THC (Active Ingredient of Marijuana) - Peripheral Blood:

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. It rapidly leaves the blood, even during smoking, falling to below detectable levels within several hours. THC concentrations in blood are usually about one-half that of serum/plasma concentrations. The active metabolite, 11-hydroxy-THC, may also fall below detectable levels shortly after inhalation. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users.

**Reference Comments:**

Reported usual peak THC concentrations in serum after smoking 1.75% or 3.55% THC marijuana cigarettes are 50 - 270 ng/mL after beginning of smoking, decreasing to less than 5 ng/mL by 2 hrs. Corresponding delta-9-carboxy-THC concentrations range from 10 - 101 ng/mL about 32 to 240 minutes after the beginning of smoking and decline slowly. Passive inhalation of marijuana smoke has been reported to produce blood THC concentrations up to 2 ng/mL. Delta-9-carboxy THC concentrations in blood may not be present following passive inhalation of marijuana smoke.

4. Ethanol (Ethyl Alcohol) - Peripheral Blood:

Ethyl alcohol (ethanol, drinking alcohol) is a central nervous system depressant and can cause effects such as impaired judgment, reduced alertness and impaired muscular coordination. Ethanol can also be a product of decomposition or degradation of biological samples. The blood alcohol concentrations (BAC) can be expressed as a whole number with the units of mg/dL or as a decimal number with units of g/100 mL which is equivalent to % w/v. For example, a BAC of 85 mg/dL equals 0.085 g/100 mL or 0.085% w/v of ethanol.

5. Methamphetamine (Benzphetamine Metabolite) - Peripheral Blood:

d-methamphetamine is a DEA schedule II stimulant drug capable of causing hallucinations, aggressive behavior and irrational reactions. Chemically, there are two forms (isomers) of methamphetamine: l- and d-methamphetamine. The l-isomer is used in non-prescription inhalers as a decongestant and has weak CNS-stimulatory activity. The d-isomer has been used therapeutically as an anorexigenic agent in the treatment of obesity and has potent CNS-, cardiac- and circulatory-stimulatory activity. Amphetamine and norephedrine (phenylpropanolamine) are metabolites of methamphetamine. d-methamphetamine is an abused substance because of its stimulatory effects and is also addictive.

A peak blood concentration of methamphetamine of 20 ng/mL was reported at 2.5 hr after an oral dosage of 12.5 mg. Blood levels of 200 - 600 ng/mL have been reported in methamphetamine abusers who exhibited violent and irrational behavior. High doses of methamphetamine can also elicit restlessness, confusion, hallucinations, circulatory collapse and convulsions.

\*In this case, the level of methamphetamine determined has not been differentiated according to its isomeric forms. Differentiation of the isomers of methamphetamine is available upon request.

6. Naloxone - Peripheral Blood:

Naloxone is a narcotic antagonist used to counter the central nervous system depression effects of opioids, including respiratory depression. It is also used for the diagnosis of suspected acute opioid overdose. Naloxone is available as a 0.4 mg/mL solution of the hydrochloride for parenteral injection.

Naloxone is also available in combination with buprenorphine (Suboxone®) for the treatment of opioid dependence. This combination is available in tablets of 2 mg buprenorphine with 0.5 mg naloxone or 8 mg buprenorphine with 2 mg of naloxone for sublingual administration.

The reported qualitative result for this substance was based upon a single analysis only. If confirmation testing is required please contact the laboratory.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded one (1) year from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 13206602 was electronically signed on 09/03/2013 11:42 by:



Susan Crookham,  
Certifying Scientist

**Analysis Summary and Reporting Limits:**

Acode 50013B - Cannabinoids Confirmation, Blood (Forensic) - Peripheral Blood



**Analysis Summary and Reporting Limits:**

-Analysis by Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
11-Hydroxy Delta-9 THC	5.0 ng/mL	Delta-9 THC	1.0 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Acode 52250B - Alcohols and Acetone Confirmation, Blood (Forensic) - Peripheral Blood

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Acode 52409B - Amphetamines Confirmation, Blood (Forensic) - Peripheral Blood

-Analysis by High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Amphetamine	5.0 ng/mL	Phendimetrazine	10 ng/mL
Ephedrine	5.0 ng/mL	Phenmetrazine	5.0 ng/mL
MDA	5.0 ng/mL	Phentermine	10 ng/mL
MDEA	10 ng/mL	Phenylpropanolamine	5.0 ng/mL
Methamphetamine	50 ng/mL	Pseudoephedrine	5.0 ng/mL
Norpseudoephedrine	5.0 ng/mL		

Acode 8052B - Postmortem Toxicology - Expanded, Blood (Forensic) - Peripheral Blood

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Barbiturates	0.040 mcg/mL	Salicylates	120 mcg/mL
Cannabinoids	10 ng/mL		

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

-Analysis by High Performance Liquid Chromatography/Time of Flight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of compound classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified compound class are included. Some specific analytes outside these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs.

Amphetamines, Anticonvulsants, Antidepressants, Antihistamines, Antipsychotic Agents, Benzodiazepines, CNS Stimulants, Cocaine and Metabolites, Hallucinogens, Hypnotics, Hypoglycemics, Muscle Relaxants, Non Steroidal Anti-Inflammatory Agents, Opiates and Opioids.