

## **Hemp Quality Assurance Testing**

### **CERTIFICATE OF ANALYSIS**

**DATE ISSUED 05/31/2023** 

SAMPLE NAME: A00000189

Infused, Hemp

**CULTIVATOR / MANUFACTURER** 

**Business Name:** License Number:

Address:

SAMPLE DETAIL

**Batch Number:** 

Sample ID: 230527S002

**DISTRIBUTOR / TESTED FOR** 

Business Name: New York Hemp Oil

License Number:

Address:

Date Collected: 05/27/2023 Date Received: 05/27/2023

Batch Size:

Sample Size: 1.0 units

Unit Mass: 30 milliliters per Unit Serving Size: 1 milliliters per Serving







Scan QR code to verify authenticity of results.

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

Total THC: 41.640 mg/unit

Total CBD: 1188.690 mg/unit

Total Cannabinoids: 1354.980 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 =  $\Delta^9$ -THC + (THCa (0.877))

Total CBD = CBD + (CBDa (0.877))

Sum of Cannabinoids =  $\Delta^9$ -THC + THCa + CBD + CBDa + CBG + CBGa + Sum of Cannabinoids: 1354.980 mg/unit 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

Density: 0.9512 g/mL

**TERPENOID ANALYSIS - SUMMARY** 

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: 0.125%

β-Caryophyllene 0.486 mg/g

 $\alpha$ -Bisabolol 0.281 mg/g

α-Humulene 0.199 mg/g

**SAFETY ANALYSIS - SUMMARY** 

Pesticides: ND Residual Solvents: ND Heavy Metals: ND

Microbiology (PCR): ND Microbiology (Plating): ND

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

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

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)

LQC verified by: Michael Pham Job Title: Senior Laboratory Analyst Date: 05/31/2023

Approved by: Josh Wurzer Title: Chief Compliance Officer Date: 05/31/2023



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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: 41.640 mg/unit

Total THC (Δ<sup>9</sup>-THC+0.877\*THCa)

TOTAL CBD: 1188.690 mg/unit

Total CBD (CBD+0.877\*CBDa)

TOTAL CANNABINOIDS: 1354.980 mg/unit

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

TOTAL CBG: 60.840 mg/unit

Total CBG (CBG+0.877\*CBGa)

**TOTAL THCV: ND** 

Total THCV (THCV+0.877\*THCVa)

TOTAL CBC: 46.890 mg/unit

Total CBC (CBC+0.877\*CBCa)

TOTAL CBDV: 13.620 mg/unit

Total CBDV (CBDV+0.877\*CBDVa)

#### **CANNABINOID TEST RESULTS - 05/30/2023**

	COMPOUND	LOD/LOQ (mg/mL)	MEASUREMENT UNCERTAINTY (mg/mL)	RESULT (mg/mL)	RESULT (%)
Ī	CBD	0.004 / 0.011	±1.4779	39.623	4.1656
	CBG	0.002 / 0.006	±0.0984	2.028	0.2132
	CBC	0.003 / 0.010	±0.0503	1.563	0.1643
Ī	Δ <sup>9</sup> -THC	0.002 / 0.014	±0.0762	1.388	0.1459
Ī	CBDV	0.002 / 0.012	±0.0185	0.454	0.0477
	CBN	0.001 / 0.007	±0.0017	0.058	0.0061
Ī	CBL	0.003 / 0.010	±0.0019	0.052	0.0055
	Δ <sup>8</sup> -THC	0.01 / 0.02	N/A	ND	ND
t -	THCa	0.001 / 0.005	N/A	ND	ND
	THCV	0.002/0.012	N/A	ND	ND
	THCVa	0.002/0.019	N/A	ND	ND
	CBDa	0.001 / 0.026	N/A	ND	ND
	CBDVa	0.001 / 0.018	N/A	ND	ND
	CBGa	0.002 / 0.007	N/A	ND	ND
	CBCa	0.001 / 0.015	N/A	ND	ND
	SUM OF CANNA	BINOIDS	45.166 mg/mL	4.7483%	

#### Unit Mass: 30 milliliters per Unit / Serving Size: 1 milliliters per Serving

$\Delta^9$ -THC per Unit	41.640 mg/unit
$\Delta^9$ -THC per Serving	1.388 mg/serving
Total THC per Unit	41.640 mg/unit
Total THC per Serving	1.388 mg/serving
CBD per Unit	1188.690 mg/unit
CBD per Serving	39.623 mg/serving
Total CBD per Unit	1188.690 mg/unit
Total CBD per Serving	39.623 mg/serving
Sum of Cannabinoids per Unit	1354.980 mg/unit
Sum of Cannabinoids per Serving	45.166 mg/serving
Total Cannabinoids per Unit	1354.980 mg/unit
Total Cannabinoids per Serving	45.166 mg/serving

#### **DENSITY TEST RESULT**

0.9512 g/mL

Tested 05/30/2023

Method: QSP 7870 - Sample

Preparation



# Hemp Quality Assurance Testing CERTIFICATE OF ANALYSIS

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## **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.



#### $\alpha$ -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.

#### TERPENOID TEST RESULTS - 05/31/2023

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
β-Caryophyllene	0.004 / 0.012	±0.0135	0.486	0.0486
$\alpha$ -Bisabolol	0.008 / 0.026	±0.0117	0.281	0.0281
$\alpha$ -Humulene	0.009 / 0.029	±0.0050	0.199	0.0199
Guaiol	0.009 / 0.030	±0.0046	0.126	0.0126
Caryophyllene Oxide	0.010 / 0.033	±0.0025	0.071	0.0071
Linalool	0.009 / 0.032	±0.0017	0.056	0.0056
Nerolidol	0.006/0.019	±0.0015	0.031	0.0031
Terpineol	0.009 / 0.031	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
trans-β-Farnesene	0.008 / 0.025	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Valencene	0.009 / 0.030	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
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
Myrcene	0.008 / 0.025	N/A	ND	ND
α-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
Cedrol	0.008 / 0.027	N/A	ND	ND
TOTAL TERPENOIDS			1.250 mg/g	0.125%



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## **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 - 05/30/2023 ND

COMPOUND	LOD/LOQ (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)
Abamectin	0.03 / 0.10	N/A	ND
Azoxystrobin	0.02 / 0.07	N/A	ND
Bifenazate	0.01 / 0.04	N/A	ND
Bifenthrin	0.02 / 0.05	N/A	ND
Boscalid	0.03 / 0.09	N/A	ND
Chlorpyrifos	0.02 / 0.06	N/A	ND
Cypermethrin	0.11 / 0.32	N/A	ND
Etoxazole	0.02 / 0.06	N/A	ND
Hexythiazox	0.02 / 0.07	N/A	ND
Imidacloprid	0.04 / 0.11	N/A	ND
Malathion	0.03 / 0.09	N/A	ND
Myclobutanil	0.03 / 0.09	N/A	ND
Permethrin	0.04 / 0.12	N/A	ND
Piperonyl Butoxide	0.02 / 0.07	N/A	ND
Propiconazole	0.02 / 0.07	N/A	ND
Spiromesifen	0.02 / 0.05	N/A	ND
Tebuconazole	0.02 / 0.07	N/A	ND
Trifloxystrobin	0.03 / 0.08	N/A	ND



## **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 - 05/30/2023 ND

COMPOUND	LOD/LOQ (µg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (µg/g)
Propane	10/20	N/A	ND
n-Butane	10/50	N/A	ND
n-Pentane	20/50	N/A	ND
n-Hexane	2/5	N/A	ND
n-Heptane	20/60	N/A	ND
Benzene	0.03 / 0.09	N/A	ND
Toluene	7/21	N/A	ND
Total Xylenes	50 / 160	N/A	ND
Methanol	50 / 200	N/A	ND
Ethanol	20/50	N/A	ND
2-Propanol (Isopropyl Alcohol)	10/40	N/A	ND
Acetone	20/50	N/A	ND
Ethyl Ether	20/50	N/A	ND
Ethylene Oxide	0.3 / 0.8	N/A	ND
Ethyl Acetate	20/60	N/A	ND
Chloroform	0.1 / 0.2	N/A	ND
Dichloromethane (Methylene Chloride)	0.3/0.9	N/A	ND

Continued on next page









#### RESIDUAL SOLVENTS TEST RESULTS - 05/30/2023 continued ND

COMPOUND	LOD/LOQ (μg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (μg/g)
Trichloroethylene	0.1 / 0.3	N/A	ND
1,2-Dichloroethane	0.05 / 0.1	N/A	ND
Acetonitrile	2/7	N/A	ND



## **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 - 05/28/2023 ND**

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



## **Microbiology Analysis**

PCR AND PLATING

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

Method: QSP 1221 - Analysis of Microbiological Contaminants

#### MICROBIOLOGY TEST RESULTS (PCR) - 05/30/2023 ND

COMPOUND	RESULT (cfu/g)
Shiga toxin-producing Escherichia coli	ND
Salmonella spp.	ND
Bile-Tolerant Gram-Negative Bacteria	ND
Staphylococcus aureus	ND

Analysis conducted by  $3M^{\mathsf{TM}}$  Petrifilm and plate counts of microbiological contaminants.

Method: QSP 6794 - Plating with 3M<sup>™</sup> Petrifilm<sup>™</sup>

#### MICROBIOLOGY TEST RESULTS (PLATING) - 05/30/2023 ND

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