

SUMMARY OF ANALYSIS (SAMPLE ID: SA26185)

Testing Location: OKC 3680 E. I-240 Service Rd. Oklahoma City, OK 73135	Customer ID: 4 Bison Extracts 1420 S Joplin Ave Tulsa, OK 74112 License: PAAA-4KW0-GFNQ	Order ID: OR8142 Lot Number: Not Entered Batch Number: 5490	Sample Type: Primary Matrix: Edible Mass: 5g Date Collected: 04/23/2020 Date Received: 04/23/2020
Cultivar (Strain) or Sample Description: Indica Grape Pupil			Date Completed: 04/29/2020

*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 (%) Not Tested	PASS/FAIL N/A	Water Activity (aw) Not Tested	PASS/FAIL N/A
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Cannabinoids (Top 3)	(%)	mg/g
Δ9-THC	0.124	1.24
THCa	0.0648	0.648
CBGa	0.00318	0.0318
TOTAL CBD	0.00256	0.0256
TOTAL THC	0.181	1.81
TOTAL CANNABINOIDS	0.195	1.95

Terpenes (Top 5)	(%)	µg/g
cis-Nerolidol	0.006	64
β-Caryophyllene	0.004	41
α-Humulene	0.002	19
α-Bisabolol	0.001	8
Camphene	0.000	0
TOTAL TERPENES	0.0132	132

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



Scan the QR code to verify results.

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



CERTIFICATE OF ANALYSIS (SAMPLE ID: SA26185)

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Cultivar (Strain) or Sample Description: Indica Grape Pupil **Date Completed:** 04/29/2020

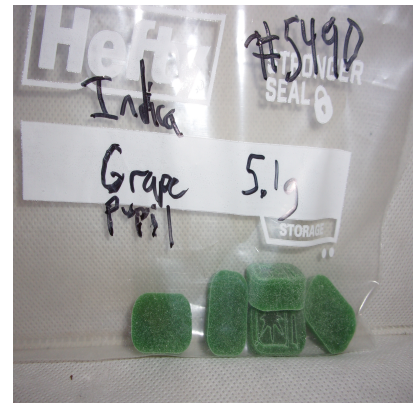
CANNABINOID (POTENCY) PROFILE

Analysis Date/Time: 04/27/2020 1008
Analyst: WW

Method: HPLC/DAD
Instrument: Agilent 1100

Moisture Content (%): -
Water Activity (aw): -

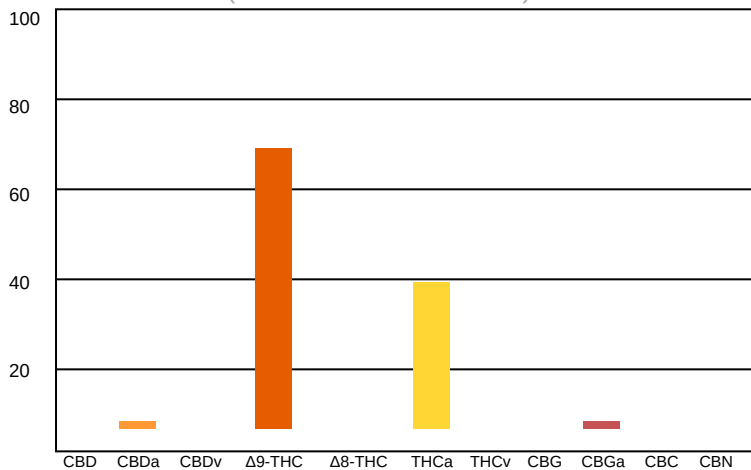
Cannabinoid	Result (%)	Result (mg/g)	Reporting Limit (mg/g)	Result (mg/mL)	Per Unit (mg)
CBD	-	-	0.025	-	-
CBDa	0.00292	0.0292	0.025	-	0.149
CBDv	-	-	0.025	-	-
Δ9-THC	0.124	1.24	0.025	-	6
Δ8-THC	-	-	0.025	-	-
THCa	0.0648	0.648	0.025	-	3
THCv	-	-	0.025	-	-
CBC	-	-	0.025	-	-
CBG	-	-	0.025	-	-
CBGa	0.00318	0.0318	0.025	-	0.162
CBN	-	-	0.025	-	-
TOTAL	0.195	1.95			10
TOTAL THC	0.181	1.81			9
TOTAL CBD	0.00256	0.0256			0.131



UNIT MASS (g): 5.1

"-" 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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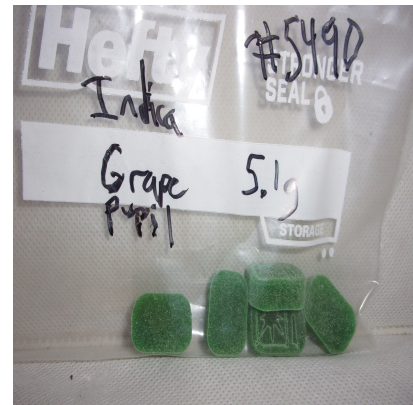
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Cultivar (Strain) or Sample Description: Indica Grape Pupil **Date Completed:** 04/29/2020

TERPENOID PROFILE

Analysis Date/Time: 04/27/2020 1008 **Method:** HS/GC/FID (Internal Method-002) **Deviations from SOP:**
Analyst: DJ **Instrument:** Agilent 6890 None

<u>Terpene</u>	<u>Result (µg/g)</u>	<u>Result (%)</u>	
α-Bisabolol	8	0.000802	■
Camphene	-	-	
δ-3-Carene	-	-	
β-Caryophyllene	41	0.00414	■
Caryophyllene oxide	-	-	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	-	-	
α-Humulene	19	0.00187	■
Isopulegol	-	-	
d-Limonene	-	-	
Linalool	-	-	
β-Myrcene	-	-	
cis-Nerolidol	64	0.00642	■
trans-Nerolidol	-	-	
α-Ocimene	-	-	
β-Ocimene	-	-	
α-Pinene	-	-	
β-Pinene	-	-	
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	-	-	
TOTAL	132	0.0132	



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

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"-" Not detected above RL.

Reporting Limit (µg/g): 1

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Cultivar (Strain) or Sample Description: Indica Grape Pupill **Date Completed:** 04/29/2020

RESIDUAL SOLVENT PROFILE

Analysis Date/Time: 04/27/2020 1008

Method: USP <467>

Deviations from SOP:

Analyst: CC

Instrument: Agilent 6890

None

<u>Solvent</u>	<u>Result (µg/g)</u>	<u>Action Level (µg/g)</u>
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



<u>Solvent</u>	<u>Synonym(s)</u>	<u>Solvent</u>	<u>Synonym(s)</u>	<u>Solvent</u>	<u>Synonym(s)</u>
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-Ethanediol	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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Cultivar (Strain) or Sample Description: Indica Grape Pupil **Date Completed:** 04/29/2020

PESTICIDES PROFILE

Analysis Date/Time: 04/27/2020 1008
Analyst: DJ

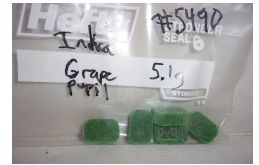
Method: LC/MS/MS
Instrument: Waters Acquity/TQD

Deviations from SOP:
None

<u>Pesticide</u>	<u>Result (µg/g)</u>	<u>Action Level (µg/g)</u>
Abamectin (71751-41-2)	-	0.5
Azoxystrobin (131860-33-8)	-	0.5
Bifenazate* (149877-41-8)	-	0.5
Etoxazole (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	Sythane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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MYCOTOXIN PROFILE

Analysis Date/Time: 04/27/2020 1008 **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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HEAVY METAL PROFILE

Analysis Date/Time: 04/27/2020 1008 **Method:** ICP/MS **Deviations from SOP:**
Analyst: CC **Instrument:** PerkinElmer Elan 9000 None

<u>Heavy Metal</u>	<u>Result (µg/kg)</u>	<u>Action Level (µg/kg)</u>
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

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MICROBIOLOGICAL PROFILE

Analysis Date/Time: 04/27/2020 1008 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: KB **Instrument:** Thermo Incubator None

<u>Bacteria/Microbe</u>	<u>Result (CFU/g)</u>	<u>Action Level (CFU/g)</u>
Aerobic Plate Count, Total	TNTC	-
Escherichia Coli (E. Coli)	Absent	1
Mold/Yeast	Absent	104
Salmonella spp.	Absent	1
Staphylococcus Aureus	Absent	1



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, TNTC - Too Numerous To Count, NT - Not Tested
 Absent - Not Detected Above RL, Present - Detected Above RL

Color Key

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1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)
1

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