Certificate of Analysis

420 Fortune Blvd
Milford, MA 01757

Sample ID: **119628**
Order No.: **42513**

Report Title: **Certificate of Analysis**
Revision: **1**
Report Date: **11/7/2023**

B. RMD INFO

Nature's Medicines
1045 Quaker Highway
Uxbridge, MA 01569

Manifest No: **0001899973**
Date Received: **11/3/2023**

C. SAMPLE IDENTIFICATION

METRC Package ID: **1A40A0100000FA5000005328**
Sample Name: **M00002409972: Nature's WIP Bud Hypothermia #1**
Prod. Batch ID: **20230904-F5.3-Hypothermia #1**
Source Pkg. ID: **1A40A0100000FA5000005327**

D. PICTURE OF SAMPLE

E. SAMPLE PROPERTIES

Sample Size: **6.9g**
# of Servings: **n/a**
Matrix: **Plant Material**
Matrix Other: **n/a**
Sample Condition: **Unremarkable**
Retest: **No**
Remediated: **No**
Description: **n/a**

F. PRODUCT CHARACTERIZATION

Product Stage: **Finished Plant Material**
Product Class: **Flower**
Other: **n/a**
Product Type: **Flower**
Retail Name: **M00002409972: Nature's WIP Bud Hypothermia #1**
Grow Material: **n/a**
Intended Route of Consumption **n/a**
Other: **n/a**
Extraction Solvent: **n/a**
Other: **n/a**

G. TEST TYPE RUN

(CN) Cannabinoid Profile
(TP) Terpene Profile
(MY) Mycotoxin Test
(HM) Heavy Metal Analysis
(MB) Microbiology Test
(PT) Pathogen Screen
(MA) Moisture Analysis
(PST) Pesticide Screen

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.

ProVerde Laboratories, Inc. is an ISO/IEC 17025:2017 accredited laboratory, registered with Perry Johnson Laboratory Accreditation Inc., certificate #L23-91-1, accreditation #80585, expiring April 30, 2025.

H. CASE NARRATIVE

For full Case Narrative, see details in PAGE 2

Total Potency (CN)	*Pesticides (PST)*	*Micro (MB)*	*Solvents (VOC)*
28.9 wt%	**PASS**	**PASS**	**Not Tested**
Terpenes (TP)	*Heavy Metals (HM)*	*Mycotoxins (MY)*	*Vitamin E Acetate (VEA)*
1.9 wt%	**PASS**	**PASS**	**Not Tested**

THIS PRODUCT

- [x] May be dispensed
- [ ] May be dispensed as INGESTION only
- [ ] May NOT be dispensed

LAB AUTHORIZATION SIGNATURE

Chris Hudalla, Ph.D.
Chief Science Officer

H. CASE NARRATIVE

The sample was provided to the laboratory by a RMD agent. Sample was submitted in a sealed container under ambient conditions. Chain of Custody seal was intact. All recorded contaminants are within the established limits.

Test Summary:

Cannabinoid Analysis: The sample was analyzed for cannabinoids by Liquid Chromatography (WI-10-17). Prior to analysis, sample was prepared by extraction with an organic solvent, filtered and diluted with an appropriate HPLC diluent. The recorded data was compared to data collected for certified reference standards for quantification.

Heavy Metal Analysis: The sample was analyzed for heavy metals by Inductively Coupled Plasma Mass Spectrometry (WI-10-13). Prior to analysis, sample was prepared by a microwave assisted acidic digestion, followed by dilution with acidified water. The recorded data was compared to data collected for certified reference standards for quantification.

Microbiological Screening: The sample was analyzed for microbial contaminants by an automated Most Probable Number enumeration (WI-10-09) [BioMerieux]. Prior to analysis, sample was prepared with peptone buffered water to extract microbial contaminants.

Mycotoxin Testing: The sample was analyzed for mycotoxins using an ImmunoAffinity Assay with fluorometric detection (WI-10-05). Prior to analysis, sample was extracted with organic solvent, followed by the ImmunoAffinity column clean-up.

Pesticide Analysis: The sample was screened for the presence of pesticide residues by Liquid Chromatography with Tandem Mass Spectrometric detection (WI-10-11). Prior to analysis, the sample was extracted with acetonitrile followed by chemical cleanup and filtration of the extract. A duplicate aliquot of the sample extract was spiked with a pesticide standard mixture to evaluate matrix effects and perform matrix-matched quantitation of incurred residues. Peak identity was confirmed by monitoring the relative abundance of at least two fragmentation transitions of the target pseudo-molecular ion.

Terpene Analysis: The sample was analyzed for terpenes (WI-10-37) utilizing solvent extraction followed by Gas Chromatography (GC) utilizing flame ionization detection (FID). Chromatographic data were processed by quantitatively comparing the analytical peak areas against calibration curves prepared from certified reference standards.

Moisture Analysis: The sample was analyzed using a dew point moisture analyzer.

QC Summary:

Cannabinoid QC: A method blank was prepared in parallel with the study sample, using only associated reagents, with no matrix included. In addition, quantitation was evaluated with a Continuing Calibration Verification (CCV) sample.

Heavy Metals QC: A method blank was prepared in parallel with the study sample, using only associated reagents, with no matrix included. In addition, quantitation was evaluated with a Continuing Calibration Verification (CCV) sample.

Microbiological QC: A method blank was prepared in parallel with the study sample, using only associated reagents, with no matrix included. In addition, an environmental blank was collected using a 3M PetriFilm, that was exposed to work area during sample preparation, followed by incubation to confirm the absence of environmental contaminants.

Mycotoxin QC: Performance of fluorometer is verified daily using standard reference materials prior to data measurement.

Pesticide QC: A method blank was prepared in parallel with the study sample, using only associated reagents, with no matrix included. In addition, quantitation was evaluated with a Continuing Calibration Verification (CCV) sample.

Terpene QC: A method blank was prepared in parallel with the study sample, using only associated reagents, with no matrix included. In addition, quantitation was evaluated with a Continuing Calibration Verification (CCV) sample.

Moisture Analysis QC: Instrument performance was verified prior to use with a reference standard of known water activity.

TABLE I: CANNABINOID PROFILE Analysis Date: 11/6/2023

Sample ID: 119628 By UPLC Lab SOP #: WI-10-17 & WI-10-17-01 Analyst: SD

This sample was analyzed using Liquid Chromatography (LC). The collected data was compared to data collected for a reference standards at a known concentration.

Test ID	Analyte	Concentration *unit = %wt*	"Dose" weight *unit = mg/g*	LOD *unit = ppm*	LOQ *unit = ppm*
A119628	D9-THC	0.585	5.85	22.10	66.20
A119628	THCV	ND	ND	22.10	66.20
A119628	CBD	ND	ND	22.10	66.20
A119628	CBDV	ND	ND	22.10	66.20
A119628	CBG	0.0966	0.966	22.10	66.20
A119628	CBC	ND	ND	22.10	66.20
A119628	CBN	ND	ND	22.10	66.20
A119628	THCA	27.6	276	22.10	66.20
A119628	CBDA	0.0692	0.692	22.10	66.20
A119628	CBGA	0.557	5.57	22.10	66.20
A119628	CBDVA	ND	ND	22.10	66.20
A119628	D8-THC	ND	ND	22.10	66.20
A119628	exo-THC	ND	ND	22.10	66.20
	Total THC	28.2 wt%	282	Measurements are based on dry weight basis.	
	Total CBD	0.0607 wt%	0.607		
	Total Cannabinoid (TAC)	28.9 wt%	289		
	CBD to THC Ratio	**0 : 1**			

There are no limits established by the Massachusetts Cannabis Control Commission for cannabinoid concentrations. Total THC = THCA + THC (all isomers). Total CBD is reported based on a decarboxylation assumption such that Total CBD = (0.877 x CBDA) + CBD. ND = None Detected above the Limits of Detection (LOD).

TABLE J: HEAVY METALS Analysis Date: 11/6/2023

Sample ID: 119628 By ICPMS Lab SOP #: WI-10-13 Analyst: ZDV

This sample was analyzed by elemental analysis using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for the identification of heavy metal constituents. External calibration curves for heavy metals were used for quantitation, with an additional internal reference standard. Resulting data was compared with a sample blank.

Test ID	Analyte	Concentration[1] *unit = ppb*	LOD *unit = ppb*	LOQ *unit = ppb*	Limits - All Use [2] *Limits (ppb)*	*Test*	Limits - Ingestion Only [2] *Limits (ppb)*	*Test*
119628	As	ND	25	50	200	PASS	1500	PASS
119628	Cd	ND	25	50	200	PASS	500	PASS
119628	Hg	ND	25	50	100	PASS	1500	PASS
119628	Pb	ND	25	50	500	PASS	1000	PASS

2) Testing limits established by the Massachusetts Cannabis Control Commission, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 4.

TABLE K: MICROBIOLOGICAL CONTAMINANTS Analysis Date: 11/6/2023

Sample ID: 119628 By MPN Lab SOP #: WI-10-09 Analyst: SRD

This sample was analyzed for microbiological contaminants using an automated Most Probable Number (MPN) methodology with cultured enrichments.

Test ID	Analyte Symbol	Test Analysis	Result	Unit	Standard Limits *unit = CFU/g*	Limit Test
119628	EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	1,000 CFU/g	PASS
119628	CC	Total Coliform Bacterial Count	<100	CFU/g	1,000 CFU/g	PASS
119628	AC	Total Aerobic Bacterial Count	<100	CFU/g	100,000 CFU/g	PASS
119628	YM	Total Yeast & Mold	<100	CFU/g	10,000 CFU/g	PASS

Recommended limits established by the American Herbal Pharmacopoeia (AHP) monograph for Cannabis Inflorescence [2013], for consumable botanical products, including processed and unprocessed cannabis materials, and solvent-based extracts.All recorded Microbiological tests are within the established limits.

*Testing limits established by the Massachusetts Cannabis Control Commission, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6.

TABLE L: PATHOGENIC BACTERIA Analysis Date: 11/7/2023

Sample ID: 119628 By ELFA Lab SOP #: WI-10-10 Analyst: AEH

This sample was analyzed for pathogenic bacteria using an automated Enzyme Linked Fluorescent Assay (ELFA). Quality control checks are performed monthly by running both a positive and a negative control sample for each pathogen.

Test ID	Analyte Symbol	Test Analysis	Result	Standard Limits	Limit Test
119628	ECPT	E. coli (O157)	Negative	Non Detected in 1g	PASS
119628	SPT	Salmonella	Negative	Non Detected in 1g	PASS

Note: All recorded pathogenic bacteria tests passed.

*Testing limits established by the Massachusetts Cannabis Control Commission, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6.

TABLE M: MYCOTOXINS Analysis Date: 11/6/2023

Sample ID: 119628 By IA/Fluorescence Lab SOP #: WI-10-05 Analyst: RAM/BB

This sample was analyzed for mycotoxins using an Immunoaffinity based assay (IA). Data was compared to readings from standard reference materials.

Test ID	Analyte Symbol	Analyte	Result *unit = ppb*	LOD *unit = ppb*	LOQ *unit = ppb*	Standard Limits *unit = ppb*	Limit Test
119628	Afla	Total Aflatoxin	< LOD	2	4	< 20	PASS
119628	Ochra	Total Ochratoxin	< LOD	3	6	< 20	PASS

Note: All recorded Mycotoxin tests are within the established limits.

*Testing limits established by the Massachusetts Cannabis Control Commission, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6.
MLD = Method Detection Limit.

TABLE O: PESTICIDES Analysis Date: 11/3/2023

Sample ID: 119628 By LCMSMS Lab SOP #: WI-10-11 Analyst: CJR

This 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).

Test ID	Analyte	Result *unit = ppb*	LOD *unit = ppb*	LOQ *unit = ppb*	Standard Limits *unit = ppb*	*Test*	Method QA/QC Test
119628	Bifenazate	ND	5	10	10	PASS	MS/MSD
119628	Bifenthrin	ND	5	20	10	PASS	MS/MSD
119628	Cyfluthrin	ND	100	500	10	PASS	MS/MSD
119628	Etoxazole	ND	5	20	10	PASS	MS/MSD
119628	Imazalil	ND	50	100	10	PASS	MS/MSD
119628	Imidacloprid	ND	5	20	10	PASS	MS/MSD
119628	Myclobutanil	ND	5	20	10	PASS	MS/MSD
119628	Spiromesifen	ND	5	40	10	PASS	MS/MSD
119628	Trifloxystrobin	ND	5	20	10	PASS	MS/MSD

Note: All recorded Pesticide are within the established limits.

* Testing limits established by the Massachusetts Cannabis Control Commission, 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 due to matrix interference.

TABLE P: TERPENE PROFILE						Analysis Date: 11/6/2023
Sample ID: 119628 By GC-FID		Lab SOP #: WI-10-37				Analyst: ZDV
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.						
Test ID	**Analyte**	**CAS Number**	**Concentration** *unit = wt%*	**Concentration** *unit = ppm*	**LOD** *unit = ppm*	**LOQ** *unit = ppm*
119628-FID	isopulegol	89-79-2	<LOD	<LOD	5.00	10.00
119628-FID	menthol	89-78-1	<LOD	<LOD	5.00	10.00
119628-FID	linalool	78-70-6	0.171	1,710	5.00	10.00
119628-FID	caryophyllene oxide	1139-30-6	<LOD	<LOD	5.00	10.00
119628-FID	guaiol	489-86-1	<LOD	<LOD	5.00	10.00
119628-FID	sabinene	3387-41-5	<LOD	<LOD	5.00	10.00
119628-FID	p-cymene	99-87-6	<LOD	<LOD	5.00	10.00
119628-FID	camphene	79-92-5	0.0149	150	5.00	10.00
119628-FID	eucalyptol	470-82-6	<LOD	<LOD	5.00	10.00
119628-FID	geraniol	106-24-1	<LOD	<LOD	5.00	10.00
119628-FID	terpinolene	586-62-9	0.0129	129	5.00	10.00
119628-FID	alpha-bisabolol	23089-26-1	0.0283	283	5.00	10.00
119628-FID	alpha-pinene	80-56-8	0.160	1,600	5.00	10.00
119628-FID	alpha-terpinene	99-86-5	<LOD	<LOD	5.00	10.00
119628-FID	beta-caryophyllene	87-44-5	0.484	4,840	5.00	10.00
119628-FID	beta-pinene	127-91-3	0.138	1,380	5.00	10.00
119628-FID	delta-3-carene	13466-78-9	<LOD	<LOD	5.00	10.00
119628-FID	L-fenchone	7787-20-4	<LOD	<LOD	5.00	10.00
119628-FID	beta-myrcene	123-35-3	0.0430	430	5.00	10.00
119628-FID	alpha-phellandrene	99-83-2	<LOD	<LOD	5.00	10.00
119628-FID	alpha-ocimene	502-99-8	<LOD	<LOD	5.00	10.00
119628-FID	D-limonene	5989-27-5	0.522	5,220	5.00	10.00
119628-FID	gamma-terpinene	99-85-4	<LOD	<LOD	5.00	10.00
119628-FID	alpha-humulene	6753-98-6	0.223	2,230	5.00	10.00
119628-FID	cis-nerolidol	3790-78-1	<LOD	<LOD	5.00	10.00
119628-FID	trans-nerolidol	40716-66-3	0.00966	96.6	5.00	10.00
119628-FID	beta-ocimene	13877-91-3	0.0614	614	5.00	10.00

Total Terpene: 1.9 wt%

* Indicates semi-qualitative calculation based on recorded peak areas.

TABLE P3: MOISTURE ANALYSIS		Test Date: 11/6/2023
119628-MA	Lab SOP #: WI-10-25	Analyst: ALF

Moisture (wt %): **6.5%**

The moisture content was extrapolated from the water activity, measured by a dew point analyzer, based on standard hysteresis curves.

END OF REPORT