

SUMMARY OF ANALYSIS (SAMPLE ID: SA2020-24047)

Order ID: OR2020-7547 Lot Number: Not Entered Batch Number: Not Entered	Sample Type: Primary Matrix: Concentrate Mass: 2g Date Collected: 03/12/2020 Date Received: 03/12/2020
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Cultivar (Strain) or Sample Description: CBG

Date Completed: 03/17/2020

*This page is simply a summary of the analysis performed. For analytical details, please consult the individual Certificate(s) of Analysis for each of the specific test(s) performed.

*For Oklahoma, with the new OMMA rules to be effective April 1, 2020, limits on moisture are proposed at 15% and water activity at 0.65aw.

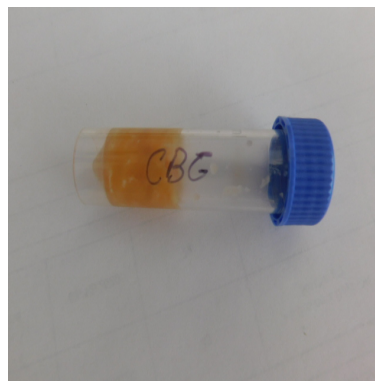
Moisture Content (%)	PASS/FAIL	Water Activity (aw)	PASS/FAIL
Not Tested	N/A	Not Tested	N/A

<u>Cannabinoids (Top 3)</u>	<u>(%)</u>	<u>mg/g</u>
CBG	83.5	835
CBD	2.97	30
Δ9-THC	0.752	8
TOTAL CBD	2.97	30
TOTAL THC	0.752	8
TOTAL CANNABINOIDS	87.7	877

<u>Terpenes (Top 5)</u>	<u>(%)</u>	<u>μg/g</u>
Geraniol	0.013	131
α-Bisabolol	0.000	0
Camphene	0.000	0
δ-3-Carene	0.000	0
β-Caryophyllene	0.000	0
TOTAL TERPENES	0.0131	131

<u>Contaminants</u>	<u>PASS/FAIL</u>
Heavy Metals:	PASS
Microbiology:	PASS
Mycotoxins:	PASS
Pesticides:	PASS
Residual Solvents:	PASS
Visual Inspection:	PASS

Sample Picture Upon Receipt



Scan the QR code to verify results.

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CANNABINOID (POTENCY) PROFILE

Analysis Date/Time: 03/13/2020 1025

Method: HPLC/DAD

Moisture Content (%): -

Analyst:

Instrument: Agilent 1100

Water Activity (aw): -

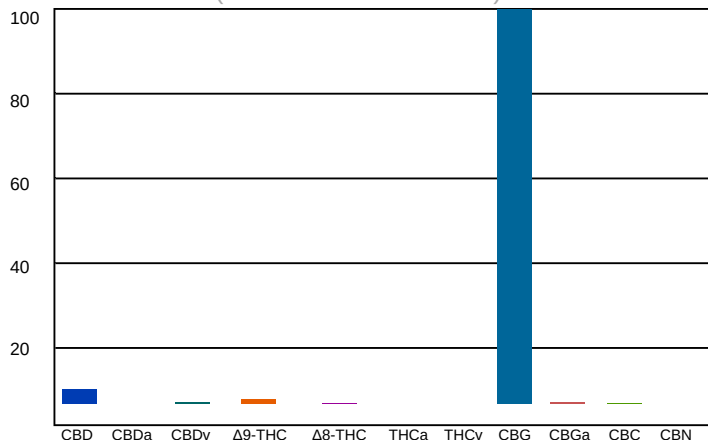
Cannabinoid	Result (%)	Result (mg/g)	Reporting Limit (mg/g)	Result (mg/mL)	Per Unit (mg)
CBD	2.97	29.7	0.495	-	30
CBDa	-	-	0.495	-	-
CBDv	0.112	1.12	0.495	-	1.12
Δ9-THC	0.752	7.52	0.495	-	8
Δ8-THC	0.0698	0.698	0.495	-	0.698
THCa	-	-	0.495	-	-
THCv	-	-	0.495	-	-
CBC	0.0575	0.575	0.495	-	0.575
CBG	83.5	835	0.495	-	835
CBGa	0.258	2.58	0.495	-	3
CBN	-	-	0.495	-	-
TOTAL	87.7	877			877
TOTAL THC	0.752	7.52			8
TOTAL CBD	2.97	30			30



UNIT MASS (g): 1

"-" Not detected above RL.

Cannabinoid Distribution (% of Total Cannabinoids)



Deviations from standard operating procedure: None

Recoveries for all analyte standards: 90-110%
Replicate Uncertainties: <5% RSD, <20% RPD
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total THC = (THCa x 0.877) + Δ9-THC
Total CBD = (CBDa x 0.877) + CBD

Percentage results are reported by mass.
mg/g results are reported as mass component per mass material.

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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Kyle W. Felling
Kyle W. Felling, Ph.D.
Laboratory Director

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Date Completed: 03/17/2020

TERPENOID PROFILE

Analysis Date/Time: 03/13/2020 1025

Method: HS/GC/FID (Internal Method-002)

Deviations from SOP:

Analyst: DJ

Instrument: Agilent 6890

None

<u>Terpene</u>	<u>Result</u> (µg/g)	<u>Result</u> (%)
α-Bisabolol	-	-
Camphene	-	-
δ-3-Carene	-	-
β-Caryophyllene	-	-
Caryophyllene oxide	-	-
p-Cymene	-	-
Eucalyptol	-	-
Geraniol	131	0.0131
Guaiol	-	-
α-Humulene	-	-
Isopulegol	-	-
d-Limonene	-	-
Linalool	-	-
β-Myrcene	-	-
cis-Nerolidol	-	-
trans-Nerolidol	-	-
α-Ocimene	-	-
β-Ocimene	-	-
α-Pinene	-	-
β-Pinene	-	-
α-Terpinene	-	-
γ-Terpinene	-	-
Terpinolene	-	-



Abbreviations: HS - Headspace, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit

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"-" Not detected above RL.

TOTAL 131 0.0131 **Reporting Limit (µg/g): 19.8**



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Date Completed: 03/17/2020

RESIDUAL SOLVENT PROFILE

Analysis Date/Time: 03/13/2020 1025

Method: USP <467>

Deviations from SOP:

Analyst: DJ

Instrument: Agilent 6890

None

Solvent	Result (µg/g)	Action Level (µg/g)
Acetone (67-64-1)	-	1000
Benzene (71-43-2)	-	2
n-Butane (106-97-2)	-	1000
2,2-Dimethylbutane (75-83-2)	-	60
2,3-Dimethylbutane (79-29-8)	-	60
Ethyl benzene (100-41-4)	-	430
n-Heptane (142-82-5)	-	1000
n-Hexane (110-54-3)	-	60
Isobutane (75-28-5)	-	1000
Isopropanol (67-63-0)	-	1000
2-Methylbutane (78-78-4)	-	1000
2-Methylpentane (107-83-5)	-	60
3-Methylpentane (96-10-0)	-	60
n-Pentane (109-66-0)	-	1000
n-Propane (74-98-6)	-	1000
Toluene (108-88-3)	-	180
o-Xylene (95-47-6)	-	430
m,p-Xylene (108-38-3 or 106-42-3)	-	430
Xylenes* (1330-20-7)	-	430

Color Key
RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/g)
1/2 of AL

"-" not detected above reporting limit

"*" - o,m,p-Xylene and Ethylbenzene



Solvent	Synonym(s)	Solvent	Synonym(s)	Solvent	Synonym(s)
Acetonitrile	Methyl Cyanide, ACN	2-Ethoxyethanol	Cellosolve, Ethyl glycol	Methanol	Methyl alcohol
1-Butanol	n-Butanol, Butyl Alcohol	Ethyl ether	Diethyl ether, Ether	2-Methylbutane	Isopentane
2-Butanol	sec-Butyl alcohol	Ethyl acetate	EtOAc	Methylene chloride	Dichloromethane
2-Butanone	Methyl ethyl ketone, MEK	Ethyl benzene	Phenylethane	2-Methylpentane	Isohexane
1,2-Dimethoxyethane	Monoglyme	Ethylene glycol	1,2-Ethandiol	1-Pentanol	n-Amyl alcohol
2,3-Dimethylbutane	Neohexane	Ethylene oxide	Oxirane	1-Propanol	Propyl alcohol
2,3-Dimethylbutane	Diisopropyl	Isobutane	2-Methylpropane	Tetrahydrofuran	THF
N,N-Dimethylformamide	DMF	Isopropanol	2-Propanol, IPA	Tetramethylene sulfone	Sulfolane
Dimethylsulfoxide	DMSO	Isopropyl Acetate	Acetic acid isopropyl ester	Xylene	Dimethylbenzene

Abbreviations: HS-Headspace, GC-Gas Chromatography, MS-Mass Spectrometry, RL-Reporting Limit, AL-Action Level
CAS-Chemical Abstract Services

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Date Completed: 03/17/2020

PESTICIDES PROFILE

Analysis Date/Time: 03/13/2020 1025

Method: LC/MS/MS

Deviations from SOP:

Analyst: DJ

Instrument: Waters Acquity/TQD

None

<u>Pesticide</u>	<u>Result</u> (µg/g)	<u>Action Level</u> (µg/g)
Abamectin (71751-41-2)	-	0.5
Azoxystrobin (131860-33-8)	-	0.5
Bifenazate* (149877-41-8)	-	0.5
Etiozazole (153233-91-1)	-	0.5
Imazalil (35554-44-0)	-	0.5
Imidacloprid (138261-41-3)	-	0.5
Malathion (121-75-5)	-	0.5
Myclobutanil (88671-89-0)	-	0.5
Permethrins* (52645-53-1)	-	0.5
Spinosad A (168316-95-8)	-	0.5
Spinosad D (168316-95-8)	-	0.5
Spiromesifen (283594-90-1)	-	0.5
Spirotetramat (203313-25-1)	-	0.5
Tebuconazole (80443-41-0)	-	0.5

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/g)
1/2 of AL

"-" not detected above reporting limit

"*" analyzed by GC/MS
(all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*-permethrin isomers.



Abbreviations: LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>
Cyfluthrin	Baythroid	Myclobutanil	Systhane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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Not Entered

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Not Entered

Date Received: 03/12/2020**Cultivar (Strain) or Sample Description:** CBG**Date Completed:** 03/17/2020**MYCOTOXIN PROFILE****Analysis Date/Time:** 03/13/2020 1025**Method:** LC/MS/MS**Deviations from SOP:****Analyst:** DJ**Instrument:** Waters Acquity/TQD

None

<u>Mycotoxin</u>	<u>Result</u> (µg/kg)	<u>Action Level</u> (µg/kg)
Aflatoxin B1	-	20
Aflatoxin B2	-	20
Aflatoxin G1	-	20
Aflatoxin G2	-	20
Ochratoxin A	-	20



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit,
RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)

1

"- " not detected above
reporting limit

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Not Entered

Mass: 2g**Batch Number:****Date Collected:** 03/12/2020

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Date Received: 03/12/2020**Cultivar (Strain) or Sample Description:** CBG**Date Completed:** 03/17/2020**HEAVY METAL PROFILE****Analysis Date/Time:** 03/13/2020 1025**Method:** ICP/MS**Deviations from SOP:****Analyst:** CC**Instrument:** PerkinElmer Elan 9000

None

Heavy Metal**Result**
(µg/kg)**Action Level**
(µg/kg)

Arsenic (As)	-	400
Cadmium (Cd)	-	440
Lead (Pb)	-	1000
Mercury (Hg)	-	200



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy,
MS - Mass Spectroscopy, RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/kg)
50"- " not detected above
reporting limit

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Not Entered

Mass: 2g

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Date Completed: 03/17/2020

MICROBIOLOGICAL PROFILE

Analysis Date/Time: 03/13/2020 1025

Method: Hardy Diagnostics CompactDry

Deviations from SOP:

Analyst: KB

Instrument: Thermo Incubator

None

<u>Bacteria/Microbe</u>	<u>Result</u> (CFU/g)	<u>Action Level</u> (CFU/g)
Aerobic Plate Count, Total	Absent	-
Escherichia Coli (E. Coli)	Absent	1
Mold	Absent	10000
Yeast	Absent	10000
Salmonella spp.	Absent	1



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit,
RL - Reporting Limit, AL - Action Level, NT - Not Tested

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)

1

"-" not detected above
reporting limit

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