

Certificate ID: 91078

Received: 12/24/20

Client Sample ID: Hawaiian Haze

Lot Number: 122020

Matrix: Flowers/Bud - Dry Flower

Scan QR Code for authenticity CANNAFLOWER

40 University Way, Unit 40 Brattleboro, VT 05301

Attn: Perrin

Authorization:

Signature:

Chris Hudalla, Chief Science Officer

Christophen Hudalla

Date:

1/7/2021







PJLA Testing
Accreditation
# 80585

The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. 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-10-17 & WI-10-17-01]

Analyst: JFD

Test Date: 1/1/2021

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

## 91078-CN

ID	Weight %	Concentration (mg/g)	
D9-THC	0.190	1.90	
THCV	ND	ND	
CBD	1.73	17.3	
CBDV	ND	ND	
CBG	ND	ND	
CBC	0.149	1.49	
CBN	ND	ND	
THCA	0.490	4.90	
CBDA	18.5	185	
CBGA	0.644	6.44	
D8-THC	ND	ND	
exo-THC	ND	ND	
Total	21.7	217 0%	6 Cannabinoids (wt%) 18.5%
Max THC	0.620	6.20	Limit of Quantitation (LOQ) = 0.0067 wt%
Max CBD	18.0	180	Limit of Detection (LOD) = $0.0022 \text{ wt}\%$

Ratio of Total CBD to THC 29.0:1

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 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LOD), which is one third of LOQ.

## TP: Terpenes Profile [WI-10-27]

Analyst: AEG

*Test Date: 12/29/2020* 

Client sample analysis was performed using full evaporative technique (FET) headspace sample delivery and gas chromatographic (GC) compound separation. A combination of flame ionization detection (FID) and/or mass spectrometric (MS) detection with mass spectral confirmation against the National Institute of Standards and Technology (NIST) Mass Spectral Database, Revision 2017 were used. Chromatographic and/or mass spectral data were processed by quantitatively comparing the analytical peak areas against calibration curves prepared from certified reference standards.

91078-TP

Compound         CAS         Conc. (wt%)         Conc. (ppm)         Qualitative Profile           alpha pinene         80-56-8         0.115         1,150           camphene         79-92-5         0.0042         41.6           sabinene*         3387-41-5         ND         ND           beta-myrcene         123-35-3         0.589         5,890           beta-pinene         127-91-3         0.0579         579           alpha-phellandrene         99-83-2         0.0010         9.61           delta-3-carene         13466-78-9         ND         ND           alpha-terpinene         99-86-5         0.0005         5.16           alpha-coimene         502-99-8         0.0012         11.5           D-limonene         138-86-3         0.118         1,180           p-cymene         99-87-6         ND         ND           cis-beta-ocimene         3338-55-4         0.0348         348           eucalyptol         470-82-6 <rl< td=""> <rl< td="">           gamma-terpinene         99-85-4         0.0007         7.27           terpinolene         586-62-9         0.0016         16.4           linalool         78-70-6         0.0734</rl<></rl<>	,				
camphene         79-92-5         0.0042         41.6           sabinene*         3387-41-5         ND         ND           beta-myrcene         123-35-3         0.589         5,890           beta-pinene         127-91-3         0.0579         579           alpha-phellandrene         99-83-2         0.0010         9.61           delta-3-carene         13466-78-9         ND         ND           alpha-terpinene         99-86-5         0.0005         5.16           alpha-ccimene         502-99-8         0.0012         11.5           D-limonene         138-86-3         0.118         1,180           p-cymene         99-87-6         ND         ND           cis-beta-ocimene         3338-55-4         0.0348         348           eucalyptol         470-82-6 <rl< td=""> <rl< td="">           gamma-terpinene         99-85-4         0.0007         7.27           terpinolene         586-62-9         0.0016         16.4           linalool         78-70-6         0.0734         734           L-fenchone*         7787-20-4         0.0050         50.2           isopulegol         89-78-1         ND         ND           ment</rl<></rl<>	Compound	CAS	Conc. (wt%)	Conc. (ppm)	Qualitative Profile
sabinene*         3387-41-5         ND         ND           beta-myrcene         123-35-3         0.589         5,890           beta-pinene         127-91-3         0.0579         579           alpha-phellandrene         99-83-2         0.0010         9.61           delta-3-carene         13466-78-9         ND         ND           alpha-terpinene         99-86-5         0.0005         5.16           alpha-ocimene         502-99-8         0.0012         11.5           D-limonene         138-86-3         0.118         1,180           p-cymene         99-87-6         ND         ND           cis-beta-ocimene         3338-55-4         0.0348         348           eucalyptol         470-82-6 <rl< td=""> <rl< td="">           gamma-terpinene         99-85-4         0.0007         7.27           terpinolene         586-62-9         0.0016         16.4           linalool         78-70-6         0.0734         734           L-fenchone*         7787-20-4         0.0050         50.2           isopulegol         89-79-2         ND         ND           menthol*         89-78-1         ND         ND           peraniol<!--</td--><td>alpha-pinene</td><td>80-56-8</td><td>0.115</td><td>1,150</td><td></td></rl<></rl<>	alpha-pinene	80-56-8	0.115	1,150	
beta-myrcene 123-35-3 0.589 5,890   beta-pinene 127-91-3 0.0579 579   alpha-phellandrene 99-83-2 0.0010 9.61   delta-3-carene 13466-78-9 ND ND   alpha-terpinene 99-86-5 0.0005 5.16   alpha-ocimene 502-99-8 0.0012 11.5   D-limonene 138-86-3 0.118 1,180   p-cymene 99-87-6 ND ND   cis-beta-ocimene 3338-55-4 0.0348 348   eucalyptol 470-82-6 < <rl< td=""><td>camphene</td><td>79-92-5</td><td>0.0042</td><td>41.6</td><td></td></rl<>	camphene	79-92-5	0.0042	41.6	
beta-pinene 127-91-3 0.0579 579 alpha-phellandrene 99-83-2 0.0010 9.61 delta-3-carene 13466-78-9 ND ND alpha-terpinene 99-86-5 0.0005 5.16 alpha-ocimene 502-99-8 0.0012 11.5 D-limonene 138-86-3 0.118 1,180 p-cymene 99-87-6 ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 <rl 0.0007="" 0.0016="" 0.0050="" 0.0057="" 0.0200="" 0.0337="" 0.0734="" 106-24-1="" 1139-30-6="" 16.4="" 200="" 23089-26-1="" 337<="" 3790-78-1="" 40716-66-3="" 489-86-1="" 50.2="" 56.7="" 586-62-9="" 7.27="" 734="" 7787-20-4="" 78-70-6="" 89-78-1="" 89-79-2="" 99-85-4="" <rl="" alpha-bisabolol="" caryophyllene="" gamma-terpinene="" isopulegol="" l-fenchone*="" linalool="" menthol*="" nd="" oxide="" speraniol="" td="" terpinolene="" trans-nerolidol=""><td>sabinene*</td><td>3387-41-5</td><td>ND</td><td>ND</td><td></td></rl>	sabinene*	3387-41-5	ND	ND	
alpha-phellandrene 99-83-2 0.0010 9.61 delta-3-carene 13466-78-9 ND ND alpha-terpinene 99-86-5 0.0005 5.16 alpha-ocimene 502-99-8 0.0012 11.5 D-limonene 138-86-3 0.118 1,180 p-cymene 99-87-6 ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 ≺RL ≺RL gamma-terpinene 99-85-4 0.0007 7.27 terpinolene 586-62-9 0.0016 16.4 limalool 78-70-6 0.0734 734 L-fenchone* 7787-20-4 0.0050 50.2 isopulegol 89-79-2 ND ND ND menthol* 89-78-1 ND ND ND menthol* 89-78-1 ND ND ND geraniol 106-24-1 ND ND ND seraniol 106-24-1 ND ND ND seraniol 106-24-1 ND ND ND trans-nerolidol 3790-78-1 ND ND ND ND trans-nerolidol 40716-66-3 ND ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337   □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	beta-myrcene	123-35-3	0.589	5,890	
delta-3-carene         13466-78-9         ND         ND           alpha-terpinene         99-86-5         0.0005         5.16           alpha-ocimene         502-99-8         0.0012         11.5           D-limonene         138-86-3         0.118         1,180           p-cymene         99-87-6         ND         ND           cis-beta-ocimene         3338-55-4         0.0348         348           eucalyptol         470-82-6 <rl< td=""> <rl< td="">           gamma-terpinene         99-85-4         0.0007         7.27           terpinolene         586-62-9         0.0016         16.4           linalool         78-70-6         0.0734         734           L-fenchone*         7787-20-4         0.0050         50.2           isopulegol         89-79-2         ND         ND           menthol*         89-78-1         ND         ND           geraniol         106-24-1         ND         ND           beta-caryophyllene         87-44-5         0.377         3,770           alpha-humulene         6753-98-6         0.121         1,210           cis-nerolidol         40716-66-3         ND         ND           no</rl<></rl<>	beta-pinene	127-91-3	0.0579	579	
alpha-terpinene 99-86-5 0.0005 5.16 alpha-ocimene 502-99-8 0.0012 11.5 D-limonene 138-86-3 0.118 1,180 p-cymene 99-87-6 ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 <rl 0.0007="" 0.0016="" 0.0050="" 0.0057="" 0.0200="" 0.0337="" 0.0734="" 0.121="" 0.377="" 1,210="" 106-24-1="" 1139-30-6="" 16.4="" 200="" 23089-26-1="" 3,770="" 337<="" 3790-78-1="" 40716-66-3="" 489-86-1="" 50.2="" 56.7="" 586-62-9="" 6753-98-6="" 7.27="" 734="" 7787-20-4="" 78-70-6="" 87-44-5="" 89-78-1="" 89-79-2="" 99-85-4="" <rl="" alpha-bisabolol="" alpha-humulene="" beta-caryophyllene="" caryophyllene="" cis-nerolidol="" gamma-terpinene="" geraniol="" guaiol="" isopulegol="" l-fenchone*="" linalool="" menthol*="" nd="" oxide="" td="" terpinolene="" trans-nerolidol=""><td>alpha-phellandrene</td><td>99-83-2</td><td>0.0010</td><td>9.61</td><td></td></rl>	alpha-phellandrene	99-83-2	0.0010	9.61	
alpha-ocimene 502-99-8 0.0012 11.5 D-limonene 138-86-3 0.118 1,180 p-cymene 99-87-6 ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 < RL gamma-terpinene 99-85-4 0.0007 7.27 terpinolene 586-62-9 0.0016 16.4 linalool 78-70-6 0.0734 734 L-fenchone* 7787-20-4 0.0050 50.2 lisopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	delta-3-carene	13466-78-9	ND	ND	
D-limonene 138-86-3 0.118 1,180 p-cymene 99-87-6 ND ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 < RL < RL gamma-terpinene 99-85-4 0.0007 7.27 terpinolene 586-62-9 0.0016 16.4 linalool 78-70-6 0.0734 734 L-fenchone* 7787-20-4 0.0050 50.2 sopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	alpha-terpinene	99-86-5	0.0005	5.16	
p-cymene 99-87-6 ND ND ND cis-beta-ocimene 3338-55-4 0.0348 348 eucalyptol 470-82-6 <rl 0.0007="" 0.0016="" 0.0050="" 0.0057="" 0.0200="" 0.0337="" 0.0734="" 0.121="" 0.377="" 1,210="" 106-24-1="" 1139-30-6="" 16.4="" 200="" 23089-26-1="" 3,770="" 337<="" 3790-78-1="" 40716-66-3="" 489-86-1="" 50.2="" 56.7="" 586-62-9="" 6753-98-6="" 7.27="" 734="" 7787-20-4="" 78-70-6="" 87-44-5="" 89-78-1="" 89-79-2="" 99-85-4="" <rl="" alpha-bisabolol="" alpha-humulene="" beta-caryophyllene="" caryophyllene="" cis-nerolidol="" gamma-terpinene="" geraniol="" guaiol="" l-fenchone*="" linalool="" menthol*="" nd="" oxide="" sopulegol="" td="" terpinolene="" trans-nerolidol=""><td>alpha-ocimene</td><td>502-99-8</td><td>0.0012</td><td>11.5</td><td></td></rl>	alpha-ocimene	502-99-8	0.0012	11.5	
cis-beta-ocimene       3338-55-4       0.0348       348         eucalyptol       470-82-6 <rl< td=""> <rl< td="">         gamma-terpinene       99-85-4       0.0007       7.27         terpinolene       586-62-9       0.0016       16.4         linalool       78-70-6       0.0734       734         L-fenchone*       7787-20-4       0.0050       50.2         isopulegol       89-79-2       ND       ND         menthol*       89-78-1       ND       ND         geraniol       106-24-1       ND       ND         beta-caryophyllene       87-44-5       0.377       3,770         alpha-humulene       6753-98-6       0.121       1,210         cis-nerolidol       3790-78-1       ND       ND         trans-nerolidol       40716-66-3       ND       ND         guaiol       489-86-1       0.0200       200         caryophyllene oxide       1139-30-6       0.0057       56.7         alpha-bisabolol       23089-26-1       0.0337       337</rl<></rl<>	D-limonene	138-86-3	0.118	1,180	
eucalyptol       470-82-6 <rl< td=""> <rl< td="">         gamma-terpinene       99-85-4       0.0007       7.27         terpinolene       586-62-9       0.0016       16.4         linalool       78-70-6       0.0734       734         L-fenchone*       7787-20-4       0.0050       50.2         isopulegol       89-79-2       ND       ND         menthol*       89-78-1       ND       ND         geraniol       106-24-1       ND       ND         beta-caryophyllene       87-44-5       0.377       3,770         alpha-humulene       6753-98-6       0.121       1,210         cis-nerolidol       3790-78-1       ND       ND         trans-nerolidol       40716-66-3       ND       ND         guaiol       489-86-1       0.0200       200         caryophyllene oxide       1139-30-6       0.0057       56.7         alpha-bisabolol       23089-26-1       0.0337       337</rl<></rl<>	p-cymene	99-87-6	ND	ND	
gamma-terpinene 99-85-4 0.0007 7.27  terpinolene 586-62-9 0.0016 16.4  linalool 78-70-6 0.0734 734  L-fenchone* 7787-20-4 0.0050 50.2  isopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770  alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	cis-beta-ocimene	3338-55-4	0.0348	348	
terpinolene 586-62-9 0.0016 16.4 linalool 78-70-6 0.0734 734 L-fenchone* 7787-20-4 0.0050 50.2 lisopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	eucalyptol	470-82-6	<rl< td=""><td><rl< td=""><td></td></rl<></td></rl<>	<rl< td=""><td></td></rl<>	
linalool 78-70-6 0.0734 734  L-fenchone* 7787-20-4 0.0050 50.2 isopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	gamma-terpinene	99-85-4	0.0007	7.27	
L-fenchone* 7787-20-4 0.0050 50.2 isopulegol 89-79-2 ND ND ND menthol* 89-78-1 ND ND ND geraniol 106-24-1 ND ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND ND trans-nerolidol 40716-66-3 ND ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	terpinolene	586-62-9	0.0016	16.4	
isopulegol 89-79-2 ND ND menthol* 89-78-1 ND ND geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	linalool	78-70-6	0.0734	734	
menthol*         89-78-1         ND         ND           geraniol         106-24-1         ND         ND           beta-caryophyllene         87-44-5         0.377         3,770           alpha-humulene         6753-98-6         0.121         1,210           cis-nerolidol         3790-78-1         ND         ND           trans-nerolidol         40716-66-3         ND         ND           guaiol         489-86-1         0.0200         200           caryophyllene oxide         1139-30-6         0.0057         56.7           alpha-bisabolol         23089-26-1         0.0337         337	L-fenchone*	7787-20-4	0.0050	50.2	
geraniol 106-24-1 ND ND beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	isopulegol	89-79-2	ND	ND	
beta-caryophyllene 87-44-5 0.377 3,770 alpha-humulene 6753-98-6 0.121 1,210 cis-nerolidol 3790-78-1 ND ND trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	menthol*	89-78-1	ND	ND	
alpha-humulene       6753-98-6       0.121       1,210         cis-nerolidol       3790-78-1       ND       ND         trans-nerolidol       40716-66-3       ND       ND         guaiol       489-86-1       0.0200       200         caryophyllene oxide       1139-30-6       0.0057       56.7         alpha-bisabolol       23089-26-1       0.0337       337	geraniol	106-24-1	ND	ND	
cis-nerolidol       3790-78-1       ND       ND         trans-nerolidol       40716-66-3       ND       ND         guaiol       489-86-1       0.0200       200         caryophyllene oxide       1139-30-6       0.0057       56.7         alpha-bisabolol       23089-26-1       0.0337       337	beta-caryophyllene	87-44-5	0.377	3,770	
trans-nerolidol 40716-66-3 ND ND guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	alpha-humulene	6753-98-6	0.121	1,210	
guaiol 489-86-1 0.0200 200 caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	cis-nerolidol	3790-78-1	ND	ND	
caryophyllene oxide 1139-30-6 0.0057 56.7 alpha-bisabolol 23089-26-1 0.0337 337	trans-nerolidol	40716-66-3	ND	ND	
alpha-bisabolol 23089-26-1 0.0337 337	guaiol	489-86-1	0.0200	200	
	caryophyllene oxide	1139-30-6	0.0057	56.7	
wt% 0.00 0.50 1.	alpha-bisabolol	23089-26-1	0.0337	337	
		Barrier L		wt% 0.	.00 0.50 1.

Total Terpene: 1.6 wt%

## END OF REPORT

<sup>\*</sup> Certified reference standard not available for this compound. Concentration is estimated using the response factor from alpha-pinene. ND = None Detected. RL = Reporting Limit of 5 ppm.