

4301 ESS

Batch ID:	N/A	Test ID:	9162534.020
Reported:	14-Jul-2019	Method:	Concentrate - Test Methods: TM05, TM06
Type:	Concentrate		
Test:	Microbial Contaminants		

MICROBIAL CONTAMINANTS


Contaminant	Result (CFU/g)*
Total Aerobic Count**	None Detected
Total Coliforms**	None Detected
Total Yeast and Molds**	None Detected
E. coli	None Detected
Salmonella	None Detected

* CFU/g = Colony Forming Unit per Gram

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

Examples: $10^2 = 100$ CFU
 $10^3 = 1,000$ CFU
 $10^4 = 10,000$ CFU
 $10^5 = 100,000$ CFU

NOTES:

Free from visual mold, mildew, and foreign matter
TYM: None Detected
Total Aerobic: None Detected**FINAL APPROVAL**
Robert Belfon
14-Jul-2019
1:46 PM
Mike Branvold
14-Jul-2019
9:10 PM

PREPARED BY / DATE

APPROVED BY / DATE

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CERTIFICATE OF ANALYSIS

Customer: Bluebird Botanicals

Collection Date: 07/11/2019
Order Date: 07/11/2019
Report Date: 07/18/2019
Order #702279
Batch # 04301 ESS

Initial Weight: 67750.00/mg
Specimen Weight: 304.10/mg
Specimen Type: Extract
Extracted From: HEMP
Description: Hemp Lotion

Pesticides

(LCMS/MS)

Analyte	ppb	Analyte	ppb	Analyte	ppb
Abamectin	<50	Acephate	<50	Acequinocyl	<50
Acetamiprid	<50	Aldicarb	<50	Azoxystrobin	<50
Bifenazate	<50	Bifenthrin	<50	Boscalid	<50
Carbaryl	<50	Carbofuran	<50	Chlorantraniliprole	<50
Chlorpyrifos	<50	Clofentazine	<50	Cypermethrin	<50
Daminozide	<50	Diazinon	<50	Dichlorvos	<50
Dimethoate	<50	Ethoprophos	<50	Etofenprox	<50
Etoxazole	<50	Fenoxycarb	<50	Fipronil	<50
Flonicamid	<50	Fludioxonil	<50	Hexythiazox	<50
Imazalil	<50	Imidacloprid	<50	Kresoxim Methyl	<50
Malathion A	<50	Metalaxyl	<50	Methiocarb	<50
Methomyl	<50	MGK-264	<50	Myclobutanil	<50
Naled	<50	Oxamyl	<50	Paclbutrazol	<50
Parathion-methyl	<50	Permethrin	<50	Phosmet	<50
Piperonylbutoxide	<50	Prallethrin	<50	Propiconazole	<50
Propoxur	<50	Pyrethrins	<50	Pyridaben	<50
Spinosyn A	<50	Spinosyn D	<50	Spiromesifen	<50
Spirotetramat	<50	Spiroxamine	<50	Tebuconazole	<50
Thiacloprid	<50	Thiamethoxam	<50	Trifloxystrobin	<50

Thomas Farrell, MD
Lab Director

* Total CBD = CBD + (CBD-A * 0.877). Total THC = THCA-A * 0.877 + Delta 9 THC. T-Caryophyllene = Trans-Caryophyllene, ND = Not Detected, QNS = Quantity Not Sufficient. (%) = Percent, (ppm) = Parts per Million, (cfu) = Colony Forming Unit, (ppb) = Parts per Billion, (µg/Kg) = Microgram per Kilogram, (mg/g) = Milligram per Gram.

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CERTIFICATE OF ANALYSIS

Customer: Bluebird Botanicals

Collection Date: 07/11/2019	Initial Weight: 67750.00/mg
Order Date: 07/11/2019	Specimen Weight: 304.10/mg
Report Date: 07/18/2019	Specimen Type: Extract
Order # 702279	Extracted From: HEMP
Batch # 04301 ESS	Description: Hemp Lotion

Heavy Metals (ICP-MS)

Analyte	ppb	Analyte	ppb	Analyte	ppb
Arsenic (As)	<10	Cadmium (Cd)	<10	Lead (Pb)	<10
Mercury (Hg)	<10				

Mycotoxins (LCMS/MS)

Analyte	(µg/Kg)	Analyte	(µg/Kg)	Analyte	(µg/Kg)
Aflatoxin B1	<5	Aflatoxin B2	<5	Aflatoxin G1	<5
Aflatoxin G2	<5	Aflatoxin Total	<5	Ochratoxin A	<5

Thomas Farrell, MD
Lab Director

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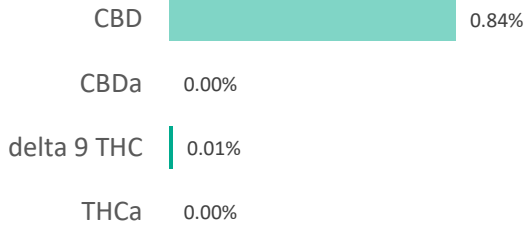
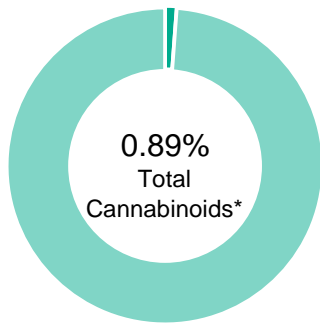
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4301 ESS

Batch ID:	REP 1	Test ID:	2155729.0011
Reported:	11-Jul-2019	Method:	TM14
Type:	Concentrate		
Test:	Potency		

CANNABINOID PROFILE


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.02	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.01	0.1
Cannabidiolic acid (CBDA)	0.02	0.00	0.0
Cannabidiol (CBD)	0.01	0.84	8.4
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.01	0.00	0.0
Cannabinolic Acid (CBNA)	0.02	0.00	0.0
Cannabinol (CBN)	0.01	0.00	0.0
Cannabigerolic acid (CBGA)	0.01	0.00	0.0
Cannabigerol (CBG)	0.01	0.00	0.0
Tetrahydrocannabivarinic Acid (THCVA)	0.01	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.01	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.02	0.00	0.0
Cannabidivarin (CBDV)	0.01	0.00	0.0
Cannabichromenic Acid (CBCA)	0.01	0.00	0.0
Cannabichromene (CBC)	0.01	0.04	0.4
Total Cannabinoids		0.89	8.90
Total Potential THC**		0.01	0.10
Total Potential CBD**		0.84	8.40

NOTES:


N/A


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

* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

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

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$
FINAL APPROVAL


Sam Smith
 11-Jul-2019
 2:06 PM
 PREPARED BY / DATE

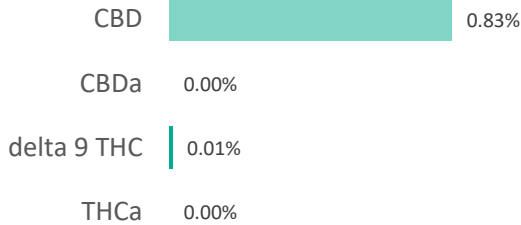
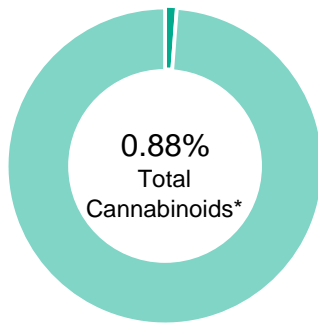

Greg Zimpfer
 11-Jul-2019
 2:16 PM
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4301 ESS

Batch ID:	REP 2	Test ID:	2155729.0012
Reported:	11-Jul-2019	Method:	TM14
Type:	Concentrate		
Test:	Potency		

CANNABINOID PROFILE



Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.01	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.01	0.1
Cannabidiolic acid (CBDA)	0.02	0.00	0.0
Cannabidiol (CBD)	0.01	0.83	8.3
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.01	0.00	0.0
Cannabinolic Acid (CBNA)	0.02	0.00	0.0
Cannabinol (CBN)	0.01	0.00	0.0
Cannabigerolic acid (CBGA)	0.01	0.00	0.0
Cannabigerol (CBG)	0.01	0.00	0.0
Tetrahydrocannabivarinic Acid (THCVA)	0.01	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.01	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.02	0.00	0.0
Cannabidivarin (CBDV)	0.01	0.00	0.0
Cannabichromenic Acid (CBCA)	0.01	0.00	0.0
Cannabichromene (CBC)	0.01	0.04	0.4
Total Cannabinoids		0.88	8.80
Total Potential THC**		0.01	0.10
Total Potential CBD**		0.83	8.30

 NOTES:
 N/A

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


* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

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

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and } \text{Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$
FINAL APPROVAL


Sam Smith
 11-Jul-2019
 2:06 PM

PREPARED BY / DATE



Greg Zimpfer
 11-Jul-2019
 2:16 PM

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CERTIFICATE OF ANALYSIS



Customer: Bluebird Botanicals

Collection Date: 08/01/2019
Order Date: 08/01/2019
Report Date: 08/05/2019
Order #703085
Batch # 04301 ESS

Net Serving Size: 92589.00/mg
Specimen Weight: 11.30/mg
Specimen Type: Extract
Extracted From: Hemp
Description: Hemp Lotion
Net Weight: 3345(mg)

Residual Solvents				(GC/GCMS)	
Analyte	ppm	Analyte	ppm	Analyte	ppm
Acetone	ND	Benzene	ND	Chloroform	ND
Ethanol	ND	I-Butane	ND	Isopropanol	ND
Methanol	ND	N-Butane	ND	Pentane	ND
Toluene	ND				

Thomas Farrell, MD
Lab Director

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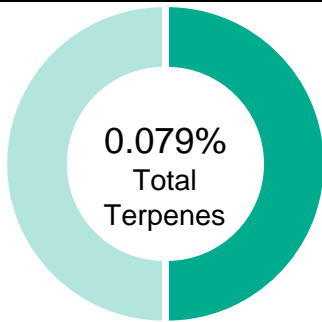
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4301 ESS

Batch ID:	N/A	Test ID:	6256925.0022
Reported:	16-Jul-2019	Method:	TM10
Type:	Concentrate		
Test:	Terpenes		


TERPENE PROFILE



Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.000	0
Camphene	0.000	0
delta-3-Carene	0.000	0
beta-Caryophyllene	0.017	0.17
(-)-Caryophyllene Oxide	0.028	0.28
p-Cymene	0.000	0
Eucalyptol	0.017	0.17
Geraniol	0.000	0
alpha-Humulene	0.000	0
(-)-Isopulegol	0.000	0
d-Limonene	0.000	0
Linalool	0.000	0
beta-Myrcene	0.000	0
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.000	0
beta-Ocimene	0.000	0
alpha-Pinene	0.017	0.17
(-)-beta-Pinene	0.000	0
alpha-Terpinene	0.000	0
gamma-Terpinene	0.000	0
Terpinolene	0.000	0
	0.079%	0.79

PREDOMINANT TERPENES

alpha-Pinene	0.017%
(-)-beta-Pinene	0.000%
beta-Myrcene	0.000%
delta-3-Carene	0.000%
alpha-Terpinene	0.000%
d-Limonene	0.000%
Linalool	0.000%
beta-Caryophyllene	0.017%
alpha-Humulene	0.000%
(-)-alpha-Bisabolol	0.000%

NOTES:

FINAL APPROVAL

 Greg Zimpfer
 16-Jul-2019
 10:42 AM


 David Green
 16-Jul-2019
 10:50 AM

PREPARED BY / DATE

APPROVED BY / DATE

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