

# CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** CBD Tincture - Orange  
**PRODUCT STRENGTH:** 450 mg  
**LOT NUMBER:** 20LL090K11  
**BEST BY DATE:** 10/17/2021  
**HEMP EXTRACT LOT** 112619

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

## Physical Attributes

Test	Method	Specification	Results
Color	SOP-100	Golden to Amber	PASS
Odor	SOP-100	Characteristic - coconut and hemp, orange	PASS
Appearance	SOP-100	Golden to Amber oil in brown glass bottle with dropper	PASS
Primary Package Eval.	SOP-132	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	SOP-132	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>	SOP-111	427.5-562.5mg CBD LOQ**: 10 PPM† (0.001%)	<a href="#">492mg</a>	PASS
<b>Potency - D9-THC</b>	SOP-111	None Detected LOQ: 10 PPM (0.001%)	<a href="#">ND</a>	PASS
<b>Compliant Pesticide Panel</b>	SOP-111	Action Limits base on Oregon standard for Pesticides in Cannabis	<a href="#">ND</a>	PASS
<b>Microbial - Stec E.Coli</b>	SOP-111	Complies with USP 61/62	<a href="#">BELOW LOD</a>	PASS
<b>Microbial - Salmonella</b>	SOP-111	Complies with USP 61/62	<a href="#">BELOW LOD</a>	PASS
<b>Microbial - Yeast and Mold</b>	SOP-111	Complies with USP 61/62	<a href="#">BELOW LOD</a>	PASS
<b>CA Compliant Heavy Metal Panel</b>	SOP-111	Arsenic (As): ≤1.5 PPM Cadmium (Cd): ≤0.5 PPM Mercury (Hg): ≤1.0 PPM Lead (Pb): ≤0.5 PPM	<a href="#">ND</a>	PASS

\* Level of Quantitation, † Parts Per Million

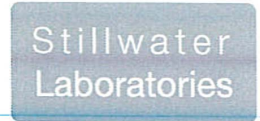
Quality Certified by: *Darcie Moran* 05/02/2020  
 Darcie Moran Date  
 Manager of Quality Assurance

# Orange Bliss 450mg 20LL090K11

# Certificate of Analysis



total cannabinoids	Δ9-THC	THCa	total THC
<b>504 mg</b>	0 mg	0 mg	0 mg
per	CBD	CBDa	total CBD
<b>30mL</b>	492 mg	0 mg	492 mg



<https://portal.a2la.org/scopepdf/4961-01.pdf>

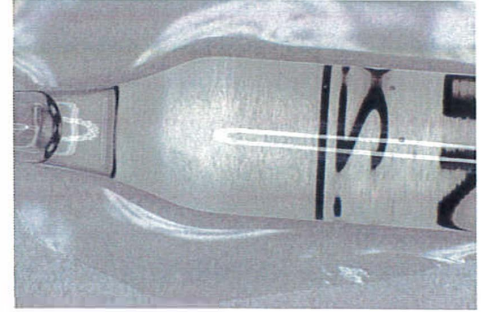
## Sample Handling

test ID	sample wt
type	order <b>7161</b>
lab ID <b>0DY79</b>	sample date
unit 30mL	unit weight <b>28.2 g</b>

## Methods

method	equipment
weights	MSP-7.3.1.3 AUX120.1
potency	MSP-7.5.1.5 LC-2030
terpenes	MSP-7.5.1.7 QP2020/HS20
pesticides	MSP-7.5.1.8 LC-8060
mycotoxins	MSP-7.5.1.8 LC-8060
microbial	MSP-7.5.1.9 Hardy Diag
solvents	MSP-7.5.1.6 QP2020/HS20
metals	MSP-7.5.1.1 ICPMS2030

caryophyllene  
humulene  
terpinolene  
ocimene  
beta pinene  
alpha pinene  
limonene  
myrcene  
linalool



## Potency

per 30mL	estimated error
tetrahydrocannabinolic acid (THCa) 0%	0 mg ± 0.46 mg
Δ <sup>9</sup> -tetrahydrocannabinol (Δ <sup>9</sup> THC) 0%	0 mg ± 0.46 mg
Δ <sup>8</sup> -tetrahydrocannabinol (Δ <sup>8</sup> THC) 0%	0 mg ± 0.46 mg
tetrahydrocannabivarin (THCv) 0%	0 mg ± 0.46 mg
cannabidiolic acid (CBDa) 0%	0 mg ± 0.46 mg
cannabidiol (CBD) 1.75%	492 mg ± 12.08 mg
cannabidivarin (CBDv) .01%	2 mg ± 0.82 mg
cannabigerolic acid (CBGa) 0%	0 mg ± 0.46 mg
cannabigerol (CBG) .04%	10 mg ± 1.79 mg
cannabinol (CBN) 0%	0 mg ± 0.46 mg
cannabichromene (CBC) 0%	0 mg ± 0.46 mg

## Terpenes

%	estimated error	%	estimated error	%	estimated error
β-myrcene 0.000%	± 0.0017%	camphene 0.000%	± 0.0016%	guaiol 0.000%	± 0.0017%
β-caryophyllene 0.000%	± 0.0016%	Δ <sup>3</sup> -carene 0.000%	± 0.0016%	β-bisabolol 0.000%	± 0.0016%
alpha-pinene 0.000%	± 0.0017%	a-terpinene 0.000%	± 0.0016%	eucalyptol 0.000%	± 0.0016%
β-pinene 0.004%	± 0.0021%	para-cymene 0.000%	± 0.0017%		
D-limonene 1.027%	± 0.0206%	g-terpinene 0.000%	± 0.0016%		
linalool 0.005%	± 0.0021%	(-)-isopulegol 0.000%	± 0.0016%		
ocimene 0.003%	± 0.0036%	geraniol 0.000%	± 0.0017%		
terpinolene 0.001%	± 0.0017%	cis-nerolidol 0.000%	± 0.0016%		
alpha-humulene 0.000%	± 0.0016%	trans-nerolidol 0.000%	± 0.0016%		

total terpenes  
**1.04%**

## Solvents

MT limit	0DY79	LOQ
propane	5,000	2 ppm <10ppm
butanes	5,000	0 ppm <10ppm
pentanes	5,000	0 ppm <10ppm
hexanes	290	0 ppm <10ppm
cyclohexane	3,880	0 ppm <10ppm
heptanes	5,000	0 ppm <10ppm
methanol	3,000	11 ppm <10ppm
isopropanol	5,000	0 ppm <10ppm
acetone	5,000	0 ppm <10ppm
ethyl acetate	5,000	1 ppm <10ppm
benzene	2	0 ppm <0.2ppm
toluene	890	0 ppm <10ppm
xylene	2,170	0 ppm <10ppm
chloroform	2	0 ppm <0.2ppm
dichloromethane	600	0 ppm <10ppm

## Pesticides (MT)

MT limit	0DY79	LOQ
abamectin	0.00 ppm	<10ppb
acequinocyl	0.00 ppm	<10ppb
bifenazate	0.00 ppm	<10ppb
bifenthrin	0.00 ppm	<10ppb
chlormequat cl.	0.00 ppm	<10ppb
cyfluthrin	0.00 ppm	<80ppb
diaminazide	0.00 ppm	<10ppb
etoxazole	0.00 ppm	<10ppb
fenoxycarb	0.00 ppm	<10ppb
imazalil	0.00 ppm	<10ppb
imidacloprid	0.00 ppm	<10ppb
myclobutanil	0.00 ppm	<10ppb
paclobutrazol	0.00 ppm	<10ppb
pyrethrins	0.00 ppm	<10ppb
spinosad	0.00 ppm	<10ppb
spiromesifen	0.00 ppm	<10ppb
spirotetramat	0.00 ppm	<10ppb
trifloxystrobin	0.00 ppm	<10ppb

## Pesticides (other)

0DY79	LOQ
acephate	0.00 ppm <10ppb
acetamiprid	0.00 ppm <10ppb
aldicarb	0.00 ppm <10ppb
azoxystrobin	0.00 ppm <10ppb
boscalid	0.00 ppm <10ppb
carbaryl	0.00 ppm <10ppb
carburean	0.00 ppm <10ppb
chlorantraniliprole	0.00 ppm <10ppb
chlorpyrifos	0.00 ppm <10ppb
clofentezine	0.00 ppm <10ppb
cypermethrin	0.00 ppm <10ppb
diazinon	0.00 ppm <10ppb
dichlorvos	0.00 ppm <10ppb
dimethoate	0.00 ppm <10ppb
etofenprox	0.00 ppm <10ppb
fenpyroximate	0.00 ppm <10ppb
fenprol	0.00 ppm <10ppb
flonicamid	0.00 ppm <10ppb
fludioxonil	0.00 ppm <10ppb
hexythiazox	0.00 ppm <10ppb
kresoxym-methyl	0.00 ppm <10ppb
malathion	0.00 ppm <10ppb
metalaxyl	0.00 ppm <10ppb
methiocarb	0.00 ppm <10ppb
methomyl	0.00 ppm <10ppb
oxamyl	0.00 ppm <10ppb
permethrin	0.00 ppm <10ppb
phosmet	0.00 ppm <10ppb
piperonyl butoxide	0.00 ppm <10ppb
prallethrin	0.00 ppm <10ppb
propiconazole	0.00 ppm <10ppb
pyridaben	0.00 ppm <10ppb
spiroxamine	0.00 ppm <10ppb
tebuconazole	0.00 ppm <10ppb
thiacloprid	0.00 ppm <10ppb
thiamethoxam	0.00 ppm <10ppb

## Toxic Metals

MT limit	0DY79	LOQ
arsenic	2 ppm	0.0 ppm <10ppb
cadmium	4.1 ppm	0.0 ppm <10ppb
lead	1.2 ppm	0.0 ppm <10ppb
mercury	0.4 ppm	0.0 ppm <10ppb

## Microbial

MT limit	0DY79	LOQ
<i>E. coli</i>	10 CFU	0 CFU <10 CFU/g
Salmonella sp.	10 CFU	0 CFU <10 CFU/g
molds	10000 CFU	0 CFU <10k CFU/g
Aflatoxin B1,B2,G1,G2	20 ppb	0 ppb <20 ppb
Ochratoxin A	20 ppb	0 ppb <20 ppb

## Comments

Extraction using MSP-7.5.1.2b.concentrate  
Assumed density 0.94

All testing was completed onsite at 6073 US93N, Olney MT. Potency (cannabinoid concentration) is calculated from the equation: [cannabinoid] = [cannabinoid]<sub>HP-LEC</sub> × volume<sub>dilution</sub> / m<sub>dry</sub>. Terpene concentration is calculated from the equation: [terpene] = (terpene mass)<sub>GC-MS</sub> / m<sub>dry</sub>. Decarboxyated cannabinoid concentration is calculated from the equation XXX<sub>total</sub> = 0.877 × XXX<sub>a</sub> + XXX<sub>b</sub>. Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula s<sub>y</sub><sup>2</sup> = Σ (∂f/∂i)<sup>2</sup> s<sub>i</sub><sup>2</sup> where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) ± t<sub>CL,95</sub> × s<sub>y</sub>. Sampling error is not

Certified by:

*Ron Brost*

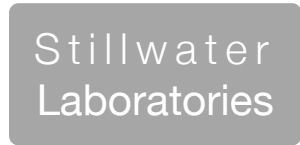
Ron Brost, PhD PEng (Chem)

Director  
6073 US93N, Olney MT 59927  
406-881-2019 rdb@stlwb.com



total cannabinoids **84.7%**  
 CBD decarb total 80.7%  
 Δ9-THC ND

**This Product Has Been Tested and Complies with 7USC1639o(1) Definition of Hemp**

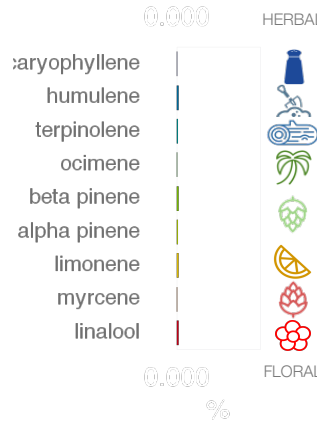


https://portal.a2la.org/scopepdf/4961-01.pdf

Sample Handling

test ID sample date 2/24/20 4:49 PM  
 order 6654 labID OBR66 weight  
 source

Methods	method	equipment
weights	MSP-7.3.1.3	AUX120.1
potency	MSP-7.5.1.5	LC-2030
terpenes	MSP-7.5.1.7	QP2020/HS20
pesticides	MSP-7.5.1.8	LC-8060
mycotoxins	MSP-7.5.1.8	LC-8060
microbial	MSP-7.5.1.9	Hardy Diag
solvents	MSP-7.5.1.6	QP2020/HS20
metals	MSP-7.5.1.10	ICPMS2030



concentrate



Potency	%	estimated error	Terpenes	%	estimated error	%	estimated error	%	estimated error		
tetrahydrocannabinolic acid (THCa)	ND	± 0.02 %	β-myrcene	0.001%	± 0.0017%	camphene	0.002%	± 0.0017%	guaiol	0.000%	± 0.0017%
Δ <sup>9</sup> -tetrahydrocannabinol (Δ <sup>9</sup> THC)	ND	± 0.02 %	β-caryophyllene	0.001%	± 0.0017%	Δ3-carene	0.003%	± 0.0018%	β-bisabolol	0.002%	± 0.0017%
Δ <sup>8</sup> -tetrahydrocannabinol (Δ <sup>8</sup> THC)	ND	± 0.02 %	alpha-pinene	0.005%	± 0.0018%	a-terpinene	0.000%	± 0.0016%	eucalyptol	0.005%	± 0.0018%
tetrahydrocannabivarin (THCv)	ND	± 0.02 %	β-pinene	0.008%	± 0.0019%	para-cymene	0.009%	± 0.0019%			
cannabidiolic acid (CBDa)	ND	± 0.02 %	D-limonene	0.009%	± 0.0019%	g-terpinene	0.010%	± 0.0019%			
cannabidiol (CBD)	80.7%	± 0.73 %	linalool	0.008%	± 0.0019%	(-)-isopulegol	0.000%	± 0.0016%	total terpenes		0.08%
cannabidivarin (CBDv)	ND	± 0.02 %	ocimene	0.002%	± 0.0034%	geraniol	0.002%	± 0.0017%			
cannabigerolic acid (CBGa)	ND	± 0.02 %	terpinolene	0.003%	± 0.0018%	cis-nerolidol	0.000%	± 0.0016%			
cannabigerol (CBG)	4.02%	± 0.16 %	alpha-humulene	0.007%	± 0.0019%	trans-nerolidol	0.004%	± 0.0018%			
cannabinol (CBN)	ND	± 0.02 %									
cannabichromene (CBC)	ND	± 0.02 %									

Solvents	MT limit	OBR66	LOQ	Pesticides (MT)	MT limit	OBR66	LOQ	Pesticides (other)	OBR66	LOQ
propane	5,000	0 ppm	<10ppm	abamectin	2.50 ppm	0.00 ppm	<10ppb	acephate	0.00 ppm	<10ppb
butanes	5,000	0 ppm	<10ppm	acequinocyl	10.00 ppm	0.00 ppm	<10ppb	acetamiprid	0.00 ppm	<10ppb
pentanes	5,000	0 ppm	<10ppm	bifenazate	1.00 ppm	0.00 ppm	<10ppb	aldicarb	0.00 ppm	<10ppb
hexanes	290	0 ppm	<10ppm	bifenthrin	1.00 ppm	0.00 ppm	<10ppb	azoxystrobin	0.00 ppm	<10ppb
cyclohexane	3,880	0 ppm	<10ppm	chlormequat cl.	5.00 ppm	0.00 ppm	<10ppb	boscalid	0.00 ppm	<10ppb
heptanes	5,000	0 ppm	<10ppm	cyfluthrin	5.00 ppm	0.00 ppm	<80ppb	carbaryl	0.00 ppm	<10ppb
methanol	3,000	0 ppm	<10ppm	diaminozide	5.00 ppm	0.00 ppm	<10ppb	carbofuran	0.00 ppm	<10ppb
isopropanol	5,000	0 ppm	<10ppm	etoxazole	1.00 ppm	0.00 ppm	<10ppb	chloantraniliprole	0.00 ppm	<10ppb
acetone	5,000	0 ppm	<10ppm	fenoxycarb	1.00 ppm	0.00 ppm	<10ppb	chlorpyrifos	0.00 ppm	<10ppb
ethyl acetate	5,000	0 ppm	<10ppm	imazalil	1.00 ppm	0.00 ppm	<10ppb	clofentezine	0.00 ppm	<10ppb
benzene	2	0 ppm	<0.2ppm	imidacloprid	2.00 ppm	0.00 ppm	<10ppb	cypermethrin	0.00 ppm	<10ppb
toluene	890	0 ppm	<10ppm	myclobutanil	0.60 ppm	0.00 ppm	<10ppb	diazinon	0.00 ppm	<10ppb
xylenes	2,170	0 ppm	<10ppm	paclobutrazol	2.00 ppm	0.00 ppm	<10ppb	dichlorvos	0.00 ppm	<10ppb
chloroform	2	0 ppm	<0.2ppm	pyrethrins	5.00 ppm	0.00 ppm	<10ppb	dimethoate	0.00 ppm	<10ppb
dichloromethane	600	0 ppm	<10ppm	spinosad	1.00 ppm	0.00 ppm	<10ppb	etofenprox	0.00 ppm	<10ppb
				spiromesifen	1.00 ppm	0.00 ppm	<10ppb	fenpyroximate	0.00 ppm	<10ppb
				spirotetramat	1.00 ppm	0.00 ppm	<10ppb	fipronil	0.00 ppm	<10ppb
				trifloxystrobin	1.00 ppm	0.00 ppm	<10ppb	flonicamid	0.00 ppm	<10ppb

Toxic Metals	MT limit	OBR66	LOQ
arsenic	2 ppm	0.0 ppm	<10ppb
cadmium	0.8 ppm	0.0 ppm	<10ppb
lead	1.2 ppm	0.0 ppm	<10ppb
mercury	0.4 ppm	0.0 ppm	<10ppb

Microbial	MT limit	OBR66	LOQ
<i>E. coli</i>	10 CFU	0 CFU	<10 CFU/g
Salmonella sp.	10 CFU	0 CFU	<10 CFU/g
molds	10000 CFU	0 CFU	<10k CFU/g
Aflatoxin B1,B2,G1,G2	20 ppb	0 ppb	<20 ppb
Ochratoxin A	20 ppb	0 ppb	<20 ppb

Comments

• All testing was completed onsite at 6073 US93N, Olney MT •• Potency (cannabinoid concentration) is calculated from the equation: [cannabinoid] = [cannabinoid]<sub>HPLC</sub> x volume<sub>dilution</sub> / m<sub>dry</sub>. Terpene concentration is calculated from the equation: [terpene] = (terpene mass)<sub>GCMS</sub> / m<sub>dry</sub>. ••• Decarboxyted cannabinoid concentration is calculated from the equation XXX<sub>total</sub> = 0.877 x XXX<sub>a</sub> + XXX ••• Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula S<sub>y</sub><sup>2</sup> = Σ (∂f/∂i)<sup>2</sup> s<sub>i</sub><sup>2</sup> where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) ± t<sub>CL90</sub> X S<sub>y</sub>. Sampling error is not

Certified by:

Kyle Larson, MSc (Biology)  
 Deputy Director  
 6073 US93N, Olney MT 59927  
 406-881-2019 rdb@stwlabs.com

Printed 3/4/2020 1:42 PM

prallethrin	0.00 ppm	<10ppb
propiconazole	0.00 ppm	<10ppb
pyridaben	0.00 ppm	<10ppb
spiroxamine	0.00 ppm	<10ppb
tebuconazole	0.00 ppm	<10ppb
thiacloprid	0.00 ppm	<10ppb
thiamethoxam	0.00 ppm	<10ppb