

## Chemical Content Analysis

Date: 08-03-2019

Client: Vitality CBD Ltd

Product: 600mg CBD with Hemp Seed Oil

Batch No: SH150219HB (CONO18-99)

Lab ID: CBD0170

DOP: 21/02/2019

### Visual Inspection:

Yellow liquid

### Method Summary:

0.5ml of sample was measured in a pipette and extracted in IPA to provide a sample at 0.4mg/ml. It was then diluted further in Methanol. CBD content was analysed on an Agilent HPLC fitted with a DAD detector. Content on HPLC was analysed against a standard calibration of CBD, CBN and THC, supplied by Restek, as well as CBDA and THCA supplied by Sigma-Aldrich. The results are presented in Table 1 and Figure 1 below.

| Compound                            | CAS Number | Concentration (mg/ml) | LoQ (µg/ml) |
|-------------------------------------|------------|-----------------------|-------------|
| Cannabidiol                         | 13956-291  | 21.39                 | 0.1         |
| Cannabinol                          | 521-35-7   | BQL                   | 0.1         |
| Delta-9- Tetrahydrocannabinol       | 1972-08-3  | BQL                   | 0.1         |
| Cannabidiolic Acid                  | 1244-58-2  | BQL                   | 0.1         |
| Delta-9-Tetrahydrocannabinolic Acid | 23978-85-0 | BQL                   | 0.2         |

BQL, Below Quantitation Limit.

### % Content of Sample

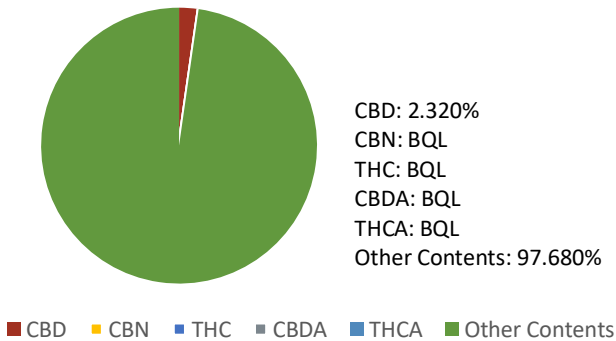


Figure 1. Pie chart of the analysis result.

### Comments:

600mg of CBD in 30ml is equivalent to 20mg/ml

CBD- Cannabidiol  
 CBDA- Cannabidiolic Acid  
 CBN- Cannabinol. The legal limit for this compound is 1mg per container.  
 THC- delta-9-Tetrahydrocannabinol.  
 THCA- delta-9-Tetrahydrocannabinolic Acid. The legal limit for both THC and THCA of this compound is 1mg per container

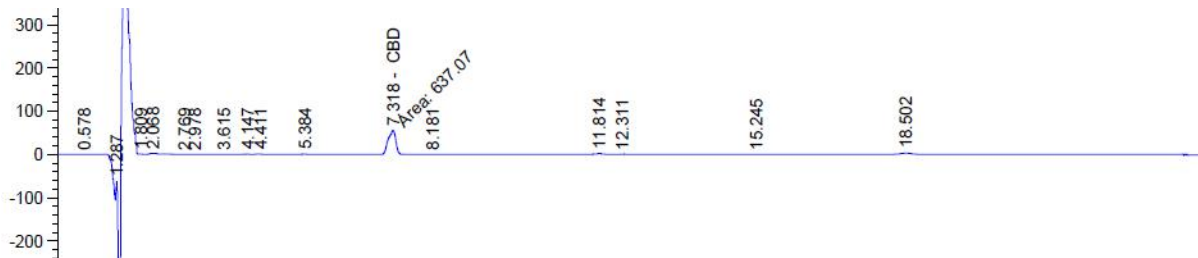


Figure 2. Chromatogram of the analysis

### Analysis By:

Lawrence Theobald

### Approved By:

Olaf Turner

DATE: 08-03-19

**CERTIFICATE OF INTERNAL ANALYSIS**
**TYPE:** Phytocannabinoid-Rich Hemp Oil/ THC-free **TERPENE RESULTS\*:**
**BATCH No:** CONO18-99

**Date of Manufacture:** 27Dec2018

**Date of Analysis:** 28Dec2018

**POTENCY RESULTS:**

| Cannabinoid  | Wt. (%) | (mg/g) |
|--------------|---------|--------|
| CBD          | 90.53   | 905.26 |
| CBG          | <0.03   | <0.30  |
| CBN          | <0.03   | <0.30  |
| THC          | ND**    | ND**   |
| CBC          | <0.03   | <0.30  |
| THC-A        | ND**    | ND**   |
| CBD-A        | <0.03   | <0.30  |
| MAX THC      | ND**    | ND**   |
| MAX CBD      | 90.53   | 905.26 |
| TOTAL ACTIVE | 90.53   | 905.26 |

|                        | Wt. (%) |                     | Wt. (%) |
|------------------------|---------|---------------------|---------|
| $\beta$ -Bisabolene    | 1.0-3.0 | Camphene            | 0.1-0.2 |
| $\beta$ -Farnesene     | 1.0-2.0 | E-Farnesene         | 0.1-0.2 |
| Guaiol                 | 0.5-2.0 | Farnesol            | 0.1-0.2 |
| $\beta$ -Maaliene      | 0.5-2.0 | $\alpha$ -Bisabolol | < 0.1   |
| Calarene               | 0.5-1.5 | P-Cymene            | < 0.1   |
| $\beta$ -Caryophyllene | 0.1-1.0 | Linalool            | < 0.1   |
| $\alpha$ -Humulene     | 0.1-1.0 | Myrcene             | < 0.1   |
| Cadinene               | 0.1-1.0 | Phytol              | < 0.1   |
| $\alpha$ -Gurjunene    | 0.1-0.5 | Isopulegol          | < 0.1   |
| d-Limonene             | 0.1-0.5 | Terpinene           | < 0.1   |
| Nerolidol              | 0.1-0.5 | Geraniol            | < 0.1   |
| $\alpha$ -Pinene       | 0.1-0.5 | Myrcene             | < 0.1   |
| Aristolene             | 0.1-0.3 | $\gamma$ -Terpinene | < 0.1   |
| Eucalyptol             | 0.1-0.2 | $\delta$ -3-Carene  | < 0.1   |

**Pesticides\*:**

|              |       |               |       |
|--------------|-------|---------------|-------|
| Acequinocyl  | ND*** | Spinosad      | ND*** |
| Pyrethrium   | ND*** | Spirotetramat | ND*** |
| Spiromesifen | ND*** | Bifenazate    | ND*** |
| Abamectin    | ND*** | Fenoxycarb    | ND*** |
| Imidacloprid | ND*** | Paclbutrazol  | ND*** |

Test ID: 122818KP

\*Batches are sent out regularly for testing, not all batches tested

\*\* ND = Not Detected using a validated high-performance liquid chromatography test method

\*\*\* Pesticides are tested by a third party lab, ND = Not Detected at the Reporting Limit (RL)

**SPECIAL NOTE:** Process enhancement has recently been implemented to remove excess pigmentation from the oil due to customer requests. While the color of the future oil batches will be golden to light amber, its composition and the full spectrum characteristics remain unchanged.

**Residual Solvents\*:**

|           |                         |             |                         |
|-----------|-------------------------|-------------|-------------------------|
| Propane   | Compliant with USP<467> | Pentane     | Compliant with USP<467> |
| Isobutane | Compliant with USP<467> | Isopropanol | Compliant with USP<467> |
| Butane    | Compliant with USP<467> | Hexane      | Compliant with USP<467> |
| Ethanol   | Compliant with USP<467> | Acetone     | Compliant with USP<467> |

**Heavy Metals\*:**

|         |                         |
|---------|-------------------------|
| Cadmium | Compliant with USP<233> |
| Lead    | Compliant with USP<233> |
| Arsenic | Compliant with USP<233> |
| Mercury | Compliant with USP<233> |

**Batch Release:**

Chemist: Kelly Pilkington



Manager: Ashley Orosco



(Updated 09Jan2019)

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