

# CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** \*Joy Organics Full Spectrum CBD Soft-gels  
**PRODUCT STRENGTH:** 25 mg CBD  
**BATCH:** 22081B  
**BEST BY DATE: HEMP** 11/12/2023  
**EXTRACT LOT:** 21BL035481

\*Click on the links to view third-party reports\*

### Physical Attributes

Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber.	PASS
Odor	Joy Internal	No Odor.	PASS
Appearance	Joy Internal	Dry, ovoid softgel capsules in container with lid and shrink-band.	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and shrink bands intact.	PASS
Secondary Package Eval.	Joy Internal	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

### Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
<b>Potency - Total CBD</b>	HPLC-UV DAD	*LOQ: ≥ 25 mg / softgel	<b>26.21 mg</b>	PASS
<b>Potency - D9-THC</b>	HPLC-UV DAD	LOQ: <0.3% (full spectrum)	<b>ND</b>	PASS
<b>Expanded Pesticide Panel</b>	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS
<b>Microbial</b> Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 **CFU/25	<b>Absent</b>	PASS
<b>Microbial</b> Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	<b>Absent</b>	PASS
<b>Microbial</b> Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Coliforms*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Aerobic Count*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>3</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Heavy Metals</b>	ICP-MS	Arsenic (As): ≤1.5 ppm† Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	<b>Below LOQ</b>	PASS
<b>Mycotoxins</b>	ICP-MS	Total Aflatoxins <20 ppb†† Aflatoxin B1 < 5 ppb Ochratoxin < 5 ppb	<b>Below LOQ</b>	PASS
<b>Residual Solvents</b>	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS

\* Level of Quantification  
 \*\*CFU/g=Colony Forming Units per Gram  
 † Parts Per Million †† Part Per Billion

Values expressed using scientific notation.  
 Examples:  
 10<sup>2</sup>=100  
 10<sup>3</sup>=1,000

Quality Certified Cody Elbrader 03/22/2022  
 Cody Elbrader \_\_\_\_\_  
 Quality Assurance Technician Date

**Joy FS 25 mg**

Batch ID or Lot Number: **21BL035481**      Test: **Potency**      Reported: **11/22/21**

Matrix:      Test ID:      Started:      USDA License:  
 Unit      T000176863      11/19/21      N/A

Status:      Method:      Received:      Sampler ID:  
 N/A      TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis (Colorado Panel)      11/17/2021 @ 09:42 AM      N/A

**CANNABINOID PROFILE**

Compound	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.209	0.694	ND	ND	# of Servings = 1 Sample Weight=0.576g
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.236	0.783	ND	ND	
Cannabidiolic acid (CBDA)	0.312	0.807	ND	ND	
Cannabidiol (CBD)	0.304	0.786	26.205	45.52	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.260	0.862	ND	ND	
Cannabinolic Acid (CBNA)	0.149	0.494	ND	ND	
Cannabinol (CBN)	0.068	0.226	0.583	1.01	
Cannabigerolic acid (CBGA)	0.218	0.724	ND	ND	
Cannabigerol (CBG)	0.052	0.173	3.215	5.58	
Tetrahydrocannabivarinic Acid (THCVA)	0.185	0.612	ND	ND	
Tetrahydrocannabivarin (THCV)	0.048	0.157	ND	ND	
Cannabivarinic Acid (CBDVA)	0.130	0.336	ND	ND	
Cannabivarin (CBDV)	0.072	0.186	0.152*	0.26*	
Cannabichromenic Acid (CBCA)	0.084	0.279	ND	ND	
Cannabichromene (CBC)	0.092	0.305	0.119*	0.21*	
<b>Total Cannabinoids</b>			<b>30.274</b>	<b>52.58</b>	
Total Potential THC**			ND	ND	
Total Potential CBD**			26.205	45.52	

 Ryan Weems  
 22-Nov-2021  
 04:06 PM

 Sam Smith  
 22-Nov-21  
 4:17 PM

PREPARED BY / DATE

APPROVED BY / DATE

**Definitions**

\* % (w/w) = Percent (Weight of Analyte / Weight of Product)

\*\* Indicates a value below the Limit of Quantitation (LOQ) and above the Limit of Detection (LOD).

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation steps:

Total THC = THC + (THCA \* (0.877)) and

Total CBD = CBD + (CBDa \* (0.877))

Total Cannabinoid result reflects the absolute sum of all cannabinoids detected

ND = None Detected (Defined by Dynamic Range of the method)

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC.



CDPHE Certified



Certificate #4329.02

**Joy FS 25 mg**

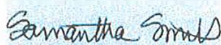
Batch ID or Lot Number: <b>21BL035481</b>	Test: <b>Pesticides</b>	Reported: <b>11/19/21</b>	
Matrix: Concentrate	Test ID: T000176864	Started: 11/18/21	USDA License: N/A
Status: N/A	Method: TM17(LC-QQQ LC MS/MS):	Received: 11/17/2021 @ 09:42 AM	Sampler ID: N/A

**PESTICIDE DETERMINATION**

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	38	ND	Fenoxycarb	43	ND	Paclobutrazol	41	ND
Acetamiprid	38	ND	Fipronil	37	ND	Permethrin	277	ND
Avermectin	282	ND	Flonicamid	35	ND	Phosmet	43	ND
Azoxystrobin	44	ND	Fludioxonil	305	ND	Prophos	294	ND
Bifenazate	44	ND	Hexythiazox	37	ND	Propoxur	41	ND
Boscalid	43	ND	Imazalil	278	ND	Pyridaben	290	ND
Carbaryl	36	ND	Imidacloprid	44	ND	Spinosad A	34	ND
Carbofuran	40	ND	Kresoxim-methyl	150	ND	Spinosad D	53	ND
Chlorantraniliprole	43	ND	Malathion	292	ND	Spiromesifen	261	ND
Chlorpyrifos	500	ND	Metalaxyl	41	ND	Spirotetramat	287	ND
Clofentezine	291	ND	Methiocarb	40	ND	Spiroxamine 1	18	ND
Diazinon	270	ND	Methomyl	40	ND	Spiroxamine 2	23	ND
Dichlorvos	255	ND	MGK 264 1	161	ND	Tebuconazole	297	ND
Dimethoate	39	ND	MGK 264 2	118	ND	Thiacloprid	37	ND
E-Fenpyroximate	284	ND	Myclobutanil	42	ND	Thiamethoxam	39	ND
Etofenprox	41	ND	Naled	44	ND	Trifloxystrobin	43	ND
Etoxazole	289	ND	Oxamyl	1500	ND			



 Karen Winternheimer  
 11/19/2021  
 12:16:00 PM



 Sam Smith  
 11/19/2021  
 12:21:00 PM

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**Definitions**

 LOQ = Limit of Quantification  
 ppb = Parts per Billion

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Prepared for:

**JOY ORGANICS**
**SG25FS**


Batch ID or Lot Number: <b>22081B</b>	Test: <b>Microbial Contaminants</b>	Reported: <b>3/21/22</b>	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
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Matrix: Finished Product	Test ID: T000198345	Started: 3/16/22	USDA License: N/A
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Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial	Received: 03/16/2022 @ 10:08 AM	Sampler ID: N/A
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### MICROBIAL CONTAMINANTS DETERMINATION

Contaminant	Method	LOD	LLOQ	ULOQ	Result	Notes
<b>Total Aerobic Count*</b>	TM-26, Culture Plating	10 <sup>2</sup> CFU/g	10 <sup>3</sup> CFU/g	1.5x10 <sup>5</sup> CFU/g	None Detected	Free from visual mold, mildew, and foreign matter
<b>Total Coliforms*</b>	TM-27, Culture Plating	10 <sup>1</sup> CFU/g	10 <sup>2</sup> CFU/g	1.5x10 <sup>4</sup> CFU/g	None Detected	
<b>Total Yeast and Mold*</b>	TM-24, Culture Plating	10 <sup>1</sup> CFU/g	10 <sup>2</sup> CFU/g	1.5x10 <sup>4</sup> CFU/g	None Detected	
<b>STEC</b>	TM-25, PCR	10 <sup>0</sup> CFU/25 g	NA	NA	Absent	
<b>Salmonella</b>	TM-25, PCR	10 <sup>0</sup> CFU/25 g	NA	NA	Absent	

  
 Carly Bader  
 3/19/2022  
 2:21:00 PM

  
 Brett Hudson  
 3/21/2022  
 12:10:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

#### Definitions

LOD = Limit of Detection | LLOQ = Lower Limit of Quantitation | ULOQ = Upper Limit of Quantitation

 CFU/g = Colony Forming Units per Gram | STEC = Shiga Toxin-Producing *E. coli*

\* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.

Examples: 10<sup>2</sup> = 100 CFU  
 10<sup>3</sup> = 1,000 CFU  
 10<sup>4</sup> = 10,000 CFU  
 10<sup>5</sup> = 100,000 CFU

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## Joy FS 25 mg

Batch ID or Lot Number: <b>21BL035481</b>	Test: <b>Metals</b>	Reported: <b>11/18/21</b>	
Matrix: Unit Co	Test ID: T000176866	Started: 11/18/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS): Heavy Metals (Colorado Panel)	Received: 11/17/2021 @ 09:42 AM	Sampler ID: N/A

## HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.041 - 4.07	ND	
Cadmium	0.043 - 4.33	ND	
Mercury	0.045 - 4.48	ND	
Lead	0.045 - 4.45	ND	



Daniel Weidensaul  
 18-Nov-21  
 6:23 PM

PREPARED BY / DATE



Sam Smith  
 18-Nov-21  
 6:26 PM

APPROVED BY / DATE

### Definitions

ND = None Detected (Defined by Dynamic Range of the method)

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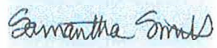


**Joy FS 25 mg**

Batch ID or Lot Number: <b>21BL035481</b>	Test: <b>Mycotoxins</b>	Reported: <b>11/22/21</b>	
Matrix: Concentrate	Test ID: T000176869	Started: 11/19/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 11/17/2021 @ 09:42 AM	Sampler ID: N/A

**MYCOTOXIN DETERMINATION**

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.9 - 131.2	ND	N/A
Aflatoxin B1	1 - 32.7	ND	
Aflatoxin B2	1 - 32.2	ND	
Aflatoxin G1	1 - 32.8	ND	
Aflatoxin G2	1.1 - 31.9	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	



 Sam Smith  
 22-Nov-21  
 10:08 AM

PREPARED BY / DATE



 Ryan Weems  
 22-Nov-21  
 10:10 AM

APPROVED BY / DATE

**Definitions**

ND = None Detected (Defined by Dynamic Range of the method)

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ACCREDITED

Prepared for:

**Joy FS 25 mg**

Batch ID or Lot Number: <b>21BL035481</b>	Test: <b>Residual Solvents</b>	Reported: <b>11/21/21</b>	
Matrix: N/A	Test ID: T000176867	Started: 11/19/21	
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 11/17/2021 @ 09:42 AM	Sampler ID: N/A

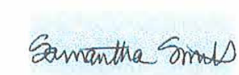
**RESIDUAL SOLVENTS DETERMINATION**

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
<b>Propane</b>	98 - 1964	*ND	
<b>Butanes</b>	197 - 3930	*ND	
(Isobutane, n-Butane)			
<b>Methanol</b>	56 - 1129	*ND	
<b>Pentane</b>	80 - 1592	*ND	
<b>Ethanol</b>	89 - 1776	*ND	
<b>Acetone</b>	94 - 1887	*ND	
<b>isopropyl Alcohol</b>	100 - 2000	*ND	
<b>Hexane</b>	5 - 106	*ND	
<b>Ethyl Acetate</b>	85 - 1707	*ND	
<b>Benzene</b>	0.2 - 3.1	*ND	
<b>Heptanes</b>	92 - 1836	*ND	
<b>Toluene</b>	17 - 350	*ND	
<b>Xylenes</b>	132 - 2646	*ND	
(m,p,o-Xylenes)			



Hannah Wright  
21-Nov-21  
11:36 AM

PREPARED BY / DATE



Sam Smith  
21-Nov-21  
11:40 AM

APPROVED BY / DATE

**Definitions**

\* ND = None Detected (Defined by Dynamic Range of the method)

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