

Certificate of Analysis

Sample Name: CBD isolate #424A
 LIMS Sample ID: 190131P001
 Batch #:
 Sample Metrc ID:
 Sample Type: Concentrate, Product Inhalable
 Batch Count:
 Sample Count:
 Unit Mass:
 Serving Mass:

Date Collected: 01/31/2019
 Date Received: 01/31/2019
 Tested for: cbdMD
 License #:
 Address:
 Produced by:
 License #:
 Address:
 Overall result for batch:

Moisture Test Results

Moisture	% NT

Cannabinoid Test Results

02/05/2019

Cannabinoid analysis utilizing High Performance Liquid Chromatography (HPLC, QSP 5-4-4-4)

	mg/g	%	LOD mg/g	LOQ mg/g
THC	ND	ND	0.017	0.2
THCa	ND	ND	0.02	0.2
CBD	990.5	99.05	0.012	0.2
CBDa	ND	ND	0.012	0.2
CBN	ND	ND	0.006	0.2
CBDV	7.1	0.71	0.0034	0.2
CBDVa	ND	ND	0.014	0.2
CBG	ND	ND	0.012	0.2
CBGa	ND	ND	0.017	0.2
THCV	ND	ND	0.009	0.2
Δ8 - THC	ND	ND	0.021	0.2
CBC	ND	ND	0.011	0.2

Sum of Cannabinoids: 997.6 99.76

Total THC ($\Delta 9\text{THC} + 0.877 \times \text{THCa}$) ND ND
 Total CBD ($\text{CBD} + 0.877 \times \text{CBDa}$) 990.5 99.05

Action Limit mg

THC per Unit
 THC per Serving

Microbiological Test Results

02/03/2019

PCR and fluorescence detection of microbiological impurities

	ND	Action Limit
Shiga toxin-producing Escherichia coli	ND	ND
Salmonella spp.	ND	ND
Aspergillus fumigatus	ND	ND
Aspergillus flavus	ND	ND
Aspergillus niger	ND	ND
Aspergillus terreus	ND	ND

Heavy Metal Test Results

02/03/2019

Heavy metal analysis utilizing Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

	μg/g	Action Limit μg/g	LOD μg/g	LOQ μg/g
Cadmium	ND	0.2	0.0032	0.01
Lead	ND	0.5	0.0080	0.025
Arsenic	ND	0.2	0.0032	0.01
Mercury	ND	0.1	0.0025	0.008

Mycotoxin Test Results

02/05/2019

Mycotoxin analysis utilizing HPLC-Mass Spectrometry

	μg/kg	Action Limit μg/kg	LOD μg/kg	LOQ μg/kg
Aflatoxin B1, B2, G1, G2	ND	20.0	0.681	2.139
Ochratoxin A	ND	20.0	6.204	19.5

Water Activity Test Results

Water Activity	Aw NT	Action Limit Aw

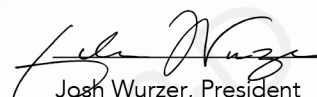
Terpene Test Results

Terpene analysis utilizing Gas Chromatography - Flame Ionization Detection (GC - FID)

	mg/g	%	LOD mg/g	LOQ mg/g
□ Bisabolol	NT			
□ Pinene	NT			
□ Carene	NT			
□ Borneol	NT			
□ Caryophyllene	NT			
□ Geraniol	NT			
□ Humulene	NT			
□ Terpinolene	NT			
□ Valencene	NT			
□ Menthol	NT			
□ Nerolidol	NT			
□ Camphene	NT			
□ Eucalyptol	NT			
□ Cedrene	NT			
□ Camphor	NT			
□ (-)-Isopulegol	NT			
□ Sabinene	NT			
□ Terpinene	NT			
□ Terpinene	NT			
□ Linalool	NT			
□ Limonene	NT			
□ Myrcene	NT			
□ Fenchol	NT			
□ Phellandrene	NT			
□ Caryophyllene Oxide	NT			
□ Terpineol	NT			
□ Pinene	NT			
□ R-(+)-Pulegone	NT			
□ Geranyl Acetate	NT			
□ Citronellol	NT			
□ p-Cymene	NT			
□ Ocimene	NT			
□ Guaiol	NT			
□ Phytol	NT			
□ Isoborneol	NT			

Total Terpene Concentration: NT

Sample Certification


 Josh Wurzer, President
 Date: 02/05/2019

Certificate of Analysis

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 Batch #:
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 Unit Mass:
 Serving Mass:

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 Tested for: cbdMD
 License #:
 Address:
 Produced by:
 License #:
 Address:
 Overall result for batch:

Pesticide Test Results

02/05/2019

Pesticide, Fungicide and plant growth regulator analysis utilizing HPLC-Mass Spectrometry and GC-Mass Spectrometry

	µg/g	Action Limit µg/g	LOD µg/g	LOQ µg/g
Abamectin	ND	0.1	0.032	0.1
Acephate	ND	0.1	0.032	0.1
Acequinocyl	ND	0.1	0.032	0.1
Acetamiprid	ND	0.1	0.032	0.1
Azoxystrobin	ND	0.1	0.032	0.1
Bifenazate	ND	0.1	0.032	0.1
Bifenthrin	ND	3.0	0.032	0.1
Boscalid	ND	0.1	0.032	0.1
Captan	ND	0.7	0.032	0.1
Carbaryl	ND	0.5	0.032	0.1
Chlorantraniliprole	ND	10.0	0.032	0.1
Clofentezine	ND	0.1	0.032	0.1
Cyfluthrin	ND	2.0	0.032	0.1
Cypermethrin	ND	1.0	0.032	0.1
Diazinon	ND	0.1	0.032	0.1
Dimethomorph	ND	2.0	0.032	0.1
Etoazole	ND	0.1	0.032	0.1
Fenhexamid	ND	0.1	0.032	0.1
Fenpyroximate	ND	0.1	0.032	0.1
Flonicamid	ND	0.1	0.032	0.1
Fludioxonil	ND	0.1	0.032	0.1
Hexythiazox	ND	0.1	0.032	0.1
Imidacloprid	ND	5.0	0.032	0.1
Kresoxim-methyl	ND	0.1	0.032	0.1
Malathion	ND	0.5	0.032	0.1
Metalaxyl	ND	2.0	0.032	0.1
Methomyl	ND	1.0	0.032	0.1
Myclobutanil	ND	0.1	0.032	0.1
Naled	ND	0.1	0.032	0.1
Oxamyl	ND	0.5	0.032	0.1
Pentachloronitrobenzene	ND	0.1	0.032	0.1
Permethrin	ND	0.5	0.032	0.1
Phosmet	ND	0.1	0.032	0.1
Piperonylbutoxide	ND	3.0	0.032	0.1
Prallethrin	ND	0.1	0.032	0.1
Propiconazole	ND	0.1	0.032	0.1
Pyrethrins	ND	0.5	0.032	0.1
Pyridaben	ND	0.1	0.032	0.1
Spinetoram	ND	0.1	0.032	0.1
Spinosad	ND	0.1	0.032	0.1
Spiromesifen	ND	0.1	0.032	0.1
Spirotetramat	ND	0.1	0.032	0.1
Tebuconazole	ND	0.1	0.032	0.1
Thiamethoxam	ND	5.0	0.032	0.1
Trifloxystrobin	ND	0.1	0.032	0.1

Pesticide Test Results

02/05/2019

Pesticide, Fungicide and plant growth regulator analysis utilizing HPLC-Mass Spectrometry and GC-Mass Spectrometry

	µg/g	Action Limit µg/g	LOD µg/g	LOQ µg/g
Aldicarb	ND	ND	0.032	0.1
Carbofuran	ND	ND	0.032	0.1
Chlordane	ND	ND	0.032	0.1
Chlorfenapyr	ND	ND	0.032	0.1
Chlorpyrifos	ND	ND	0.032	0.1
Coumaphos	ND	ND	0.032	0.1
Daminozide	ND	ND	0.032	0.1
DDVP (Dichlorvos)	ND	ND	0.032	0.1
Dimethoate	ND	ND	0.032	0.1
Ethoprop(hos)	ND	ND	0.032	0.1
Etofenprox	ND	ND	0.032	0.1
Fenoxycarb	ND	ND	0.032	0.1
Fipronil	ND	ND	0.032	0.1
Imazalil	ND	ND	0.032	0.1
Methiocarb	ND	ND	0.032	0.1
Methyl parathion	ND	ND	0.032	0.1
Mevinphos	ND	ND	0.032	0.1
Paclobutrazol	ND	ND	0.032	0.1
Propoxur	ND	ND	0.032	0.1
Spiroxamine	ND	ND	0.032	0.1
Thiacloprid	ND	ND	0.032	0.1

Foreign Material Test Results

NT

Sample Certification


 Josh Wurzer, President
 Date: 02/05/2019

Certificate of Analysis

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 LIMS Sample ID: 190131P001
 Batch #:
 Sample Metric ID:
 Sample Type: Concentrate, Product Inhalable
 Batch Count:
 Sample Count:
 Unit Mass:
 Serving Mass:

Date Collected: 01/31/2019
 Date Received: 01/31/2019
 Tested for: cbdMD
 License #:
 Address:
 Produced by:
 License #:
 Address:
 Overall result for batch:

Residual Solvent Test Results

Residual Solvent analysis utilizing Gas Chromatography - Mass Spectrometry (GC - MS)

	µg/g	Action Limit µg/g	LOD µg/g	LOQ µg/g
1,2-Dichloroethane	NT			
Benzene	NT			
Chloroform	NT			
Ethylene Oxide	NT			
Methylene chloride	NT			
Trichloroethylene	NT			
Acetone	NT			
Acetonitrile	NT			
Butane	NT			
Ethanol	NT			
Ethyl acetate	NT			
Ethyl ether	NT			
Heptane	NT			
Hexane	NT			
Isopropyl Alcohol	NT			
Methanol	NT			
Pentane	NT			
Propane	NT			
Toluene	NT			
Total Xylenes	NT			

Batch Photo

Label Claim Test Results

Cannabinoids

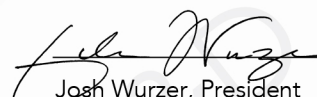
Description	Claim	Actual	% Diff	Fail Limit
N/A	N/A	N/A	N/A	N/A

Terpenoids

Description	Claim	Actual	% Diff	Fail Limit
N/A	N/A	N/A	N/A	N/A

Note

Sample Certification


 Josh Wurzer, President
 Date: 02/05/2019

Certificate of Analysis

Sample Name: CBD Isolate Batch# 417A
 LIMS Sample ID: 181029U011
 Batch #:
 Sample Metrc ID:
 Sample Type: Concentrate, Inhalable
 Batch Count:
 Sample Count:
 Unit Mass: 1 Grams per Unit

Date Collected: 10/29/2018
 Date Received: 10/29/2018
 Tested for: cbdMD
 License #:
 Address:
 Produced by:
 License #:
 Address:
 Overall result for batch:

Moisture Test Results

Moisture	%	Action Limit %
	NT	

Cannabinoid Test Results

11/01/2018

Cannabinoid analysis utilizing High Performance Liquid Chromatography (HPLC, QSP 5-4-4-4)

	mg/g	%	LOD mg/g	LOQ mg/g
THC	ND	ND	0.017	0.2
THCa	ND	ND	0.02	0.2
CBD	992.8	99.28	0.012	0.2
CBDa	ND	ND	0.012	0.2
CBN	ND	ND	0.006	0.2
CBDV	3.0	0.30	0.0034	0.2
CBDVa	ND	ND	0.014	0.2
CBG	ND	ND	0.012	0.2
CBGa	ND	ND	0.017	0.2
THCV	ND	ND	0.009	0.2
Δ8 - THC	ND	ND	0.021	0.2
CBC	ND	ND	0.011	0.2

Sum of Cannabinoids: 995.8 99.58 995.8 mg/Unit

Total THC ($\Delta 9\text{THC} + 0.877 \cdot \text{THCa}$) ND ND ND
 Total CBD ($\text{CBD} + 0.877 \cdot \text{CBDa}$) 992.8 99.28 992.8 mg/Unit

Residual Solvent Test Results

10/31/2018

Residual Solvent analysis utilizing Gas Chromatography - Mass Spectrometry (GC - MS)

	μg/g	Action Limit μg/g	LOD μg/g	LOQ μg/g
1,2-Dichloroethane	NT			
Benzene	NT			
Chloroform	NT			
Ethylene Oxide	NT			
Methylene chloride	NT			
Trichloroethylene	NT			
Acetone	ND	3100.0	371.43	1088.28
Acetonitrile	ND	6.0	0.657	1.925
Butane	ND	5000.0	107.06	313.69
Ethanol	ND	5000.0	149.81	438.94
Ethyl acetate	ND	5000.0	149.48	437.97
Ethyl ether	ND	5000.0	375.12	1099.1
Heptane	ND	5000.0	149.21	437.17
Hexane	ND	70.0	18.5	54.22
Isopropyl Alcohol	ND	320.0	74.61	218.59
Methanol	ND	400.0	96.47	282.66
Pentane	<LOQ	5000.0	149.25	437.31
Propane	ND	5000.0	106.66	312.5
Toluene	ND	30.0	7.107	20.82
Total Xylenes	ND	10.0	1.387	4.065

Terpene Test Results

11/01/2018

Terpene analysis utilizing Gas Chromatography - Flame Ionization Detection (GC - FID)

	mg/g / %		mg/g / %
α Bisabolol	0.00 / 0.000	α Terpinene	0.00 / 0.000
α Pinene	0.00 / 0.000	Linalool	0.00 / 0.000
3 Carene	0.00 / 0.000	Limonene	0.00 / 0.000
Borneol	0.00 / 0.000	Myrcene	0.00 / 0.000
β Caryophyllene	0.00 / 0.000	Fenchol	0.00 / 0.000
Geraniol	0.00 / 0.000	α Phellandrene	0.00 / 0.000
α Humulene	0.00 / 0.000	Caryophyllene Oxide	0.00 / 0.000
Terpinolene	0.00 / 0.000	Terpineol	0.00 / 0.000
Valencene	0.00 / 0.000	β Pinene	0.00 / 0.000
Menthol	0.00 / 0.000	R-(+)-Pulegone	0.00 / 0.000
Nerolidol	0.00 / 0.000	Geranyl Acetate	0.00 / 0.000
Camphene	0.00 / 0.000	Citronellol	0.00 / 0.000
Eucalyptol	0.00 / 0.000	p-Cymene	0.00 / 0.000
α Cedrene	0.00 / 0.000	Ocimene	0.00 / 0.000
Camphor	0.00 / 0.000	Guaiol	0.00 / 0.000
(-)-Isopulegol	0.00 / 0.000	Phytol	0.00 / 0.000
Sabinene	0.00 / 0.000	Isoborneol	0.00 / 0.000
γ Terpinene	0.00 / 0.000		

Total Terpene Concentration:

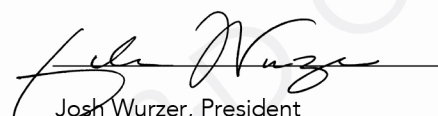
ND

Microbiological Test Results

11/03/2018

PCR and fluorescence detection of microbiological impurities

	ND	Action Limit
Shiga toxin-producing Escherichia coli	ND	ND
Salmonella spp.	ND	ND
Aspergillus fumigatus	ND	ND
Aspergillus flavus	ND	ND
Aspergillus niger	ND	ND
Aspergillus terreus	ND	ND


 Josh Wurzer, President
 Date: 11/03/2018

Certificate of Analysis

Sample Name: CBD Isolate Batch# 417A

LIMS Sample ID: 181029U011

Batch #:

Sample Metrc ID:

Sample Type: Concentrate, Inhalable

Batch Count:

Sample Count:

Unit Mass: 1 Grams per Unit

Date Collected: 10/29/2018

Date Received: 10/29/2018

Tested for: cbdMD

License #:

Address:

Produced by:

License #:

Address:

Overall result for batch:

Pesticide Test Results

10/31/2018

Pesticide, Fungicide and plant growth regulator analysis utilizing HPLC-Mass Spectrometry and GC-Mass Spectrometry

	µg/g	Action Limit µg/g	LOD µg/g	LOQ µg/g
Abamectin	ND	0.1	0.032	0.1
Acephate	ND	0.1	0.032	0.1
Acequinocyl	ND	0.1	0.032	0.1
Acetamiprid	ND	0.1	0.032	0.1
Azoxystrobin	ND	0.1	0.032	0.1
Bifenazate	ND	0.1	0.032	0.1
Bifenthrin	ND	3.0	0.032	0.1
Boscalid	ND	0.1	0.032	0.1
Captan	ND	0.7	0.032	0.1
Carbaryl	ND	0.5	0.032	0.1
Chlorantraniliprole	ND	10.0	0.032	0.1
Clofentezine	ND	0.1	0.032	0.1
Cyfluthrin	ND	2.0	0.032	0.1
Cypermethrin	ND	1.0	0.032	0.1
Diazinon	ND	0.1	0.032	0.1
Dimethomorph	ND	2.0	0.032	0.1
Etoxazole	ND	0.1	0.032	0.1
Fenhexamid	ND	0.1	0.032	0.1
Fenpyroximate	ND	0.1	0.032	0.1
Flonicamid	ND	0.1	0.032	0.1
Fludioxonil	ND	0.1	0.032	0.1
Hexythiazox	ND	0.1	0.032	0.1
Imidacloprid	ND	5.0	0.032	0.1
Kresoxim-methyl	ND	0.1	0.032	0.1
Malathion	ND	0.5	0.032	0.1
Metalaxyl	ND	2.0	0.032	0.1
Methomyl	ND	1.0	0.032	0.1
Myclobutanil	ND	0.1	0.032	0.1
Naled	ND	0.1	0.032	0.1
Oxamyl	ND	0.5	0.032	0.1
Pentachloronitrobenzene	ND	0.1	0.032	0.1
Permethrin	ND	0.5	0.032	0.1
Phosmet	ND	0.1	0.032	0.1
Piperonylbutoxide	ND	3.0	0.032	0.1
Prallethrin	ND	0.1	0.032	0.1
Propiconazole	ND	0.1	0.032	0.1
Pyrethrins	ND	0.5	0.032	0.1
Pyridaben	ND	0.1	0.032	0.1
Spinetoram	ND	0.1	0.032	0.1
Spinosad	ND	0.1	0.032	0.1
Spiromesifen	ND	0.1	0.032	0.1
Spirotetramat	ND	0.1	0.032	0.1
Tebuconazole	ND	0.1	0.032	0.1
Thiamethoxam	ND	5.0	0.032	0.1
Trifloxystrobin	ND	0.1	0.032	0.1

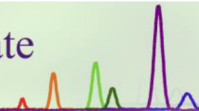
Pesticide Test Results

10/31/2018

Pesticide, Fungicide and plant growth regulator analysis utilizing HPLC-Mass Spectrometry and GC-Mass Spectrometry

	µg/g	Action Limit µg/g	LOD µg/g	LOQ µg/g
Aldicarb	ND	ND	0.032	0.1
Carbofuran	ND	ND	0.032	0.1
Chlordane	ND	ND	0.032	0.1
Chlorfenapyr	ND	ND	0.032	0.1
Chlorpyrifos	ND	ND	0.032	0.1
Coumaphos	ND	ND	0.032	0.1
Daminozide	ND	ND	0.032	0.1
DDVP (Dichlorvos)	ND	ND	0.032	0.1
Dimethoate	ND	ND	0.032	0.1
Ethoprop(hos)	ND	ND	0.032	0.1
Etofenprox	ND	ND	0.032	0.1
Fenoxycarb	ND	ND	0.032	0.1
Fipronil	ND	ND	0.032	0.1
Imazalil	ND	ND	0.032	0.1
Methiocarb	ND	ND	0.032	0.1
Methyl parathion	ND	ND	0.032	0.1
Mevinphos	ND	ND	0.032	0.1
Paclobutrazol	ND	ND	0.032	0.1
Propoxur	ND	ND	0.032	0.1
Spiroxamine	ND	ND	0.032	0.1
Thiacloprid	ND	ND	0.032	0.1


 Josh Wurzer, President
 Date: 11/03/2018



Certificate ID: **22729-19**

Client Sample ID: **170924**

Lot Number:

Matrix: **Concentrates/Extracts - Alcohol**

Scan QR Code
for authenticity



cbdMD

Attn: info@cbdmd.com



The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2005. 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-10-04]

Analyst: *JFD*

The client sample was analyzed for plant-based cannabinoids by Convergence Chromatography (CC). The collected data was compared to data collected for certified reference standards at known concentrations.

22729-CN

ID	Weight %	Conc.			
Δ9-THC	-	-			
THCV	-	-			
CBD	81.13 wt %	811.29 mg/g			
CBDV	1.61 wt %	16.09 mg/g			
CBG	0.04 wt %	0.38 mg/g			
CBC	-	-			
CBN	-	-			
THCA	-	-			
CBDA	-	-			
CBGA	0.05 wt %	0.48 mg/g			
Total	82.82 wt%	828.23 mg/g	0%	Cannabinoids (wt%)	81.1%
Max THC	-	-			
Max CBD	81.13 wt%	811.29 mg/g			

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. ND = None detected above the limits of detection (LLD)

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.

22729-MBI

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

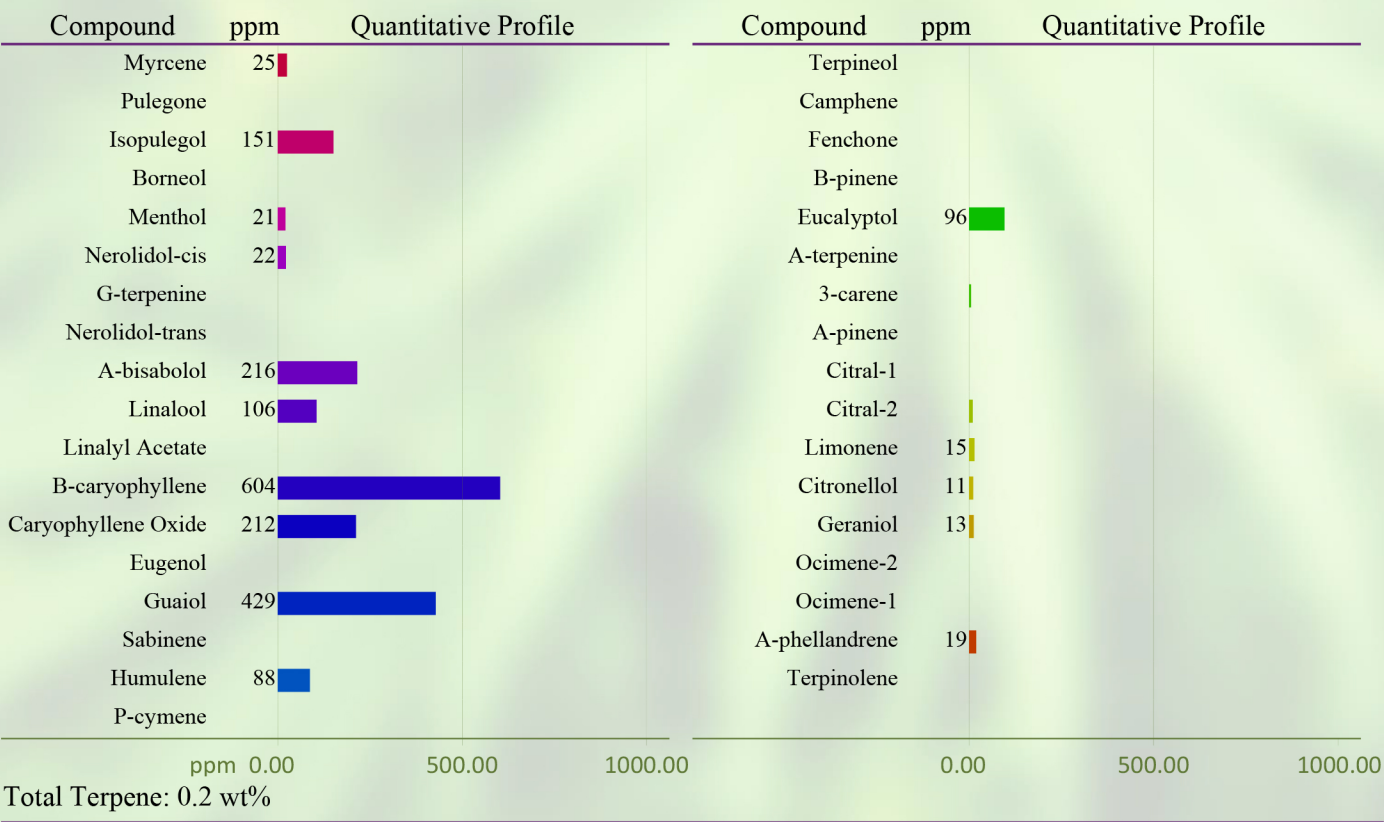
Note: All recorded Microbiological tests are within the established limits.

TP: Terpenes Profile [WI-10-08]

Analyst: CJH

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.

22729-TP



* Indicates qualitative calculation based on recorded peak areas.

END OF REPORT