

Certificate ID: **24870-49**

Received: **12/18/17**

Client Sample ID: **620-19-09**



Lot Number:

Matrix: **Concentrates/Extracts - Alcohol**

Authorization:

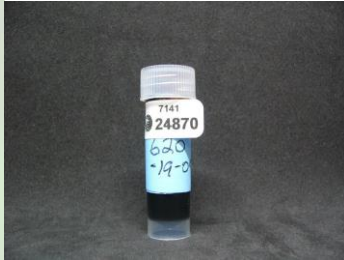
Matthew Silva, Chemical Engineer

Signature:



Date:

6/15/2018



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: **JDP**

Test Date: **12/26/2017**

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.

24870-CN

ID	Weight %	Conc.		
Δ9-THC	2.80 wt %	28.01 mg/g		
THCV	ND	ND		
CBD	65.40 wt %	653.98 mg/g		
CBDV	0.54 wt %	5.38 mg/g		
CBG	3.96 wt %	39.58 mg/g		
CBC	5.13 wt %	51.28 mg/g		
CBN	ND	ND		
THCA	ND	ND		
CBDA	ND	ND		
CBGA	ND	ND		
Total	77.82 wt%	778.23 mg/g	0%	Cannabinoids (wt%) 65.4%
Max THC	2.80 wt%	28.01 mg/g		
Max CBD	65.40 wt%	653.98 mg/g		

Ratio of Total CBD to THC 23.4:1

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

EA: Elemental Analysis [WI-10-13]

Analyst: JFD

Test Date: 12/21/2017

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24870-EA

Symbol	Metal	Conc. ¹	MDL	Limits ²	Status
Al	Aluminum	1,419 ug/kg	5 ug/kg	-	
As	Arsenic	4 ug/kg	4 ug/kg	15000 ug/kg	PASS
Cd	Cadmium	9 ug/kg	1 ug/kg	5000 ug/kg	PASS
Ca	Calcium	22,080 ug/kg	500 ug/kg	-	
Cr	Chromium	55 ug/kg	5 ug/kg	45000 ug/kg	PASS
Co	Cobalt	ND	10 ug/kg	-	
Cu	Copper	1,279 ug/kg	500 ug/kg	3100000 ug/kg	PASS
Fe	Iron	3,073 ug/kg	5 ug/kg	-	
Pb	Lead	96 ug/kg	2 ug/kg	400000 ug/kg	PASS
Mg	Magnesium	52,429 ug/kg	500 ug/kg	-	
Mn	Manganese	808 ug/kg	500 ug/kg	-	
Hg	Mercury	4 ug/kg	2 ug/kg	9400 ug/kg	PASS
Mo	Molybdenum	ND	5000 ug/kg	-	
Ni	Nickel	ND	500 ug/kg	1500000 ug/kg	PASS
P	Phosphorus	44,370 ug/kg	500 ug/kg	-	
K	Potassium	672,903 ug/kg	5 ug/kg	-	
Se	Selenium	17 ug/kg	10 ug/kg	-	
Ag	Silver	ND	10 ug/kg	-	
S	Sulfur	ND	5 ug/kg	-	
Sn	Tin	ND	5000 ug/kg	-	
Zn	Zinc	2,282 ug/kg	5 ug/kg	15000 ug/kg	PASS

MB1: Microbiological Contaminants [WI-10-09]

Analyst: alyson

Test Date: 12/19/2017

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24870-MB1

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.

MB2: Pathogenic Bacterial Contaminants [WI-10-10]*Analyst: matt**Test Date: 12/20/2017*

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.

24870-MB2

Test ID	Analysis	Results	Units	Limits*	Status
24870-ECPT	E. coli (O157)	Negative	NA	Non Detected	PASS
24870-SPT	Salmonella	Negative	NA	Non Detected	PASS

Note: All recorded pathogenic bacteria tests passed.

MY: Mycotoxin Testing [WI-10-05]*Analyst: AR**Test Date: 12/20/2017*

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.

24870-MY

Test ID	Date	Results	MDL	Limits	Status*
Total Aflatoxin	12/20/2017	< MDL	3 ppb	< 20 ppb	PASS
Total Ochratoxin	12/20/2017	3.4	2 ppb	< 20 ppb	PASS

PST: Pesticide Analysis [WI-10-11]*Analyst: KSB**Test Date: 12/20/2017*

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).

24870-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	*
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.

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.

24870-VC

Compound	CAS	Amount ¹	Limit ²	Status
Propane	74-98-6	ND	N/A	-
Butane	106-97-8	ND	5,000 ppm	PASS
Methanol	67-56-1	51 ppm	3,000 ppm	PASS
Ethanol	64-17-5	9,073 ppm	5,000 ppm	FAIL
Acetone	67-64-1	54 ppm	5,000 ppm	PASS
Isopropanol	67-63-0	11 ppm	5,000 ppm	PASS
Acetonitrile	75-05-8	ND	410 ppm	PASS
Hexane	110-54-3	ND	290 ppm	PASS
2-butanol	78-92-2	40 ppm	5,000 ppm	PASS
1-butanol	71-36-3	ND	5,000 ppm	PASS
Toluene	108-88-3	ND	890 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