

## CBD Topical Product Guarantee

<b>Product Name</b>	<b>CBD Double Strength Cream</b>
<b>Product Category</b>	Topicals/Cosmetics (Not for consumption)
<b>Instructions for use/Preparation</b>	Apply a small amount to the affected area. Use as needed throughout the day. Store in a cool dry place. Do not take internally. Cannabidiol use while pregnant or breastfeeding may be harmful.
<b>CBD Source</b>	CBD sourced from hemp grown under federally authorized state pilot program (e.g. Kentucky, Oregon, or Colorado's R&D program) or approved hemp program.
<b>NOTE: This product is not intended to diagnose, treat, cure or prevent any disease</b>	
<b>WARNING: The safety of this product has not been determined.</b>	
<b>Batch Information</b>	
<b>Batch ID Number</b>	20225
<b>Batch Size</b>	400 pounds
<b>Units Produced per SKU</b>	Item 54000 (2 oz): 2,677 units
<b>Manufacture date</b>	08/12/2020
<b>Expiration date</b>	08/12/2022




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 Approved by Allison Ballard / Quality Assurance Manager

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 08/31/2020

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 Date

**SAMPLE NAME: Double Strength CBD Cream 20225\_#03**

Infused, Non-Inhalable

**CULTIVATOR / MANUFACTURER**

**Business Name:**

**License Number:**

**Address:**

**DISTRIBUTOR**

**Business Name:** Shikai Products

**License Number:**

**Address:**

**SAMPLE DETAIL**

**Batch Number:** 20225

**Sample ID:** 200814R013

**Date Collected:** 08/14/2020

**Date Received:** 08/14/2020

**Batch Size:**

**Sample Size:**

**Unit Mass:** 1 Grams per Unit

**Serving Size:**



Scan QR code to verify authenticity of results.

**CANNABINOID ANALYSIS - SUMMARY**

**Total THC:** Not Detected

**Total CBD:** 9.943 mg/unit

**Sum of Cannabinoids:** 9.951 mg/unit

**Total Cannabinoids:** 9.951 mg/unit

Total THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step:  
 Total THC =  $\Delta 9\text{THC} + (\text{THCa} \cdot 0.877)$   
 Total CBD =  $\text{CBD} + (\text{CBDA} \cdot 0.877)$   
 Sum of Cannabinoids =  $\Delta 9\text{THC} + \text{THCa} + \text{CBD} + \text{CBDA} + \text{CBG} + \text{CBGa} + \text{THCV} + \text{THCVa} + \text{CBC} + \text{CBCa} + \text{CBDV} + \text{CBDVa} + \Delta 8\text{THC} + \text{CBL} + \text{CBN}$   
 Total Cannabinoids =  $(\Delta 9\text{THC} + 0.877 \cdot \text{THCa}) + (\text{CBD} + 0.877 \cdot \text{CBDA}) + (\text{CBG} + 0.877 \cdot \text{CBGa}) + (\text{THCV} + 0.877 \cdot \text{THCVa}) + (\text{CBC} + 0.877 \cdot \text{CBCa}) + (\text{CBDV} + 0.877 \cdot \text{CBDVa}) + \Delta 8\text{THC} + \text{CBL} + \text{CBN}$

**Moisture:** NT

**Density:** NT

**Viscosity:** NT

**SAFETY ANALYSIS - SUMMARY**

**$\Delta 9\text{THC}$  per Unit:** ✔ PASS

**Foreign Material:** NT

**Water Activity:** NT

**Vitamin E Acetate:** NT

**Pesticides:** ✔ PASS

**Mycotoxins:** NT

**Residual Solvents:** ✔ PASS

**Heavy Metals:** ✔ PASS

**Microbial Impurities (PCR):** ✔ PASS

**Microbial Impurities (Plating):** ND

For quality assurance purposes. Not a Pre-Harvest Hemp Lab Test Report. These results relate only to the sample included on this report. This report shall not be reproduced, except in full, without written approval of the laboratory.

**Sample Certification:** California Code of Regulations Title 16 Effect Date January 16, 2019. Authority: Section 26013, Business and Professions Code. Reference: Sections 26100, 26104 and 26110, Business and Professions Code.

**Decision Rule:** Statements of conformity (e.g. Pass/Fail) to specifications are made in this report without taking measurement uncertainty into account. Where statements of conformity are made in this report, the following decision rules are applied: PASS - Results within limits/specifications, FAIL - Results exceed limits/specifications.

**References:** limit of detection (LOD), limit of quantification (LOQ), not detected (ND), not tested (NT) too numerous to count >250 cfu/plate (TNTC), colony-forming unit (cfu)

*Lisi Johnson*  
 Lab verified by: Lisi Johnson  
 Date: 08/17/2020

*Josh Wurze*  
 Approved by: Josh Wurze, President  
 Date: 08/17/2020



## Cannabinoid Analysis

Tested by high-performance liquid chromatography with diode-array detection (HPLC-DAD).

Method: QSP - (1157) Analysis of Cannabinoids by HPLC-DAD

**TOTAL THC: Not Detected**

Total THC ( $\Delta 9$ THC+0.877\*THCa)

**TOTAL CBD: 9.943 mg/unit**

Total CBD (CBD+0.877\*CBDA)

**TOTAL CANNABINOIDS: 9.951 mg/unit**

Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) +  $\Delta 8$ THC + CBL + CBN

**TOTAL CBG: ND**

Total CBG (CBG+0.877\*CBGa)

**TOTAL THCV: ND**

Total THCV (THCV+0.877\*THCVa)

**TOTAL CBC: ND**

Total CBC (CBC+0.877\*CBCa)

**TOTAL CBDV: 0.008 mg/unit**

Total CBDV (CBDV+0.877\*CBDVa)

### CANNABINOID TEST RESULTS - 08/15/2020

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
CBD	0.004 / 0.011	±0.4763	9.943	0.9943
CBDV	0.002 / 0.007	±0.0004	0.008	0.0008
$\Delta 9$ THC	0.002 / 0.005	N/A	ND	ND
$\Delta 8$ THC	0.01 / 0.02	N/A	ND	ND
THCa	0.001 / 0.002	N/A	ND	ND
THCV	0.002 / 0.008	N/A	ND	ND
THCVa	0.002 / 0.005	N/A	ND	ND
CBDA	0.001 / 0.003	N/A	ND	ND
CBDVa	0.001 / 0.003	N/A	ND	ND
CBG	0.002 / 0.005	N/A	ND	ND
CBGa	0.002 / 0.006	N/A	ND	ND
CBL	0.003 / 0.008	N/A	ND	ND
CBN	0.001 / 0.004	N/A	ND	ND
CBC	0.003 / 0.010	N/A	ND	ND
CBCa	0.001 / 0.004	N/A	ND	ND
<b>SUM OF CANNABINOIDS</b>			<b>9.951 mg/g</b>	<b>0.9951%</b>

### Unit Mass: 1 Grams per Unit

$\Delta 9$ THC per Unit	1000.0 per-package limit	ND	PASS
Total THC per Unit		ND	
CBD per Unit		9.943 mg/unit	
Total CBD per Unit		9.943 mg/unit	
Sum of Cannabinoids per Unit		9.951 mg/unit	
Total Cannabinoids per Unit		9.951 mg/unit	

### MOISTURE TEST RESULT

Not Tested

### DENSITY TEST RESULT

Not Tested

### VISCOSITY TEST RESULT

Not Tested



 **Pesticide Analysis**

**CATEGORY 1 PESTICIDE TEST RESULTS - 08/16/2020** ✔ PASS

**CATEGORY 1 AND 2 PESTICIDES**

Pesticide and plant growth regulator analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS) or gas chromatography-mass spectrometry (GC-MS). \*GC-MS utilized where indicated.

**Method:** QSP - (1212) Analysis of Pesticides and Mycotoxins by LC-MS or QSP - (1213) Analysis of Pesticides by GC-MS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)	RESULT
Aldicarb				NT	
Carbofuran				NT	
Chlordane*				NT	
Chlorfenapyr*				NT	
<b>Chlorpyrifos</b>	0.02 / 0.06	≥ LOD	N/A	<b>ND</b>	<b>PASS</b>
Coumaphos				NT	
Daminozide				NT	
DDVP (Dichlorvos)				NT	
Dimethoate				NT	
Ethoprop(hos)				NT	
Etofenprox				NT	
Fenoxycarb				NT	
Fipronil				NT	
Imazalil				NT	
Methiocarb				NT	
Methyl parathion				NT	
Mevinphos				NT	
Paclobutrazol				NT	
Propoxur				NT	
Spiroxamine				NT	
Thiacloprid				NT	


**CATEGORY 2 PESTICIDE TEST RESULTS - 08/16/2020** ✔ PASS

<b>Abamectin</b>	0.03 / 0.10	0.3	N/A	<b>ND</b>	<b>PASS</b>
Acephate				NT	
Acequinocyl				NT	
Acetamiprid				NT	
<b>Azoxystrobin</b>	0.01 / 0.04	40	N/A	<b>ND</b>	<b>PASS</b>
<b>Bifenazate</b>	0.01 / 0.02	5	N/A	<b>ND</b>	<b>PASS</b>
<b>Bifenthrin</b>	0.01 / 0.02	0.5	N/A	<b>ND</b>	<b>PASS</b>
<b>Boscalid</b>	0.02 / 0.06	10	N/A	<b>ND</b>	<b>PASS</b>
Captan				NT	
Carbaryl				NT	
Chlorantraniliprole				NT	

Continued on next page



 **Pesticide Analysis** *Continued*

**CATEGORY 2 PESTICIDE TEST RESULTS - 08/16/2020** *continued*  **PASS**

**CATEGORY 1 AND 2 PESTICIDES**

Pesticide and plant growth regulator analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS) or gas chromatography-mass spectrometry (GC-MS). \*GC-MS utilized where indicated.

**Method:** QSP - (1212) Analysis of Pesticides and Mycotoxins by LC-MS or QSP - (1213) Analysis of Pesticides by GC-MS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)	RESULT
Clofentezine				NT	
Cyfluthrin				NT	
Cypermethrin	0.1 / 0.3	1	N/A	ND	PASS
Diazinon				NT	
Dimethomorph				NT	
Etoxazole	0.010 / 0.028	1.5	N/A	ND	PASS
Fenhexamid				NT	
Fenpyroximate				NT	
Flonicamid				NT	
Fludioxonil				NT	
Hexythiazox	0.01 / 0.04	2	N/A	ND	PASS
Imidacloprid	0.01 / 0.04	3	N/A	ND	PASS
Kresoxim-methyl				NT	
Malathion	0.02 / 0.05	5	N/A	ND	PASS
Metalaxyl				NT	
Methomyl				NT	
Myclobutanil	0.03 / 0.1	9	N/A	ND	PASS
Naled				NT	
Oxamyl				NT	
Pentachloronitrobenzene*				NT	
Permethrin	0.03 / 0.09	20	N/A	ND	PASS
Phosmet				NT	
Piperonylbutoxide	0.003 / 0.009	8	N/A	ND	PASS
Prallethrin				NT	
Propiconazole	0.01 / 0.03	20	N/A	ND	PASS
Pyrethrins				NT	
Pyridaben				NT	
Spinetoram				NT	
Spinosad				NT	
Spiromesifen	0.02 / 0.05	12	N/A	ND	PASS
Spirotetramat				NT	
Tebuconazole	0.02 / 0.07	2	N/A	ND	PASS
Thiamethoxam				NT	
Trifloxystrobin	0.01 / 0.03	30	N/A	ND	PASS



 **Residual Solvents Analysis**

**CATEGORY 1 RESIDUAL SOLVENTS TEST RESULTS - 08/17/2020**  **PASS**

**CATEGORY 1 AND 2 RESIDUAL SOLVENTS**

Residual Solvent analysis utilizing gas chromatography-mass spectrometry (GC-MS).


**Method:** QSP - (1204) Analysis of Residual Solvents by GC-MS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)	RESULT
1,2-Dichloroethane	0.05 / 0.1	1	N/A	ND	PASS
Benzene	0.03 / 0.09	1	N/A	ND	PASS
Chloroform	0.1 / 0.2	1	N/A	ND	PASS
Ethylene Oxide	0.1 / 0.4	1	N/A	ND	PASS
Methylene chloride	0.3 / 0.9	1	N/A	ND	PASS
Trichloroethylene	0.1 / 0.3	1	N/A	ND	PASS

**CATEGORY 2 RESIDUAL SOLVENTS TEST RESULTS - 08/17/2020**  **PASS**

Acetone	20 / 50	5000	N/A	ND	PASS
Acetonitrile	2 / 7	410	N/A	ND	PASS
Butane	10 / 50	5000	N/A	ND	PASS
Ethanol	20 / 50	5000	N/A	ND	PASS
Ethyl acetate	20 / 60	5000	N/A	ND	PASS
Ethyl ether	20 / 50	5000	N/A	ND	PASS
Heptane	20 / 60	5000	N/A	ND	PASS
Hexane	2 / 5	290	N/A	ND	PASS
Isopropyl Alcohol	10 / 40	5000	N/A	ND	PASS
Methanol	50 / 200	3000	N/A	ND	PASS
Pentane	20 / 50	5000	N/A	ND	PASS
Propane	10 / 20	5000	N/A	ND	PASS
Toluene	7 / 21	890	N/A	ND	PASS
Total Xylenes	50 / 160	2170	N/A	ND	PASS

 **Heavy Metals Analysis**

**HEAVY METALS TEST RESULTS - 08/16/2020**  **PASS**

Heavy metal analysis utilizing inductively coupled plasma-mass spectrometry (ICP-MS).

**Method:** QSP - (1160) Analysis of Heavy Metals by ICP-MS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)	RESULT
Cadmium	0.02 / 0.05	0.5	N/A	ND	PASS
Lead	0.04 / 0.1	0.5	N/A	ND	PASS
Arsenic	0.02 / 0.1	1.5	N/A	ND	PASS
Mercury	0.002 / 0.01	3	N/A	ND	PASS



 **Microbial Impurities Analysis**  
 PCR AND PLATING

Analysis conducted by polymerase chain reaction (PCR) and fluorescence detection of microbial impurities.

**Method:** QSP - (1221) Analysis of Microbial Impurities

**MICROBIAL IMPURITIES TEST RESULTS (PCR) - 08/17/2020**

COMPOUND	ACTION LIMIT	RESULT	RESULT
Shiga toxin-producing <i>Escherichia coli</i>		NT	
<i>Salmonella</i> spp.		NT	
<i>Aspergillus fumigatus</i>		NT	
<i>Aspergillus flavus</i>		NT	
<i>Aspergillus niger</i>		NT	
<i>Aspergillus terreus</i>		NT	

Analysis conducted by 3M™ Petrifilm™ and plate counts of microbial impurities.

**Method:** QSP - (6794) Plating with 3M™ Petrifilm™

**MICROBIAL IMPURITIES TEST RESULTS (PLATING) - 08/17/2020 ND**

COMPOUND	RESULT (cfu/g)
Aerobic Plate Count	ND
Total Yeast and Mold	ND



CERTIFICATE OF ANALYSIS:  
**CRYSTALLINE CANNABIDIOL**



**Product Name**

CC - Crystalline Cannabidiol

**Batch Number**

190004AC

**Manufacture Date**

October 1, 2019

**Expiration Date**

October 1 2021

**Botanical Source**

Industrial hemp, grown and processed in Kentucky, USA in compliance with Section 7415 of the Farm Bill and applicable Kentucky State Law and State Department of Agriculture regulations.

**Product Description**

This product is hemp derived crystalline cannabidiol, isolated through CO<sub>2</sub> extraction and crystal precipitation.

**Qualitative Analysis**

OBSERVATION	METHOD	RESULT
Foreign Matter	Gross Visual	Absent
Color	Gross Visual	White to Pale Yellow
Molds & Mildews	Gross Visual	Absent
Smell	Olfactory	Odorless to Slight Terpenoid
Product Feel	Tactile	Fine Powder

**Quantitative Analysis**

**Cannabinoid Analysis\*\***

**RESULT: PASS**

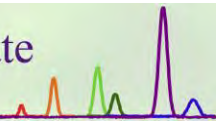
IDENTIFICATION	METHOD	RESULT
Cannabinoid	UPLC-PDA	%wt/wt
Cannabidiol (CBD)	UPLC-PDA	99.17%
Cannabidiol (CBD)	UPLC-PDA	99.17%
Cannabidiolic Acid (CBDA)	UPLC-PDA	0.00%
Cannabinol (CBN)	UPLC-PDA	0.00%
$\Delta$ -9-Tetrahydrocannabinol ( $\Delta$ -9-THC)	UPLC-PDA	0.00%
Cannabichromene (CBC)	UPLC-PDA	0.00%
Tetrahydrocannabinolic Acid (THCA)	UPLC-PDA	0.00%
Cannabigerol Acid (CBGA)	UPLC-PDA	0.00%
Cannabigerol (CBG)	UPLC-PDA	0.00%
$\Delta$ -8-Tetrahydrocannabinol ( $\Delta$ -8-THC)	UPLC-PDA	0.00%

\*\*Denotes third party analysis. Source data available upon request.

LOQ Limit of quantitation

N/D None detected above the limits of detection





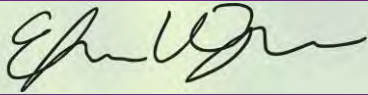
Certificate ID: **69804**  
 Client Sample ID: **190004AC**  
 Lot Number: **190004AC**  
 Matrix: **Isolates - CBD**

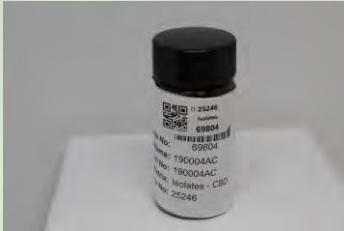
Received: **10/31/19**

Scan QR Code for authenticity



GenCanna

Authorization: Elizabeth R. Wagoner, Lab Director	Signature: 	Date: 11/11/2019
------------------------------------------------------	--------------------------------------------------------------------------------------------------	---------------------



The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01]**

Analyst: RAS

Test Date: 11/5/2019

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). Due to the unique precision and accuracy demands of assay testing for highly purified materials, samples were prepared in class-A volumetric glassware and quantitated against a single point calibration function. Five replicate injections of cannabidiol (CBD) certified reference standard are averaged to derive the calibration function and verify injection precision less than 2% RSD. For components other than CBD, the relative response factor of the identified component is used for quantitation. Relative response factors are calculated from certified reference standards. Relative percent difference (RPD) of the Laboratory Duplicate for this sample preparation batch was less than 2%. Assay values exceeding 100.00% are scientifically valid and result from the unavoidable accumulation of uncertainty at every stage of sampling and analysis.

**69804-CN**

ID	Weight %	Concentration (mg/g)			
D9-THC	ND	ND			
THCV	ND	ND			
CBD	99.17	991.69			
CBDV	0.10	0.98			
CBG	ND	ND			
CBC	ND	ND			
CBN	ND	ND			
THCA	ND	ND			
CBDA	ND	ND			
CBGA	ND	ND			
D8-THC	ND	ND			
exo-THC	ND	ND			
Total	99.27	992.67	0%	Cannabinoids (wt%)	99.2%
Max THC	ND	ND			
Max CBD	99.17	991.69			

Limit of Quantitation (LOQ) = 0.05 wt%

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LOD), which is half of LOQ.

**EA: Elemental Analysis [WI-10-13]**

Analyst: CJS

Test Date: 11/7/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**69804-EA**

Symbol	Metal	Conc. <sup>1</sup> (µg/kg)	RL (µg/kg)	Limits <sup>2</sup> (µg/kg)	Status
Al	Aluminum	1,296	50	-	
As	Arsenic	ND	50	200	PASS
Cd	Cadmium	ND	50	200	PASS
Ca	Calcium	3,981	500	-	
Cr	Chromium	ND	50	300	PASS
Co	Cobalt	ND	50	300	PASS
Cu	Copper	76	50	3,000	PASS
Fe	Iron	900	50	-	
Pb	Lead	ND	50	500	PASS
Mg	Magnesium	11,543	50	-	
Mn	Manganese	ND	50	-	
Hg	Mercury	ND	50	100	PASS
Mo	Molybdenum	ND	50	1,000	PASS
Ni	Nickel	ND	50	500	PASS
P	Phosphorus	8,047	500	-	
K	Potassium	45,090	500	-	
Se	Selenium	ND	50	-	
Ag	Silver	ND	50	700	PASS
S	Sulfur	1,244	500	-	
Sn	Tin	ND	500	6,000	PASS
Zn	Zinc	362	50	-	

1) ND = None detected to the Method Detection Limit (MDL)

2) USP recommended maximum daily limits for inhalational drug product.

**MB1: Microbiological Contaminants [WI-10-09]**

Analyst: MM

Test Date: 11/1/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**69804-MB1**

Symbol	Analysis	Results	Units	Limits*	Status
AC	Total Aerobic Bacterial Count	<100	CFU/g	100,000 CFU/g	PASS
CC	Total Coliform Bacterial Count	<100	CFU/g	1,000 CFU/g	PASS
EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	1,000 CFU/g	PASS
YM	Total Yeast & Mold	<100	CFU/g	10,000 CFU/g	PASS

Note: All recorded Microbiological tests are within the established limits.

**MB2: Pathogenic Bacterial Contaminants [WI-10-10]**

Analyst: LabAdmin

Test Date: 11/2/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**69804-MB2**

Test ID	Analysis	Results	Units	Limits*	Status
69804-ECPT	E. coli (O157)	Negative	NA	Non Detected	PASS
69804-SPT	Salmonella	Negative	NA	Non Detected	PASS

Note: All recorded pathogenic bacteria tests passed.

**MY: Mycotoxin Testing [WI-10-05]**

Analyst: AKR

Test Date: 11/7/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**69804-MY**

Test ID	Date	Results	MDL	Limits	Status*
Total Aflatoxin	11/7/2019	< MDL	2 ppb	< 20 ppb	PASS
Total Ochratoxin	11/7/2019	< MDL	3 ppb	< 20 ppb	PASS

**TP: Terpenes Profile [WI-10-27]**

*Analyst: JR*

*Test Date: 11/6/2019*

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations. All values are semiquantitative estimates based on recorded peak areas relative to terpene calibration data.

**69804-TP**

Compound	ppm	Terpene Profile	Compound	ppm	Terpene Profile	
beta-myrcene			camphene			
isopulegol			L-fenchone			
menthol			beta-pinene			
cis-nerolidol			eucalyptol			
trans-nerolidol			alpha-terpinene			
gamma-terpinene			delta-3-carene			
alpha-bisabolol			alpha-pinene			
linalool			D-limonene			
beta-caryophyllene			geraniol			
caryophyllene oxide			cis-beta-ocimene			
guaiol			alpha-ocimene			
sabinene			alpha-phellandrene			
alpha-humulene			terpinolene			
p-cymene						
	ppm 0.00	5.00	10.00	ppm 0.00	5.00	10.00

Total Terpene: <0.1 wt%

**VC: Analysis of Volatile Organic Compounds [WI-10-28]**

Analyst: JR

Test Date: 11/4/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

**69804-VC**

Compound	CAS	Amount <sup>1</sup>	Limit <sup>2</sup>	RL	Status
Propane	74-98-6	ND	1,000 ppm	100	PASS
Isobutane	75-28-5	ND	1,000 ppm	100	PASS
Butane	106-97-8	ND	1,000 ppm	100	PASS
Methanol	67-56-1	ND	3,000 ppm	100	PASS
Pentane	109-66-0	ND	5,000 ppm	100	PASS
Ethanol	64-17-5	ND	5,000 ppm	100	*
Acetone	67-64-1	ND	5,000 ppm	100	PASS
Isopropanol	67-63-0	ND	5,000 ppm	100	PASS
Acetonitrile	75-05-8	ND	410 ppm	100	PASS
Hexane	110-54-3	ND	290 ppm	100	PASS
Heptane	142-82-5	ND	5,000 ppm	100	PASS

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health for cannabis concentrates and extracts on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

(\*) For ethanol, as many formulations contain flavorings based on ethanol extracts of natural products, no status has been assigned.

**END OF REPORT**



**GenCanna Global**  
4274 Colby Rd.  
Winchester, KY 40391

**Report Number:** P193049  
**Report Date:** October 17, 2019  
**Client Project ID:**

**Client Sample ID:** 190004AC  
**PAL Sample ID:** P193049-01

**Sample Date:** 10/02/2019  
**Received Date:** 10/03/2019  
**Extraction Date:** 10/03/2019

## Certificate of Analysis

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
<b>JASBC 69(3):121-126, 2011 (GC-MS/MS)</b>									
10/08/2019	a-BHC	ND	0.20		10/08/2019	Aldrin	ND	0.20	
10/08/2019	b-BHC	ND	0.20		10/08/2019	Benfluralin	ND	0.20	
10/08/2019	Bolstar	ND	0.20		10/08/2019	Bromopropylate	ND	0.20	
10/08/2019	Captan	ND	4.0		10/08/2019	Chlordane	ND	0.20	
10/08/2019	Chlorfenapyr	ND	0.20		10/08/2019	Chloroneb	ND	0.20	
10/08/2019	Chlorothalonil	ND	0.20		10/08/2019	Chlorpropham	ND	0.20	
10/08/2019	Chlorpyrifos	ND	0.20		10/08/2019	Chlorpyrifos-methyl	ND	0.20	
10/08/2019	cis-Nonachlor	ND	0.20		10/08/2019	Cyfluthrin	ND	1.0	
10/08/2019	Cypermethrin	ND	1.0		10/08/2019	Dacthal	ND	0.20	
10/08/2019	d-BHC	ND	0.20		10/08/2019	Deltamethrin	ND	1.0	
10/08/2019	Diazinon	ND	0.20		10/08/2019	Dichlobenil	ND	0.20	
10/08/2019	Dichlorofenthion	ND	0.20		10/08/2019	Dichlorvos	ND	0.20	
10/08/2019	Diclofop-methyl	ND	0.20		10/08/2019	Dicloran	ND	1.0	
10/08/2019	Dicofol	ND	0.20		10/08/2019	Diphenamid	ND	0.20	
10/08/2019	Dithiopyr	ND	0.20		10/08/2019	Esfenvalerate	ND	0.20	
10/08/2019	Ethalfuralin	ND	0.20		10/08/2019	Ethofumesate	ND	0.20	
10/08/2019	Ethoprophos	ND	0.20		10/08/2019	Ethoxyquin	ND	0.20	
10/08/2019	Etoxazole	ND	0.20		10/08/2019	Etridiazole	ND	0.20	
10/08/2019	Fenarimol	ND	0.20		10/08/2019	Fenvalerate	ND	0.20	
10/08/2019	Fipronil	ND	0.20		10/08/2019	Fludioxonil	ND	0.20	
10/08/2019	Flutolanil	ND	0.20		10/08/2019	g-BHC	ND	0.20	
10/08/2019	Heptachlor	ND	0.20		10/08/2019	Heptachlor epoxide	ND	0.20	
10/08/2019	Hexachlorobenzene	ND	0.20		10/08/2019	Kresoxim-methyl	ND	0.20	
10/08/2019	lambda-Cyhalothrin	ND	0.57		10/08/2019	Malathion	ND	0.20	
10/08/2019	Mefenoxam	ND	0.20		10/08/2019	Metolachlor	ND	0.20	
10/08/2019	MGK-264	ND	0.20		10/08/2019	Myclobutanil	ND	0.20	
10/08/2019	o-Phenylphenol	ND	0.40		10/08/2019	Oxadiazon	ND	0.20	
10/08/2019	Oxyfluorfen	ND	0.40		10/08/2019	p,p'-DDD	ND	0.20	
10/08/2019	p,p'-DDE	ND	0.20		10/08/2019	p,p'-DDT	ND	0.20	
10/08/2019	Pacllobutrazol	ND	0.20		10/08/2019	Parathion-methyl	ND	0.20	
10/08/2019	Pendimethalin	ND	0.20		10/08/2019	Pentachlorophenyl methyl sulfide	ND	0.20	
10/08/2019	Permethrin	ND	0.40		10/08/2019	Pirimicarb	ND	0.20	
10/08/2019	Procymidone	ND	0.20		10/08/2019	Prodiamine	ND	0.40	
10/08/2019	Pronamide	ND	0.20		10/08/2019	Pyriproxyfen	ND	0.20	
10/08/2019	Quinoxifen	ND	0.20		10/08/2019	Spirodiclofen	ND	0.20	
10/08/2019	Tetraconazole	ND	0.20		10/08/2019	trans-Nonachlor	ND	0.20	



PACIFIC AGRICULTURAL LABORATORY

A MATRIX SCIENCES COMPANY

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Certificate of Analysis
(Continued)

Table with 10 columns: Analysis Date, Analyte, Amount Detected, LOQ (mg/kg), Notes, Analysis Date, Analyte, Amount Detected, LOQ (mg/kg), Notes. Contains two sections of data for JASBC 69(3):121-126, 2011 (GC-MS/MS) and (LC-MS/MS).

Handwritten signature of Rick Jordan



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**Certificate of Analysis**  
**(Continued)**

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
<b>JASBC 69(3):121-126, 2011 (LC-MS/MS) (Continued)</b>									
10/08/2019	Indaziflam	ND	0.20		10/08/2019	Indoxacarb	ND	0.20	
10/08/2019	Isoxaben	ND	0.20		10/08/2019	Linuron	ND	0.20	
10/08/2019	Malaoxon	ND	0.20		10/08/2019	Mandipropamid	ND	0.20	
10/08/2019	Metconazole	ND	0.20		10/08/2019	Methamidophos	ND	0.80	
10/08/2019	Methidathion	ND	0.20		10/08/2019	Methiocarb	ND	0.20	
10/08/2019	Methomyl	ND	0.20		10/08/2019	Methoxyfenozone	ND	0.20	
10/08/2019	Metrafenone	ND	0.20		10/08/2019	Mevinphos	ND	0.20	
10/08/2019	Norflurazon	ND	0.20		10/08/2019	Novaluron	ND	0.20	
10/08/2019	Omethoate	ND	0.20		10/08/2019	Oxadixyl	ND	1.0	
10/08/2019	Oxamyl	ND	0.20		10/08/2019	Oxydemeton-Methyl	ND	0.20	
10/08/2019	Penthiopyrad	ND	0.20		10/08/2019	Phorate Sulfone	ND	1.0	
10/08/2019	Phorate Sulfoxide	ND	0.20		10/08/2019	Phosalone	ND	0.20	
10/08/2019	Phosmet	ND	0.20		10/08/2019	Phosphamidon	ND	0.20	
10/08/2019	Piperonyl Butoxide	ND	1.0		10/08/2019	Pirimiphos-methyl	ND	0.20	
10/08/2019	Prallethrin	ND	0.20		10/08/2019	Prometon	ND	0.20	
10/08/2019	Prometryn	ND	0.20		10/08/2019	Propamocarb	ND	0.20	
10/08/2019	Propargite	ND	0.20		10/08/2019	Propiconazole	ND	0.40	
10/08/2019	Propoxur	ND	0.20		10/08/2019	Pymetrozine	ND	0.20	
10/08/2019	Pyraclostrobin	ND	0.20		10/08/2019	Pyraflufen-ethyl	ND	0.20	
10/08/2019	Pyrethrin	ND	1.0		10/08/2019	Pyridaben	ND	0.20	
10/08/2019	Pyrimethanil	ND	0.20		10/08/2019	Rotenone	ND	0.20	
10/08/2019	Sethoxydim	ND	0.40		10/08/2019	Siduron	ND	0.20	
10/08/2019	Simazine	ND	0.20		10/08/2019	Simetryn	ND	0.20	
10/08/2019	Spinetoram	ND	0.20		10/08/2019	Spinosad	ND	0.20	
10/08/2019	Spiromesifen	ND	0.40		10/08/2019	Spirotetramat	ND	0.20	
10/08/2019	Spiroxamine	ND	0.20		10/08/2019	Sulfoxaflor	ND	0.20	
10/08/2019	Tebuconazole	ND	0.20		10/08/2019	Tebufenozide	ND	0.20	
10/08/2019	Tebuthiuron	ND	0.20		10/08/2019	Terbuthylazine	ND	0.20	
10/08/2019	Thiabendazole	ND	0.20		10/08/2019	Thiacloprid	ND	0.20	
10/08/2019	Thiamethoxam	ND	0.20		10/08/2019	Thiobencarb	ND	0.20	
10/08/2019	Thiodicarb	ND	0.20		10/08/2019	Tolfenpyrad	ND	0.20	
10/08/2019	Triadimefon	ND	0.20		10/08/2019	Triadimenol	ND	0.40	
10/08/2019	Trifloxystrobin	ND	0.20		10/08/2019	Triflumizole	ND	0.20	





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**Notes and Definitions**

<u>Notes</u>	<u>Definition</u>
LOQ	Limit of Quantitation
ND	Not Detected
*	Not included under current scope of accreditation

The results contained in this report relate only to the items tested.  
The results reflect the condition of the samples as received by PAL.  
Samples will be stored for a minimum of 60 days after the final report is issued, as described in our Quality Manual.  
Reports should not be reproduced, except in full, without written approval from PAL.  
PAL is accredited to ISO/IEC 17025:2017 Standard, by PJLA, Accreditation #64422, Testing.