CERTIFICATE OF ANALYSIS

REPORTED TO	BC Hop Co 1905 Cole Rd Abbotsford, BC V3G 1T3		
ATTENTION	Leila Tarjoman	**WORK ORDER**	21B2382
PO NUMBER		**RECEIVED / TEMP**	2021-02-23 13:50 / NA
PROJECT	Cannabis Testing	**REPORTED**	2021-03-02 16:02
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at pmand@caro.ca

Authorized By:

Brent Coates
Director of Operations

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	BC Hop Co	**WORK ORDER**	21B2382
PROJECT	Cannabis Testing	**REPORTED**	2021-03-02 16:02

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
20BTP (21B2382-01) | Matrix: Cannabis Dry Flower | Sampled: 2021-02-22						
Calculated Parameters						
Total CBD	**11.2**	N/A		% (wt/wt)	N/A	
Total THC	**0.345**	N/A		% (wt/wt)	N/A	
Potency						
Cannabidiolic Acid (CBDA)	**12.5**	N/A	0.5	% (wt/wt)	2021-03-02	
Cannabidiol (CBD)	**0.2**	N/A	0.1	% (wt/wt)	2021-03-02	
Cannabinol (CBN)	< 0.1	N/A	0.1	% (wt/wt)	2021-03-02	
delta9-THC	< 0.1	N/A	0.1	% (wt/wt)	2021-03-02	
Tetrahydrocannabinolic Acid (THCA)	**0.4**	N/A	0.1	% (wt/wt)	2021-03-02	

Date : October 14, 2021

Certificate of Analysis – GC Profiling (Main terpenes)

Sample identification

Internal code : 21J07-BCH01
Customer identification : 20BTP
Type : Plant material
Source : *Cannabis sativa*
Customer : BC Hop Company

Analysis

Method: Extraction of plant material with pentane, and addition of a methyl octanoate internal standard for quantitation. Application of a correction factor[1]. Analysis with PC-MAT-004 - Terpenes and volatiles profiling by response factor (in French); identifications validated by GC-MS.
Analyst : Seydou Ka, Ph. D.
Analysis date : October 08, 2021

Checked and approved by :

Alexis St-Gelais, M. Sc., Chimiste 2013-174

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia. This report is digitally signed, it is only considered valid if the digital signature is intact. The results only describe the samples that were submitted to the assays.

Reference

(1) Cachet, T.; Brevard, H.; Chaintreau, A.; Demyttenaere, J.; French, L.; Gassenmeier, K.; Joulain, D.; Koenig, T.; Leijs, H.; Liddle, P.; et al. IOFI Recommended Practice for the Use of Predicted Relative-Response Factors for the Rapid Quantification of Volatile Flavouring *Compounds by GC-FID. Flavour Fragr. J. 2016, 31 (3), 191–194.*

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PHYSICOCHEMICAL DATA

Moisture content: 12.7% (method PC-MAT-024)

Results below are expressed on the basis of dry plant material mass. Dry (anhydrous) mass is reported by taking into account the loss of mass of the plant dried at 105 °C for several hours. Results are therefore independant of the sample's residual moisture.

ANALYSIS SUMMARY

Identification	(mg/g)	Classe
Hexanol	0.09	Aliphatic alcohol
Hashishene	0.01	Monoterpene
α-Thujene	0.02	Monoterpene
α-Pinene	0.24	Monoterpene
Camphene	0.01	Monoterpene
α-Fenchene	tr	Monoterpene
β-Pinene	0.15	Monoterpene
Sabinene	0.02	Monoterpene
Myrcene	0.49	Monoterpene
α-Phellandrene	0.02	Monoterpene
Δ3-Carene	0.02	Monoterpene
α-Terpinene	tr	Monoterpene
para-Cymene	0.02	Monoterpene
Limonene	0.15	Monoterpene
β-Phellandrene	0.02	Monoterpene
1,8-Cineole	0.03	Monoterpenic ether
(*Z*)-β-Ocimene	tr	Monoterpene
(*E*)-β-Ocimene	0.02	Monoterpene
γ-Terpinene	0.02	Monoterpene
cis-Sabinene hydrate	0.02	Monoterpenic alcohol
Octanol	0.01	Aliphatic alcohol
Fenchone	0.02	Monoterpenic ketone
para-Cymenene	0.01	Monoterpene
Terpinolene	0.16	Monoterpene
trans-Sabinene hydrate	0.02	Monoterpenic alcohol
Linalool	0.15	Monoterpenic alcohol
endo-Fenchol	0.09	Monoterpenic alcohol
trans-Pinene hydrate	0.07	Monoterpenic alcohol
cis-Pinene hydrate	0.01	Monoterpenic alcohol
Camphene hydrate	tr	Monoterpenic alcohol
Epoxyterpinolene	0.04	Monoterpenic ether
Ipsdienol	0.02	Monoterpenic alcohol
Borneol	0.03	Monoterpenic alcohol
Terpinen-4-ol	0.02	Monoterpenic alcohol
Unknown	0.05	Oxygenated monoterpene
para-Cymen-8-ol	0.06	Monoterpenic alcohol
α-Terpineol	0.09	Monoterpenic alcohol

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Hexyl butyrate	0.02	Aliphatic ester
Citronellol	0.01	Monoterpenic alcohol
Decanol	0.02	Aliphatic alcohol
α-Cubebene	tr	Sesquiterpene
α-Ylangene	0.01	Sesquiterpene
Hexyl hexanoate	0.01	Aliphatic ester
β-Caryophyllene	1.73	Sesquiterpene
α-Santalene	tr	Sesquiterpene
trans-α-Bergamotene	0.07	Sesquiterpene
α-Guaiene	[0.07]	Sesquiterpene
α-Humulene	0.60	Sesquiterpene
allo-Aromadendrene	0.01	Sesquiterpene
(*E*)-β-Farnesene	0.09	Sesquiterpene
Unknown	0.07	Sesquiterpene
β-Selinene	0.04	Sesquiterpene
α-Selinene	0.03	Sesquiterpene
Valencene	0.07	Sesquiterpene
δ-Guaiene	0.02	Sesquiterpene
β-Bisabolene	0.25	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	0.11	Sesquiterpene
Spirovetiva-1(10),7(11)-diene	0.03	Sesquiterpene
Eremophila-1(10),7(11)-diene	[0.03]	Sesquiterpene
Selina-4(15),7(11)-diene	0.04	Sesquiterpene
Selina-4,7(11)-diene?	0.02	Sesquiterpene
Selina-3,7(11)-diene	tr	Sesquiterpene
(*E*)-α-Bisabolene	0.25	Sesquiterpene
Germacrene B	tr	Sesquiterpene
Eudesma-5,7(11)-diene	0.01	Sesquiterpene
(*E*)-Nerolidol	0.08	Sesquiterpenic alcohol
Caryophyllene oxide	0.48	Sesquiterpenic ether
Guaiol	0.66	Sesquiterpenic alcohol
Humulene epoxide II	0.21	Sesquiterpenic ether
Selin-6-en-4α-ol isomer	0.04	Sesquiterpenic alcohol
10-epi-γ-Eudesmol	0.67	Sesquiterpenic alcohol
Selin-6-en-4α-ol	0.02	Sesquiterpenic alcohol
γ-Eudesmol	0.15	Sesquiterpenic alcohol
β-Eudesmol	0.35	Sesquiterpenic alcohol
α-Eudesmol	0.37	Sesquiterpenic alcohol
Bulnesol	0.53	Sesquiterpenic alcohol
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	0.12	Sesquiterpenic alcohol
α-Bisabolol	1.42	Sesquiterpenic alcohol
Juniper camphor	0.06	Sesquiterpenic alcohol
Aromadendrane-4,10-diol	0.01	Sesquiterpenic alcohol
(2*E*,6*E*)-Farnesol	0.02	Sesquiterpenic alcohol
Cryptomeridiol	0.07	Sesquiterpenic alcohol
meta-Camphorene	0.01	Diterpene
Phytol	0.16	Diterpenic alcohol
Consolidated total	**11.16 mg/g**	

*: Individual compounds concentration could not be found due to overlapping coelutions on columns considered
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total
tr : < 0.005 mg/g

Individual compounds contents were corrected following the method of Cachet et al., 2016 (Flavour and Fragrance Journal guidelines).
Unknown compounds are expressed in equivalents of internal standard without correction.

About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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