

HIGH NORTH ID:  
00065252  
Date: 2021-07-14  
Certificate: 1626289098



High North Inc.  
241 Hanlan Rd, Unit 7  
Woodbridge, ON, L4L 3R7  
LIC-P4PNJMAC20-2019

Client: Protected for Privacy Reasons

Strain: F1-13  
Lot: V21-02  
Matrix: Flower  
Sub-matrix: Dried Flower  
Sampled: 2021-07-07  
Received: 2021-07-08

## Certificate of Analysis

<b>Cannabinoid Analysis</b>	LOD (%)	LOQ (%)	wt%	mg/g
Total THC [(THCA x 0.877) + D9-THC]			23.149	231.494
Total CBD [(CBDA x 0.877) + CBD]			0.117	1.169
THCA-A	0.0090	0.03	26.162	261.619
CBGA	0.0041	0.03	0.526	5.256
CBG	0.0094	0.03	0.418	4.179
D9-THC	0.0093	0.03	0.205	2.054
CBDA	0.0100	0.03	0.133	1.333
D8-THC	0.0137	0.03	ND	ND
CBC	0.0060	0.03	ND	ND
CBN	0.0067	0.03	ND	ND
CBD	0.0069	0.03	ND	ND
THCV	0.0093	0.03	ND	ND
CBDV	0.0090	0.03	ND	ND
<b>Total of all quantified cannabinoids:</b>			27.444	274.441

<b>Terpene Analysis</b>	LOD (%)	LOQ (%)	wt%
Trans-Caryophyllene	0.0001	0.01	0.399
(R)-(+)-Limonene	0.0001	0.01	0.257
beta-Myrcene	0.0001	0.01	0.256
Farnesene-2	0.0001	0.01	0.163
alpha-Humulene	0.0001	0.01	0.106
Linalool	0.0001	0.01	0.063
alpha-Bisabolol	0.0001	0.01	0.054
Terpineol (mix of isomers)	0.0001	0.01	0.054
beta-Pinene	0.0001	0.01	0.053
(R)-Endo-(+)-Fenchyl	0.0001	0.01	0.037
alpha-Pinene	0.0001	0.01	0.037

Abbreviations: wt% = percentage of weight, CFU = colony forming units, ppm = Parts per million, ppb = Parts per billion, ND = None Detected, BLQ = Below Limit of Quantification, LOQ = Limit of Quantification, LOD = Limit of Detection, RL = Reporting Limit

Authorized by:

Ryan Lee  
Quality Assurance

<b>Terpene Analysis</b>	LOD (%)	LOQ (%)	wt%
trans-Nerolidol	0.0001	0.01	0.02
Camphene	0.0001	0.01	0.011
Phytol	0.0001	0.06	BLQ
Caryophyllene oxide	0.0001	0.01	BLQ
Eucalyptol	0.0001	0.01	BLQ
trans-beta-Ocimene	0.0001	0.01	BLQ
Terpinolene	0.0001	0.01	BLQ
Geraniol	0.0001	0.01	BLQ
Fenchone (mix of isomers)	0.0001	0.01	BLQ
Sabinene Hydrate	0.0001	0.01	BLQ
gamma-Terpinene	0.0001	0.01	BLQ
(+)-Cedrol	0.0001	0.01	ND
Guaiol	0.0001	0.01	ND
Valencene	0.0001	0.01	ND
cis-Nerolidol	0.0001	0.01	ND
Eugenol	0.0001	0.01	ND
Pulegone	0.0001	0.01	ND
Geraniol acetate	0.0001	0.01	ND
alpha-Cedrene	0.0001	0.01	ND
Citronellol	0.0001	0.01	ND
Nerol	0.0001	0.01	ND
gamma-Terpineol	0.0001	0.01	ND
Camphor (mix of isomers)	0.0001	0.01	ND
Isopulegol	0.0001	0.01	ND
Hexahydrothymol	0.0001	0.01	ND
Isoborneol	0.0001	0.01	ND
Ocimene (mixture of	0.0001	0.01	ND
p-Isopropyltoluene (p-	0.0001	0.01	ND
(1S)-3-Carene	0.0001	0.01	ND
alpha-Phellandrene	0.0001	0.01	ND
alpha-Terpinene	0.0001	0.01	ND
Sabinene	0.0001	0.01	ND
<b>Total of all quantified terpenes:</b>			1.510

**Moisture Analysis** 10.29%

Abbreviations: wt% = percentage of weight, CFU = colony forming units, ppm = Parts per million, ppb = Parts per billion, ND = None Detected, BLQ = Below Limit of Quantification, LOQ = Limit of Quantification, LOD = Limit of Detection, RL = Reporting Limit

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<b>Mycotoxin Analysis</b>	LOD (ppb)	LOQ (ppb)	RL (ppb)	Result (ppb)	
Aflatoxin-B1	1.0	2	2	ND	PASS
Aflatoxin-B2	0.9	2		ND	PASS
Aflatoxin-G1	0.7	2		ND	PASS
Aflatoxin-G2	1.0	2		ND	PASS
<b>Sum of Aflatoxins:</b>			4	0	PASS
Ochratoxin-A	8.7	20	20	ND	PASS

<b>Microbial Analysis</b>	RL (CFU/g)	Result (CFU/g)	Status
Total Aerobic Count	100,000	ND	PASS
Total Yeast and Mold Count	1,000	18	PASS
Bile-Tolerant Gram-Negative E.coli/Salmonella	1,000	ND Absent	PASS PASS

<b>Heavy Metals Analysis</b>	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Arsenic	0.05	0.2	0.2	ND	PASS
Cadmium	0.01	0.05	0.3	0.1623	PASS
Lead	0.02	0.5	0.5	ND	PASS
Mercury	0.01	0.05	0.1	ND	PASS

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<b>Pesticides Analysis</b>	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Abamectin	0.0057	0.1	0.1	ND	PASS
Acephate	0.0100	0.02	0.02	ND	PASS
Acequinocyl	0.0115	0.03	0.03	ND	PASS
Acetamiprid	0.0017	0.1	0.1	ND	PASS
Aldicarb	0.0442	1	1	ND	PASS
Allethrin	0.0314	0.2	0.2	ND	PASS
Azadirachtin	0.0729	1	1	ND	PASS
Azoxystrobin	0.0029	0.02	0.02	ND	PASS
Benzovindiflupyr	0.0038	0.02	0.02	ND	PASS
Bifenazate	0.0022	0.02	0.02	ND	PASS
Bifenthrin	0.0660	1	1	ND	PASS
Boscalid	0.0035	0.02	0.02	ND	PASS
Buprofezin	0.0014	0.02	0.02	ND	PASS
Carbaryl	0.0134	0.05	0.05	ND	PASS
Carbofuran	0.0018	0.02	0.02	ND	PASS
Chlorantraniliprole	0.0039	0.02	0.02	ND	PASS
Chlorfenapyr	0.0263	0.05	0.05	ND	PASS
Chlorpyrifos	0.0033	0.04	0.04	ND	PASS
Clofentezine	0.0022	0.02	0.02	ND	PASS
Clothianidin	0.0220	0.05	0.05	ND	PASS
Coumaphos	0.0038	0.02	0.02	ND	PASS
Cyantraniliprole	0.0032	0.02	0.02	ND	PASS
Cyfluthrin	0.0653	0.2	0.2	ND	PASS
Cypermethrin	0.1550	0.3	0.3	ND	PASS
Cyprodinil	0.0139	0.25	0.25	ND	PASS
Daminozide	0.0138	0.1	0.1	ND	PASS
Deltamethrin	0.0060	0.5	0.5	ND	PASS
Diazinon	0.0016	0.02	0.02	ND	PASS
Dichlorvos	0.0072	0.1	0.1	ND	PASS
Dimethoate	0.0053	0.02	0.02	ND	PASS
Dimethomorph	0.0023	0.05	0.05	ND	PASS
Dinotefuran	0.0076	0.1	0.1	ND	PASS
Dodemorph	0.0026	0.05	0.05	ND	PASS
Endosulfan-alpha	0.0357	0.2	0.2	ND	PASS
Endosulfan-beta	0.0173	0.05	0.05	ND	PASS
Endosulfan sulfate	0.0029	0.05	0.05	ND	PASS
Ethoprophos	0.0060	0.02	0.02	ND	PASS
Etofenprox	0.0059	0.05	0.05	ND	PASS
Etoxazole	0.0007	0.02	0.02	ND	PASS
Etridiazol	0.0036	0.03	0.03	ND	PASS
Fenoxycarb	0.0031	0.02	0.02	ND	PASS
Fenpyroximate	0.0008	0.02	0.02	ND	PASS
Fensulfothion	0.0046	0.02	0.02	ND	PASS

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<b>Pesticides Analysis</b>	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Fenthion	0.0085	0.02	0.02	ND	PASS
Fenvalerate	0.0767	0.1	0.1	ND	PASS
Fipronil	0.0013	0.06	0.06	ND	PASS
Flonicamid	0.0041	0.05	0.05	ND	PASS
Fludioxonil	0.0043	0.02	0.02	ND	PASS
Fluopyram	0.0014	0.02	0.02	ND	PASS
Hexythiazox	0.0016	0.01	0.01	ND	PASS
Imazalil	0.0060	0.05	0.05	ND	PASS
Imidacloprid	0.0018	0.02	0.02	ND	PASS
Iprodione	0.1217	1	1	ND	PASS
Kinoprene	0.1142	0.5	0.5	ND	PASS
Kresoxim-methyl	0.0069	0.02	0.02	ND	PASS
Malathion	0.0041	0.02	0.02	ND	PASS
Metalaxyl	0.0016	0.02	0.02	ND	PASS
Methiocarb	0.0027	0.02	0.02	ND	PASS
Methomyl	0.0093	0.05	0.05	ND	PASS
Methoprene	0.4544	2	2	ND	PASS
Mevinphos	0.0044	0.05	0.05	ND	PASS
MGK-264	0.0035	0.05	0.05	ND	PASS
Myclobutanil	0.0062	0.02	0.02	ND	PASS
Naled	0.0218	0.1	0.1	ND	PASS
Novaluron	0.0019	0.05	0.05	ND	PASS
Oxamyl	0.0123	3	3	ND	PASS
Paclobutrazol	0.0187	0.02	0.02	ND	PASS
Parathion-methyl	0.0312	0.05	0.05	ND	PASS
Permethrin	0.0609	0.5	0.5	ND	PASS
Phenothrin	0.0294	0.05	0.05	ND	PASS
Phosmet	0.0046	0.02	0.02	ND	PASS
Piperonyl butoxide	0.0010	0.2	0.2	ND	PASS
Pirimicarb	0.0020	0.02	0.02	ND	PASS
Prallethrin	0.0097	0.05	0.05	ND	PASS
Propiconazole	0.0687	0.1	0.1	ND	PASS
Propoxur	0.0035	0.02	0.02	ND	PASS
Pyraclostrobin	0.0020	0.02	0.02	ND	PASS
Pyrethrins	0.0135	0.05	0.05	ND	PASS
Pyridaben	0.0010	0.05	0.05	ND	PASS
Quintozene	0.0074	0.02	0.02	ND	PASS
Resmethrin	0.0090	0.1	0.1	ND	PASS
Spinetoram	0.0012	0.02	0.02	ND	PASS
Spinosad	0.0020	0.1	0.1	ND	PASS
Spirodiclofen	0.0140	0.25	0.25	ND	PASS
Spiromesifen	0.0025	3	3	ND	PASS
Spirotetramat	0.0027	0.02	0.02	ND	PASS

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<b>Pesticides Analysis</b>	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Spiroxamine	0.0013	0.1	0.1	ND	PASS
Tebuconazole	0.0020	0.05	0.05	ND	PASS
Tebufenozide	0.0021	0.02	0.02	ND	PASS
Teflubenzuron	0.0015	0.05	0.05	ND	PASS
Tetrachlorvinphos	0.0026	0.02	0.02	ND	PASS
Tetramethrin	0.0239	0.1	0.1	ND	PASS
Thiacloprid	0.0014	0.02	0.02	ND	PASS
Thiamethoxam	0.0076	0.02	0.02	ND	PASS
Thiophanate-methyl	0.0174	0.05	0.05	ND	PASS
Trifloxystrobin	0.0018	0.02	0.02	ND	PASS

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## Details of Testing

### **Cannabinoid Analysis**

Analysis of 11 Cannabinoids by HPLC & UHPLC

LOQ of 0.3% for Resins/Distillates/Isolates; 0.025% for Tablets; 0.03% for Flower/Oil Samples

HIGH NORTH Laboratories Methods: LAB-MTD-020, LAB-MTD-021, LAB-MTD-023 & LAB-MTD-030

### **Terpene Analysis**

Profile of 42 Terpenes by GC-MS/MS

Cannabis Flower, Oil

HIGH NORTH Laboratories Method: LAB-MTD-018

### **Moisture Analysis**

Water Activity & Moisture Content (Loss on Drying)

HIGH NORTH Laboratories Method: LAB-MTD-031 & LAB-MTD-017

### **Microbial Analysis, Powdery Mildew & Gender Determination**

Molecular detection and quantitation by PCR & qPCR

Cannabis Flower, Cannabis-Infused Products

HIGH NORTH Laboratories Method: MIC-MTD-001 & MIC-MTD-005

### **Mycotoxin Analysis**

Determination of Aflatoxins B1, B2, G1, G2 and Ochratoxin-A by LC-MS/MS

Cannabis Flower, Oil, Tablets

HIGH NORTH Laboratories Method: LAB-MTD-010, LAB-MTD-029

### **Heavy Metal Analysis**

Determination of Heavy Metal contamination (Arsenic, Cadmium, Lead & Mercury) by ICP-MS

Cannabis Flower, Oil, Topicals, Tablets

HIGH NORTH Laboratories Method: LAB-MTD-027

### **Residual Solvents Analysis**

Determination of 25 Residual Solvents by GC-MS/MS

Cannabis Oil, Tablets

HIGH NORTH Laboratories Method: LAB-MTD-005 & LAB-MTD-028

### **Pesticide Analysis**

Determination of 96 Pesticide Residues by LC-MS/MS and GC-MS/MS

Cannabis Flower, Oil

HIGH NORTH Laboratories Method: LAB-MTD-010

### **Determination of Butane and Propane Residual Solvents in Cannabis Oil**

HIGH NORTH Laboratories Method: LAB-MTD-034

### **Foreign Matter Analysis**

Visual/Magnified Inspection for Foreign Matter

HIGH NORTH Laboratories Method: LAB-MTD-022

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