NMS LABS

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CONFIDENTIAL

Toxicology Report

Report Issued 07/01/2019 17:05

To: **10750**
St. Joseph County Coroner
Attn: Mike McGann
227 W. Jefferson Blvd. Rm 424
South Bend, IN 46601

Patient Name	LOGAN, ERIC
Patient ID	A19-340
Chain	19182716
Age 53 Y	**DOB** 12/26/1965
Gender	Male
Workorder	19182716

Positive Findings:

Compound	Result	Units	Matrix Source
Ethanol	**143**	**mg/dL**	**001 - Blood**
Blood Alcohol Concentration (BAC)	**0.143**	**g/100 mL**	**001 - Blood**
11-Hydroxy Delta-9 THC	**1.0**	**ng/mL**	**001 - Blood**
Delta-9 Carboxy THC	**36**	**ng/mL**	**001 - Blood**
Delta-9 THC	**3.4**	**ng/mL**	**001 - Blood**
Ethanol	**86**	**mg/dL**	**006 - Vitreous Fluid**
Cocaine / Metabolites	**Presump Pos**	**ng/mL**	**007 - Urine**
Cannabinoids	**Presump Pos**	**ng/mL**	**007 - Urine**

See Detailed Findings section for additional information

Testing Requested:

Analysis Code	Description
8050U	Postmortem, Urine Screen Add-on (6-MAM Quantification only)
0170FL	Alcohol Panel, Fluid
8052B	Postmortem, Expanded, Blood (Forensic)

Specimens Received:

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Miscellaneous Information
001	Lavender Vial	1.75 mL	Not Given	Blood	DATE ON SAMPLE 16JUN19
002	Pink Vial	2 mL	Not Given	Blood	DATE ON SAMPLE 16JUN19
003	White Vial	1.5 mL	Not Given	Blood	DATE ON SAMPLE 16JUN19
004	White Vial	0 mL	Not Given	Blood	DATE ON SAMPLE 16JUN19
005	Clear Vial	0 mL	Not Given	Blood	DATE ON SAMPLE 16JUN19
006	Red Top Tube	3.75 mL	06/17/2019	Vitreous Fluid	
007	White Plastic Container	55 mL	06/17/2019	Urine	

All sample volumes/weights are approximations.

Specimens received on 06/20/2019.

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	143	mg/dL	10	001 - Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.143	g/100 mL	0.010	001 - Blood	Headspace GC
11-Hydroxy Delta-9 THC	1.0	ng/mL	1.0	001 - Blood	LC-MS/MS
Delta-9 Carboxy THC	36	ng/mL	5.0	001 - Blood	LC-MS/MS
Delta-9 THC	3.4	ng/mL	0.50	001 - Blood	LC-MS/MS
Ethanol	Confirmed	mg/dL	10	001 - Blood	Headspace GC
Ethanol	86	mg/dL	10	006 - Vitreous Fluid	Headspace GC
Cocaine / Metabolites	Presump Pos	ng/mL	150	007 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Cannabinoids	Presump Pos	ng/mL	50	007 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					

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. 11-Hydroxy Delta-9 THC (Active Metabolite) - Blood:

   11-Hydroxy Delta-9 THC is an active intermediate metabolite of tetrahydrocannabinol (THC) the active component of marijuana. Usual peak levels: Less than 10% of THC levels after smoking.

2. Cannabinoids - Urine:

   Cannabinoids are chemical compounds derived from the plant Cannabis sativa (marijuana), including active components, chemical congeners and metabolites. Delta-9-Tetrahydrocannabinol (THC) is the principal active component.

   This result derives from a presumptive test, which may be subject to cross-reactivity with non-cannabinoid related compounds. A second test is necessary to confirm the presence of cannabinoid related compounds.

3. Cocaine / Metabolites - Urine:

   Cocaine is a central nervous system stimulant and drug of abuse.

   This result derives from a presumptive test, which may be subject to cross-reactivity with non-cocaine related compounds. A second test is necessary to confirm the presence of cocaine related compounds.

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

   Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC. The usual peak concentrations in serum for 1.75% or 3.55% THC marijuana cigarettes are 10 - 101 ng/mL attained 32 to 240 minutes after beginning smoking, with a slow decline thereafter. The ratio of whole blood concentration to plasma concentration is unknown for this analyte. THCC 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.

Reference Comments:

5. Delta-9 THC (Active Ingredient of Marijuana) - 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. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC 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.
   THC concentrations in blood are usually about one-half of serum/plasma concentrations. Usual peak levels in serum for 1.75% or 3.55% THC marijuana cigarettes: 50 - 270 ng/mL at 6 to 9 minutes after beginning smoking, decreasing to less than 5 ng/mL by 2 hrs.

6. Ethanol (Ethyl Alcohol) - 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.

7. Ethanol (Ethyl Alcohol) - Vitreous Fluid:

   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.

Sample Comments:

001 Physician/Pathologist Name: DR. WOLFE

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 19182716 was electronically signed on 07/01/2019 16:18 by:

Denice M Teem

Denice M. Teem, B.S., D-ABFT-FT
Certifying Scientist

Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Acode 0170FL - Alcohol Panel, Fluid - Vitreous Fluid

-Analysis by Headspace Gas Chromatography (GC) for:

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

Acode 52198B - Cannabinoids Confirmation, Blood

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

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

Analysis Summary and Reporting Limits:

Compound	Rpt. Limit	Compound	Rpt. Limit
Delta-9 THC	0.50 ng/mL		

Acode 52250B - Alcohols and Acetone Confirmation, Blood

-Analysis by Headspace Gas Chromatography (GC) for:

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

Acode 8050U - Postmortem, Urine Screen Add-on (6-MAM Quantification only)

-Analysis by Enzyme Immunoassay (EIA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamines	500 ng/mL	Fentanyl / Metabolite	2.0 ng/mL
Barbiturates	0.30 mcg/mL	Methadone / Metabolite	300 ng/mL
Benzodiazepines	50 ng/mL	Opiates	300 ng/mL
Cannabinoids	50 ng/mL	Oxycodone / Oxymorphone	100 ng/mL
Cocaine / Metabolites	150 ng/mL	Phencyclidine	25 ng/mL

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

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

Compound	Rpt. Limit	Compound	Rpt. Limit
Barbiturates	0.040 mcg/mL	Gabapentin	5.0 mcg/mL
Cannabinoids	10 ng/mL	Salicylates	120 mcg/mL

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
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, Hypnosedatives, Hypoglycemics, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.