

# **Hemp Quality Assurance Testing**

## **CERTIFICATE OF ANALYSIS**

**DATE ISSUED 03/09/2023** 

SAMPLE NAME: Florian Oil Concentrate, Product Inhalable

**CULTIVATOR / MANUFACTURER** 

**Business Name:** License Number:

Address:

SAMPLE DETAIL

Batch Number: BSO-01-412 Sample ID: 230303R007

**DISTRIBUTOR / TESTED FOR** 

Business Name: Colorado

**Botanicals** 

License Number:

Address:

Date Collected: 03/03/2023 Date Received: 03/03/2023

Batch Size: Sample Size: **Unit Mass:** Serving Size:







Scan QR code to verify authenticity of results.

#### **CANNABINOID ANALYSIS - SUMMARY**

**Total THC: Not Detected** 

Total CBD: 71.446%

Sum of Cannabinoids: 77.69%

Total Cannabinoids: 77.69%

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 =  $\Delta^9$ -THC + (THCa (0.877)) Total CBD = CBD + (CBDa (0.877))

Sum of Cannabinoids =  $\Delta^9$ -THC + THCa + CBD + CBDa + CBG + CBGa + THCV + THCVa + CBC + CBCa + CBDV + CBDVa +  $\Delta^8$ -THC + CBL + CBN Total Cannabinoids =  $(\Delta^9$ -THC+0.877\*THCa) + (CBD+0.877\*CBDa) + (CBG+0.877\*CBGa) + (THCV+0.877\*THCVa) + (CBC+0.877\*CBCa) +

(CBDV+0.877\*CBDVa) + Δ8-THC + CBL + CBN

### **TERPENOID ANALYSIS - SUMMARY**

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: 0.9655%

β-Caryophyllene 3.753 mg/g

 $\alpha$ -Bisabolol 2.756 mg/g

 $\alpha$ -Humulene 1.401 mg/g

### **SAFETY ANALYSIS - SUMMARY**

Pesticides: PASS

Heavy Metals: PASS

Mycotoxins: PASS

Microbiology (PCR): PASS

Residual Solvents: PASS

Foreign Material: PASS

For quality assurance purposes. Not a Regulatory 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 4 Division 19. Department of Cannabis Control 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  $decision\ rules\ are\ applied:\ PASS-Results\ within\ limits/specifications,\ FAIL-Results\ exceed\ limits/specifications.$ 

LQC verified by: Josh Antunovich Job Title: Laboratory Manager Date: 03/09/2023

Approved by: Josh Wurzer Date: 03/09/2023

References: limit of detection (LOD), limit of quantification (LOQ), not detected (ND), not tested (NT)



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# 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 (Δ<sup>9</sup>-THC+0.877\*THCa)

TOTAL CBD: 71.446% Total CBD (CBD+0.877\*CBDa)

**TOTAL CANNABINOIDS: 77.69%** 

 $\begin{array}{l} Total \ Cannabinoids \ (Total \ THC) + (Total \ CBD) + \\ (Total \ CBG) + (Total \ THCV) + (Total \ CBC) + \\ (Total \ CBDV) + \Delta^8 - THC + CBL + CBN \end{array}$ 

TOTAL CBG: 1.41%
Total CBG (CBG+0.877\*CBGa)

TOTAL THCV: ND

Total THCV (THCV+0.877\*THCVa)

TOTAL CBC: 1.96%
Total CBC (CBC+0.877\*CBCa)

TOTAL CBDV: 0.756%

Total CBDV (CBDV+0.877\*CBDVa)

#### **CANNABINOID TEST RESULTS - 03/08/2023**

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
CBD	0.07 / 0.29	±25.721	714.46	71.446
CBC	0.2 / 0.5	±0.45	19.6	1.96
CBG	0.06 / 0.19	±0.433	14.10	1.410
CBN	0.1 / 0.3	±0.70	13.8	1.38
CBDV	0.04 / 0.15	±0.256	7.56	0.756
CBL	0.06 / 0.24	±0.198	7.33	0.733
Δ <sup>9</sup> -THC	0.06 / 0.26	N/A	ND	ND
$\Delta^8$ -THC	0.1 / 0.4	N/A	ND	ND
THCa	0.05 / 0.14	N/A	ND	ND
THCV	0.1 / 0.2	N/A	ND	ND
THCVa	0.07 / 0.20	N/A	ND	ND
CBDa	0.02 / 0.19	N/A	ND	ND
CBDVa	0.03 / 0.53	N/A	ND	ND
CBGa	0.1 / 0.2	N/A	ND	ND
CBCa	0.07 / 0.28	N/A	ND	ND
SUM OF CANNA	BINOIDS		776.9 mg/g	77.69%



# **Terpenoid Analysis**

Terpene analysis utilizing gas chromatographyflame ionization detection (GC-FID).

Method: QSP 1192 - Analysis of Terpenoids by GC-FID



### **β-Caryophyllene**

A sesquiterpene with a fragrance that can be described as spicy, woody, dry, dusty and mildly sweet. It was one of the first organic compounds to fully synthesized in a laboratory and plays a role in the endocannabinoid system as it is a functional CB<sub>2</sub> receptor agonist. Found in black pepper, clove, hops, rosemary, black-jack, perilla, spicebush, Indian pennywort, celery, frankincense, vitex, parsley, marigold, tamarind...etc.

#### TERPENOID TEST RESULTS - 03/08/2023

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
β-Caryophyllene	0.004/0.012	±0.1040	3.753	0.3753
$\alpha$ -Bisabolol	0.008 / 0.026	±0.1144	2.756	0.2756
α-Humulene	0.009/0.029	±0.0350	1.401	0.1401
Caryophyllene Oxide	0.010/0.033	±0.0167	0.467	0.0467
Guaiol	0.009/0.030	±0.0158	0.431	0.0431
Terpineol	0.009/0.031	±0.0188	0.394	0.0394
Nerolidol	0.006/0.019	±0.0120	0.245	0.0245
Linalool	0.009/0.032	±0.0034	0.115	0.0115
Valencene	0.009/0.030	±0.0050	0.093	0.0093
α-Pinene	0.005/0.017	N/A	ND	ND
Camphene	0.005 / 0.015	N/A	ND	ND
Sabinene	0.004 / 0.014	N/A	ND	ND
β-Pinene	0.004 / 0.014	N/A	ND	ND



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## Terpenoid Analysis Continued

## TERPENOID TEST RESULTS - 03/08/2023 continued



#### $\alpha$ -Bisabolol

A sesquiterpene alcohol with a fragrance that can be described as floral, peppery, sweet and clean. Found in chamomile, figwort, yarrow, skullcaps, lavender, ironwort, germander...etc.



### $\alpha$ -Humulene

Also known as  $\alpha$ -caryophyllene, it is an isomer of the sesquiterpene  $\beta$ -Caryophyllene which frequently occurs in nature with many aromatic plants across the globe. It has a fragrance that can be described as earthy or musky with spicy undertones. Found in hops, forskohlii, skullcaps, basil, nutmeg, cloves, sage, cotton, tamarind, black pepper, guava, Scotch pine...etc.

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
Myrcene	0.008 / 0.025	N/A	ND	ND
$\alpha$ -Phellandrene	0.006 / 0.020	N/A	ND	ND
$\Delta^3$ -Carene	0.005 / 0.018	N/A	ND	ND
α-Terpinene	0.005 / 0.017	N/A	ND	ND
p-Cymene	0.005 / 0.016	N/A	ND	ND
Limonene	0.005 / 0.016	N/A	ND	ND
Eucalyptol	0.006 / 0.018	N/A	ND	ND
β-Ocimene	0.006 / 0.020	N/A	ND	ND
γ-Terpinene	0.006 / 0.018	N/A	ND	ND
Sabinene Hydrate	0.006 / 0.022	N/A	ND	ND
Fenchone	0.009/0.028	N/A	ND	ND
Terpinolene	0.008 / 0.026	N/A	ND	ND
Fenchol	0.010 / 0.034	N/A	ND	ND
Isopulegol	0.005 / 0.016	N/A	ND	ND
Camphor	0.006/0.019	N/A	ND	ND
Isoborneol	0.004/0.012	N/A	ND	ND
Borneol	0.005 / 0.016	N/A	ND	ND
Menthol	0.008 / 0.025	N/A	ND	ND
Nerol	0.003 / 0.011	N/A	ND	ND
Citronellol	0.003 / 0.010	N/A	ND	ND
Pulegone	0.003 / 0.011	N/A	ND	ND
Geraniol	0.002 / 0.007	N/A	ND	ND
Geranyl Acetate	0.004 / 0.014	N/A	ND	ND
α-Cedrene	0.005 / 0.016	N/A	ND	ND
trans-β-Farnesene	0.008 / 0.025	N/A	ND	ND
Cedrol	0.008/0.027	N/A	ND	ND
TOTAL TERPENOIDS			9.655 mg/g	0.9655%



## **Pesticide Analysis**

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

## PESTICIDE TEST RESULTS - 03/07/2023 PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Abamectin	0.03 / 0.10	0.1	N/A	ND	PASS
Acephate	0.02 / 0.07	0.1	N/A	ND	PASS
Acequinocyl	0.02 / 0.07	0.1	N/A	ND	PASS
Acetamiprid	0.02 / 0.05	0.1	N/A	ND	PASS
Aldicarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Azoxystrobin	0.02 / 0.07	0.1	N/A	ND	PASS
Bifenazate	0.01 / 0.04	0.1	N/A	ND	PASS
Bifenthrin	0.02 / 0.05	3	N/A	ND	PASS
Boscalid	0.03 / 0.09	0.1	N/A	ND	PASS



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# Pesticide Analysis Continued

### PESTICIDE TEST RESULTS - 03/07/2023 continued PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (μg/g)	RESULT
Captan	0.19/0.57	0.7	N/A	ND	PASS
Carbaryl	0.02 / 0.06	0.5	N/A	ND	PASS
Carbofuran	0.02 / 0.05	≥LOD	N/A	ND	PASS
Chlorantraniliprole	0.04 / 0.12	10	N/A	ND	PASS
Chlordane*	0.03 / 0.08	≥LOD	N/A	ND	PASS
Chlorfenapyr*	0.03 / 0.10	≥LOD	N/A	ND	PASS
Chlorpyrifos	0.02 / 0.06	≥LOD	N/A	ND	PASS
Clofentezine	0.03 / 0.09	0.1	N/A	ND	PASS
Coumaphos	0.02 / 0.07	≥LOD	N/A	ND	PASS
Cyfluthrin	0.12 / 0.38	2	N/A	ND	PASS
Cypermethrin	0.11/0.32	1	N/A	ND	PASS
Daminozide	0.02 / 0.07	≥LOD	N/A	ND	PASS
Diazinon	0.02 / 0.05	0.1	N/A	ND	PASS
Dichlorvos (DDVP)	0.03 / 0.09	≥LOD	N/A	ND	PASS
Dimethoate	0.03 / 0.08	≥LOD	N/A	ND	PASS
Dimethomorph	0.03 / 0.09	2	N/A	ND	PASS
Ethoprophos	0.03 / 0.10	≥LOD	N/A	ND	PASS
Etofenprox	0.02 / 0.06	≥LOD	N/A	ND	PASS
Etoxazole	0.02 / 0.06	0.1	N/A	ND	PASS
Fenhexamid	0.03 / 0.09	0.1	N/A	ND	PASS
Fenoxycarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Fenpyroximate	0.02 / 0.06	0.1	N/A	ND	PASS
Fipronil	0.03 / 0.08	≥LOD	N/A	ND	PASS
Flonicamid	0.03 / 0.10	0.1	N/A	ND	PASS
Fludioxonil	0.03/0.10	0.1	N/A	ND	PASS
Hexythiazox	0.02 / 0.07	0.1	N/A	ND	PASS
Imazalil	0.02 / 0.06	≥LOD	N/A	ND	PASS
Imidacloprid	0.04 / 0.11	5	N/A	ND	PASS
Kresoxim-methyl	0.02 / 0.07	0.1	N/A	ND	PASS
Malathion	0.03 / 0.09	0.5	N/A	ND	PASS
Metalaxyl	0.02 / 0.07	2	N/A	ND	PASS
Methiocarb	0.02 / 0.07	≥LOD	N/A	ND	PASS
Methomyl	0.03 / 0.10	1	N/A	ND	PASS
Mevinphos	0.03 / 0.09	≥LOD	N/A	ND	PASS
Myclobutanil	0.03 / 0.09	0.1	N/A	ND	PASS
Naled	0.02 / 0.07	0.1	N/A	ND	PASS
Oxamyl	0.04 / 0.11	0.5	N/A	ND	PASS
Paclobutrazol	0.02 / 0.05	≥LOD	N/A	ND	PASS
Parathion-methyl	0.03 / 0.10	≥LOD	N/A	ND	PASS
Pentachloronitrobenzene*	0.03 / 0.09	0.1	N/A	ND	PASS
Permethrin	0.04 / 0.12	0.5	N/A	ND	PASS









# Pesticide Analysis Continued

### PESTICIDE TEST RESULTS - 03/07/2023 continued PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Phosmet	0.03 / 0.10	0.1	N/A	ND	PASS
Piperonyl Butoxide	0.02 / 0.07	3	N/A	ND	PASS
Prallethrin	0.03 / 0.08	0.1	N/A	ND	PASS
Propiconazole	0.02 / 0.07	0.1	N/A	ND	PASS
Propoxur	0.03 / 0.09	≥LOD	N/A	ND	PASS
Pyrethrins	0.04 / 0.12	0.5	N/A	ND	PASS
Pyridaben	0.02 / 0.07	0.1	N/A	ND	PASS
Spinetoram	0.02 / 0.07	0.1	N/A	ND	PASS
Spinosad	0.02 / 0.07	0.1	N/A	ND	PASS
Spiromesifen	0.02 / 0.05	0.1	N/A	ND	PASS
Spirotetramat	0.02 / 0.06	0.1	N/A	ND	PASS
Spiroxamine	0.03 / 0.08	≥LOD	N/A	ND	PASS
Tebuconazole	0.02 / 0.07	0.1	N/A	ND	PASS
Thiacloprid	0.03 / 0.10	≥LOD	N/A	ND	PASS
Thiamethoxam	0.03 / 0.10	5	N/A	ND	PASS
Trifloxystrobin	0.03/0.08	0.1	N/A	ND	PASS



## **Mycotoxin Analysis**

Mycotoxin analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS).

Method: QSP 1212 - Analysis of Pesticides and Mycotoxins by

## MYCOTOXIN TEST RESULTS - 03/07/2023 PASS

COMPOUND	LOD/LOQ (µg/kg)	ACTION LIMIT (µg/kg)	MEASUREMENT UNCERTAINTY (µg/kg)	RESULT (µg/kg)	RESULT
Aflatoxin B1	2.0 / 6.0		N/A	ND	
Aflatoxin B2	1.8 / 5.6		N/A	ND	
Aflatoxin G1	1.0 / 3.1		N/A	ND	
Aflatoxin G2	1.2 / 3.5		N/A	ND	
Total Aflatoxin		20		ND	PASS
Ochratoxin A	6.3 / 19.2	20	N/A	ND	PASS



## **Residual Solvents Analysis**

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

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

## RESIDUAL SOLVENTS TEST RESULTS - 03/09/2023 PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Propane	10/20	5000	N/A	ND	PASS
n-Butane	10/50	5000	N/A	ND	PASS
n-Pentane	20/50	5000	N/A	ND	PASS
n-Hexane	2/5	290	N/A	ND	PASS
n-Heptane	20/60	5000	N/A	ND	PASS
Benzene	0.03 / 0.09	1	N/A	ND	PASS
Toluene	7/21	890	N/A	ND	PASS
Total Xylenes	50 / 160	2170	N/A	ND	PASS
Methanol	50 / 200	3000	N/A	ND	PASS



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### RESIDUAL SOLVENTS TEST RESULTS - 03/09/2023 continued PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Ethanol	20/50	5000	N/A	ND	PASS
2-Propanol (Isopropyl Alcohol)	10 / 40	5000	N/A	ND	PASS
Acetone	20/50	5000	N/A	ND	PASS
Ethyl Ether	20/50	5000	N/A	ND	PASS
Ethylene Oxide	0.3/0.8	1	N/A	ND	PASS
Ethyl Acetate	20/60	5000	N/A	ND	PASS
Chloroform	0.1 / 0.2	1	N/A	ND	PASS
Dichloromethane (Methylene Chloride)	0.3/0.9	1	N/A	ND	PASS
Trichloroethylene	0.1 / 0.3	1	N/A	ND	PASS
1,2-Dichloroethane	0.05 / 0.1	1	N/A	ND	PASS
Acetonitrile	2/7	410	N/A	ND	PASS



## **Heavy Metals Analysis**

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

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

### HEAVY METALS TEST RESULTS - 03/09/2023 PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (μg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (μg/g)	RESULT
Arsenic	0.02 / 0.1	0.2	N/A	ND	PASS
Cadmium	0.02 / 0.05	0.2	N/A	ND	PASS
Lead	0.04 / 0.1	0.5	N/A	ND	PASS
Mercury	0.002 / 0.01	0.1	N/A	ND	PASS



# **Microbiology Analysis**

PCR

Analysis conducted by polymerase chain reaction (PCR) and fluorescence detection of microbiological contaminants.

Method: QSP 1221 - Analysis of Microbiological Contaminants

## MICROBIOLOGY TEST RESULTS (PCR) - 03/07/2023 PASS

COMPOUND	ACTION LIMIT	RESULT	RESULT
Shiga toxin-producing Escherichia coli	Not Detected in 1g	ND	PASS
Salmonella spp.	Not Detected in 1g	ND	PASS
Aspergillus fumigatus	Not Detected in 1g	ND	PASS
Aspergillus flavus	Not Detected in 1g	ND	PASS
Aspergillus niger	Not Detected in 1g	ND	PASS
Aspergillus terreus	Not Detected in 1g	ND	PASS







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Visual analysis includes, but is not limited to, sand, soil, cinders, dirt, mold, hair, insect fragments, and mammalian excreta.

**Method:** QSP 1226 - Analysis of Foreign Material in Cannabis and Cannabis Products

### FOREIGN MATERIAL TEST RESULTS - 03/09/2023 PASS

COMPOUND	ACTION LIMIT	RESULT
Total Sample Area Covered by Sand, Soil, Cinders, or Dirt	>25%	PASS
Total Sample Area Covered by Mold	>25%	PASS
Total Sample Area Covered by an Imbedded Foreign Material	>25%	PASS
Insect Fragment Count	> 1 per 3 grams	PASS
Hair Count	> 1 per 3 grams	PASS
Mammalian Excreta Count	> 1 per 3 grams	PASS