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**TEST REPORT**

**REPORT NO.: 20-06-16974**

**CHEMICAL/MICROBIOLOGICAL  
ANALYTICAL REPORT**

**Nature of Product: CBD Full Spectrum Oil Sample.**

**Date of Report: 17<sup>th</sup>. June 2020.**

**Sample Reference: Unwind 1000mg CBD Oil.**

**Sample Volume: 1 x 10mls.**

**Date of Sample: 10<sup>th</sup>. June 2020.**

**TEST REPORT****REPORT NO.: 20-06-16974****Part A – Product Safety Microbiological Analysis****Sample Reference: Unwind 1000mg CBD Oil.****Method of Analysis: Manual Pour Plate Method****Microbiological Analysis**

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Staph. aureus	Pour Plate Count	APHA 9222	CFU/ml.	ND
Salmonella spp.	Pour Plate Count	APHA 9222	CFU/ml.	ND
Listeria spp.	Pour Plate Count	APHA 9222	CFU/ml.	ND
Bacillus cereus	Pour Plate Count	APHA 9222	CFU/ml.	ND
Clostridia spp.	Pour Plate Count	APHA 9222	CFU/ml.	ND
Enterobacteriaceae	Pour Plate Count	APHA 9222	CFU/ml.	ND
Esch. Coli	Pour Plate Count	APHA 9222	CFU/ml.	ND
Yeasts/Molds	Pour Plate Count	APHA 9222	CFU/ml.	ND

**Part B – Product Safety Chemical Analysis****Sample Reference: Unwind 1000mg CBD Oil.****Method of Analysis: Inductively Coupled Plasma – Optical Emission Spectroscopy ICP-OES****Heavy Metals Analysis**

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Mercury as Hg.	Cold Vapour AAS	EC 1881	CFU/ml.	< 0.002
Chromium as Cr.	ICP-OES	EC 1881	CFU/ml.	< 0.002
Arsenic as As.	ICP-OES	EC 1881	CFU/ml.	< 0.0005
Cadmium as Cd.	ICP-OES	EC 1881	CFU/ml.	< 0.003
Nickel as Ni.	ICP-OES	EC 1881	CFU/ml.	< 0.002
Lead as Pb.	ICP-OES	EC 1881	CFU/ml.	< 0.002

**TEST REPORT****REPORT NO.: 20-06-16974****Part C – Product Safety Chemical Analysis****Sample Reference: Unwind 1000mg CBD Oil.****Method of Analysis: High Performance Liquid Chromatography-Mass Spectrometry HPLC-MS-MS****Pesticide Residues Analysis**

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Organochlorine	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.002
Organophosphorus	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.002
Organonitrogen	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.050
Carbamate Pesticides	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.030
Pyrethroid Residues	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.001
Organotin	HPLC-MS-MS	APHA 6630	µg/ml.	< 0.002

**Part D – Product Safety Chemical Analysis****Sample Reference: Unwind 1000mg CBD Oil.****Method of Analysis: High Performance Liquid Chromatography-Photodiode Array Detection HPLC-PDA****Aflatoxins/Mycotoxins Analysis**

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Ochratoxin	HPLC-PDA	EC 401	µg/ml.	< 0.01
Aflatoxins Scan	HPLC-PDA	EC 401	µg/ml.	< 0.01
B1	HPLC-PDA	EC 401	µg/ml.	< 0.002
B2	HPLC-PDA	EC 401	µg/ml.	< 0.05
G1	HPLC-PDA	EC 401	µg/ml.	< 0.001
G2	HPLC-PDA	EC 401	µg/ml.	< 0.005

**TEST REPORT****REPORT NO.: 20-06-16974****Part E – Product Safety Chemical Analysis****Sample Reference: Unwind 1000mg CBD Oil.****Method of Analysis: Method of Analysis: Gas Chromatography- Flame Ionization Detection GC-FID****Residual Solvents**

<b>Parameter</b>	<b>Method of Analysis</b>	<b>Method Reference</b>	<b>Units</b>	<b>Reported Levels</b>
Methanol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.05
Pentane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.02
Diethyl Etyher	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.008
Acetone	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.03
Acetonitrile	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.05
Dichloromethane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.001
n-Hexane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.02
Ethyl acetate	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.05
Chloroform	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.005
Benzene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.002
Tetrachloromethane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.001
1,2-Dichloroethane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.001
Heptane	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.02
Trichloroethylene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.02
Toluene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.002
Xylenes (Total)	GC-FID	Shimadzu HS-GC-FID	mg/ml.	< 0.002

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## Cannabinoids Analysis

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Cannabidiol CBD.	UHPLC-MS-MS	JHG-249	mg/ml.	97.500
Cannabigerol CBG.	UHPLC-MS-MS	JHG-249	mg/ml.	0.345
Cannabichromene CBC.	UHPLC-MS-MS	JHG-249	mg/ml.	0.110
Delta-9-Tetrahydrocannabinol THC.	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Delta-9-Tetrahydrocannabinolic acid THC-A.	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Cannabidiol acid CBD-A	UHPLC-MS-MS	JHG-249	mg/ml.	2.135
Cannabigerolic acid CBG-A	UHPLC-MS-MS	JHG-249	mg/ml.	0.035
Cannabidivarin CBDV	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Cannabidivarin acid CBDV-A	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Tetrahydrocannabivarin THCV	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Tetrahydrocannabivarin acid THCV-A	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Cannabinol CBN.	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected
Cannabicyclol CBL.	UHPLC-MS-MS	JHG-249	mg/ml.	Not Detected

**Comment:**

Result of Delta-9-Tetrahydrocannabinol (THC) and Delta-9-Tetrahydrocannabinolic acid (THC-A) of less than 0.0005% is based on Limit of Detection (LOD) for the Instrumentation used in this method. This is the smallest concentration of analyte that can be reported and is based on analysis of a minimum of 7 spiked samples and 7 method blank samples.

## TEST REPORT

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## Terpenes Analysis

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
$\beta$ -Caryophellene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	6
Myrcene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	5
$\beta$ -Sitosterol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	5
Terpinolene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	3
$\alpha$ -Pinene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	1.70
$\beta$ -Pinene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	1.25
Bergamotene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2
Limonene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2
Merolidol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2
Linalool	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2.50
Humulene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2
Bisabolol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2.70
Valencene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	3.35
Terpineol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	1.50
Borneol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	2
Delta-3-Carene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	3
(Z)- $\beta$ -Ocimene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	1.50
(E)- $\beta$ -Tarnesol	GC-FID	Shimadzu HS-GC-FID	mg/ml.	1.50
Eremophelene	GC-FID	Shimadzu HS-GC-FID	mg/ml.	3
Geranyl acetate	GC-FID	Shimadzu HS-GC-FID	mg/ml.	0.07



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## **Assessment Conclusion**

All test methods were performed in accordance with the requirements of ISO: IEC 17025.

The test results relate only to the product listed in this report.

Based on the information derived, the Chemical/Microbiological shows the sample to be assessed as Microbiologically safe and free of any forbidden hazardous Chemical components and contaminants.

## **Analytical Assessor**

**John Gough B.Sc. M.Sc.**

**J.W. GOUGH**

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**Technical Signatory.**

**Dated: 17<sup>th</sup>. June 2020**