

Certificate ID: **24673**


 Client Sample ID: **Cloud Tincture 300**

 Matrix: **Tincture - Vegetable Glycerin**

 Date Received: **12/14/2017**

**CBD American Shaman**

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.

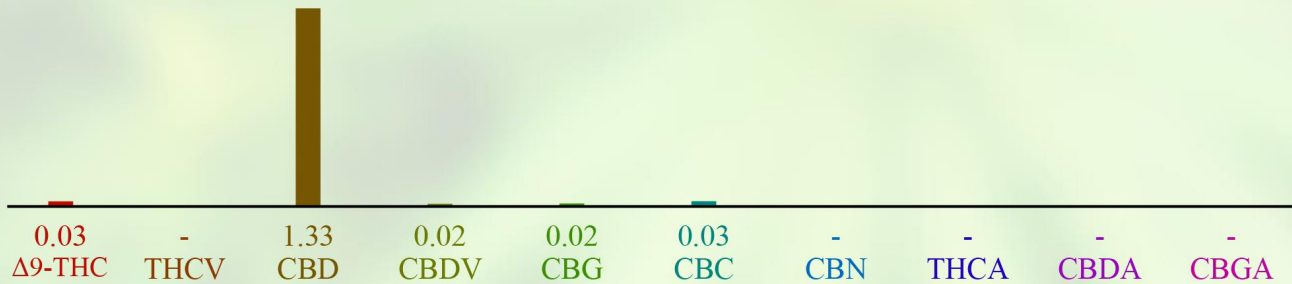
Authorization: Matthew Silva, Chemical Engineer	Signature: 	Date: 12/20/2017
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**CN: Cannabinoid Profile & Potency [WI-10-04]**

 Analyst: *JDP*

 Test Date: *12/20/2017*

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.

**24673-CN**


ID	Weight %	Conc.
Δ9-THC	0.03 wt %	0.43 mg/mL
THCV	ND	ND
CBD	1.33 wt %	16.56 mg/mL
CBDV	0.02 wt %	0.22 mg/mL
CBG	0.02 wt %	0.26 mg/mL
CBC	0.03 wt %	0.44 mg/mL
CBN	ND	ND
THCA	ND	ND
CBDA	0.00 wt %	0.05 mg/mL
CBGA	ND	ND
<b>Total</b>	<b>1.44 wt%</b>	<b>17.95 mg/mL</b>
<b>Max THC</b>	<b>0.03 wt%</b>	<b>0.43 mg/mL</b>
<b>Max CBD</b>	<b>1.33 wt%</b>	<b>16.60 mg/mL</b>



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:  $\text{Max THC} = (0.877 \times \text{THCA}) + \text{THC}$ . ND = None detected above the limits of detection (LLD)

**HM: Heavy Metal Analysis [WI-10-13]**

Analyst: JFD

Test Date: 12/14/2017

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**24673-HM**

Symbol	Metal	Conc. <sup>1</sup>	Units	MDL	Use Limits <sup>2</sup>		Units	Status
					All	Ingestion		
As	Arsenic	ND	µg/kg	4	200	1500	µg/kg	PASS
Cd	Cadmium	ND	µg/kg	1	200	500	µg/kg	PASS
Hg	Mercury	ND	µg/kg	2	100	1500	µg/kg	PASS
Pb	Lead	60	µg/kg	2	500	1000	µg/kg	PASS

1) ND = None detected to Lowest Limits of Detection (LLD)

2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.

3) USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

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

Analyst: MS

Test Date: 12/14/2017

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**24673-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: matt

Test Date: 12/15/2017

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.

**24673-MB2**

Test ID	Analysis	Results	Units	Limits*	Status
24673-ECPT	E. coli (O157)	Negative	NA	Non Detected	PASS
24673-SPT	Salmonella	Negative	NA	Non Detected	PASS

Note: All recorded pathogenic bacteria tests passed.



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

Analyst: AR

Test Date: 12/19/2017

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**24673-MY**

Test ID	Date	Results	MDL	Limits	Status*
Total Aflatoxin	12/19/2017	< MDL	3 ppb	< 20 ppb	PASS
Total Ochratoxin	12/19/2017	< MDL	2 ppb	< 20 ppb	PASS

**PST: Pesticide Analysis [WI-10-11]**

Analyst: KSB

Test Date: 12/19/2017

The client sample was analyzed for pesticides using Liquid Chromatography with Mass Spectrometric detection (LC/MS/MS). The method used for sample prep was based on the European method for pesticide analysis (EN 15662).

**24673-PST**

Analyte	CAS	Result	Units	LLD	Limits (ppb)	Status
Abamectin	71751-41-2	ND	ppb	0.2	10	PASS
Azoxystrobin	131860-33-8	ND	ppb	0.1	10	PASS
Bifenazate	149877-41-8	ND	ppb	0.1	10	PASS
Bifenthrin	82657-04-3	ND	ppb	0.2	10	PASS
Cyfluthrin	68359-37-5	ND	ppb	0.5	10	*
Daminozide	1596-84-5	ND	ppb	10	10	PASS
Dichlorvos	62-73-7	ND	ppb	3	10	*
Etoxazole	153233-91-1	ND	ppb	0.1	10	PASS
Fenoxycarb	72490-01-8	ND	ppb	0.1	10	PASS
Imazalil	35554-44-0	ND	ppb	0.1	10	PASS
Imidacloprid	138261-41-3	ND	ppb	0.1	10	PASS
Myclobutanil	88671-89-0	ND	ppb	0.1	10	PASS
Paclobutrazol	76738-62-0	ND	ppb	0.1	10	PASS
Piperonyl butoxide	51-03-6	ND	ppb	0.1	10	PASS
Pyrethrin	8003-34-7	ND	ppb	0.1	10	PASS
Spinosad	168316-95-8	ND	ppb	0.1	10	PASS
Spiromesifen	283594-90-1	ND	ppb	0.1	10	PASS
Spirotetramat	203313-25-1	ND	ppb	0.1	10	PASS
Trifloxystrobin	141517-21-7	ND	ppb	0.1	10	PASS

\* Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 5. ND indicates "none detected" above the lower limit of detection (LLD). Analytes marked with (\*) indicate analytes for which no recovery was observed for a pre-spiked matrix sample.

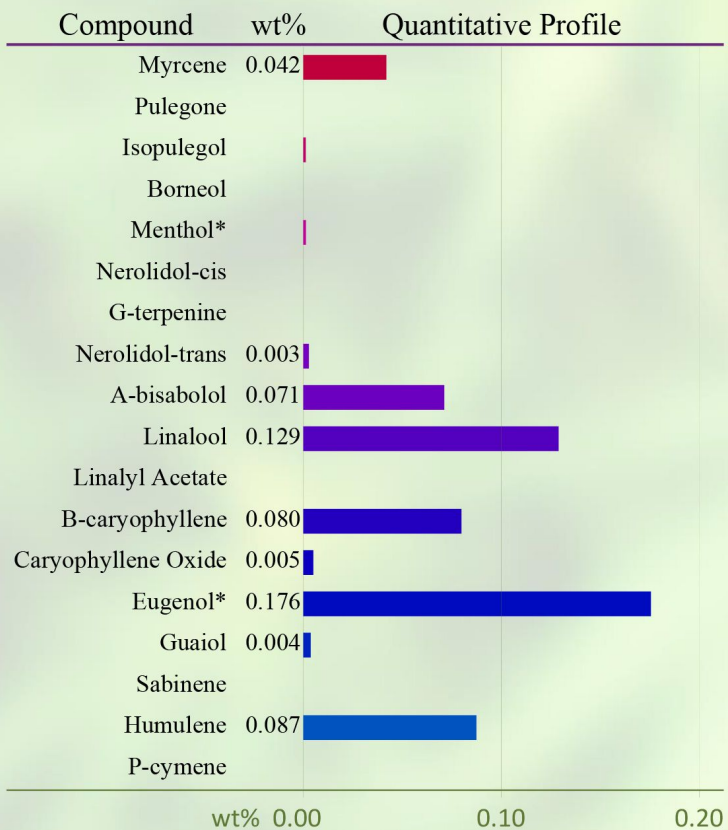
**TP: Terpenes Profile [WI-10-08]**

Analyst: CJH

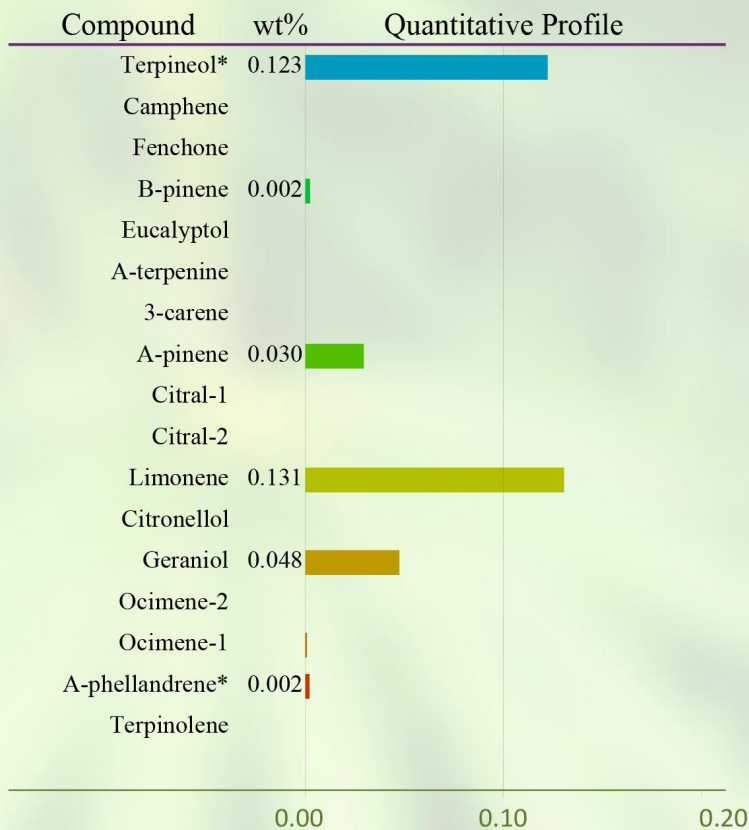
Test Date: 12/16/2017

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.

**24673-TP**



Total Terpene: 0.9 wt%



\* Indicates qualitative calculation based on recorded peak areas.



**VC: Analysis of Volatile Organic Compounds [WI-10-07]**

Analyst: CJH

Test Date: 12/16/2017

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.

**24673-VC**

Compound	CAS	Amount <sup>1</sup>	Limit <sup>2</sup>	Status
Propane	74-98-6	ND	N/A	-
Butane	106-97-8	ND	5,000 ppm	PASS
Methanol	67-56-1	ND	3,000 ppm	PASS
Pentane	109-66-0	ND	5,000 ppm	PASS
Ethanol	64-17-5	ND	5,000 ppm	PASS
Ethyl Ether	60-29-7	ND	5,000 ppm	PASS
2,2-dimethylbutane		ND	N/A	-
Acetone	67-64-1	ND	5,000 ppm	PASS
Isopropanol	67-63-0	ND	5,000 ppm	PASS
Acetonitrile	75-05-8	ND	410 ppm	PASS
Hexane	110-54-3	ND	290 ppm	PASS

1) ND = None detected above 5 ppm.

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

**END OF REPORT**