

# Certificate of Analysis

## PRODUCT INFORMATION

**Product:** Hemp Derived Whole Plant Concentrate  
**Description:** 500 mg Total CBD per 1 fl oz in Organic Hempseed Oil  
**Mfg Process:** Cold Ethanol Extraction  
**Mfg Date:** 26-Jun-19  
**Product Batch ID:** WNC01B1218X0-16B01MA  
**Production Order ID:** VS062619W1630



**Product of Vermont USA**

## PRODUCT DATA

| Parameter               | Test Procedure          | Specification         | Units    | Result      |
|-------------------------|-------------------------|-----------------------|----------|-------------|
| Appearance (20 - 25°C)  | ASTM E1627 - 11         | Amber amorphous solid | -        | PASS        |
| Odor (20 - 25°C)        | ASTM E1627 - 11         | Floral, earthy        | -        | PASS        |
| Total CBD (Potency)     | C5210-LCUV (Internal)   | 480 - 520             | mg/30 mL | 496 PASS    |
| CBDA                    | C5210-LCUV (Internal)   | ≤ 10                  | %w/w     | < 0.05 PASS |
| Delta 9-THC             | C5210-LCUV (Internal)   | ≤ 0.34                | %w/w     | 0.06 PASS   |
| THCA-A                  | C5210-LCUV (Internal)   | ≤ 0.05                | %w/w     | < 0.05 PASS |
| Minor Cannabinoids      | C6194-LCMSMS (Internal) | ≥ 0.01                | %w/w     | 0.03 PASS   |
| Terpenes                | C5933-GCMS (Internal)   | ≥ 25                  | ppm      | 68 PASS     |
| Water Activity          | D8196-18                | ≤ 0.350               | Aw       | 0.322 PASS  |
| Residual Solvent        | C5923-GCMS (Internal)   | USP 467**             | ppm      | PASS        |
| Microbiological Screen* | MCR-TM-00006 (External) | MDH Exhibit 6         | -        | PASS        |
| Heavy Metals            | MCR-TM-00006 (External) | MDH Exhibit 4         | ppb      | PASS        |
| Pesticides*             | MCR-TM-00009 (External) | MDH Exhibit 5         | ppb      | PASS        |
| Mycotoxins*             | MCR-TM-00013 (External) | MDH Exhibit 6         | ppb      | PASS        |

\*Results based on source whole plant concentrate prior to distillation; MCR Labs (Framingham, MA).

\*\*Class I & II solvents methanol, pentane, ethanol, acetone, 2-propanol, acetonitrile, n-hexane, tetrahydrofuran, chloroform, n-heptane, toluene, xylene (m,p).


\*\*\*Specification limits are set based on internal process monitoring and represent expected levels depending on the type of material described in this document.

\*\*\*\*MDH - Massachusetts Department of Health

## PRODUCT STABILITY

**Recommended Storage:** 20-25 ° C (68-77° F), Refrigerate for long term storage (> 3 months).  
**Retest Date:** 1-Jul-21 Avoid exposure to extreme hot or cold and protect from exposure to light.  
**NOTE:** Product will grow darker in color with exposure to light.

**IMPORTANT:** Some data for this product are collected using NEP internal analytical testing procedures undergoing validation. Testing results will vary within reasonable procedure performance limits. Results demonstrating regulatory compliance are provided by NEP are for directional purposes in support of manufacturing processes and are not a substitute for 3rd party lab testing of this material. External testing denoted by "(External)" in procedure field is performed by MCR Labs (Framingham, MA USA); reports available upon request.

**Approved by:**   
**Date:** 12-Jul-19  
**Name:** Keith Griswold, M.S.  
**Title:** Director of Analytics & Formulations

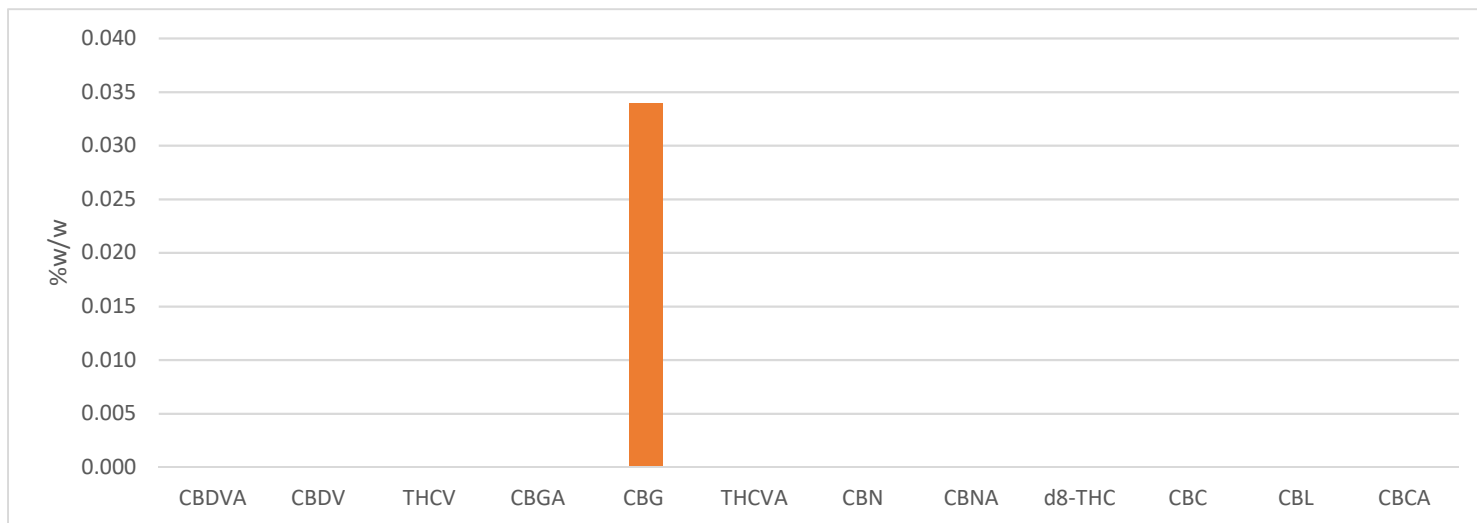
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## Minor Cannabinoids

**Product:** Hemp Derived Whole Plant Concentrate  
**Procedure ID:** C6194 LCMSMS (Internal)

**Product Batch ID:** WNC01B1218X0-16B01MA

**Total Minor Cannabinoids:** **0.03** %w/w



| Analyte                               | Reporting Limit | %W/W       | MG/G |
|---------------------------------------|-----------------|------------|------|
| Cannabidivarinic Acid (CBDVA)         | 0.005 %w/w      | Non Detect | -    |
| Cannabidivarin (CBDV)                 | 0.005 %w/w      | Non Detect | -    |
| Tetrahydrocannabivarin (THCV)         | 0.005 %w/w      | Non Detect | -    |
| Cannabigerolic Acid (CBGA)            | 0.005 %w/w      | Non Detect | -    |
| Cannabigerol (CBG)                    | 0.005 %w/w      | 0.034      | 0.34 |
| Tetrahydrocannabivarinic Acid (THCVA) | 0.005 %w/w      | Non Detect | -    |
| Cannabinol (CBN)                      | 0.005 %w/w      | < 0.005    | -    |
| Cannabinolic Acid (CBNA)              | 0.005 %w/w      | Non Detect | -    |
| Delta 8-THC                           | 0.005 %w/w      | Non Detect | -    |
| Cannabichromene (CBC)                 | 0.005 %w/w      | < 0.005    | -    |
| Cannabicyclol (CBL)                   | 0.005 %w/w      | Non Detect | -    |
| Cannabichromic Acid (CBCA)            | 0.005 %w/w      | Non Detect | -    |



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## Terpene Profile

**Product:** Hemp Derived Whole Plant Concentrate  
**Procedure ID:** C5933-GCMS (Internal)

**Product Batch ID:** WNC01B1218X0-16B01MA

**Total Terpenes:** 68 ppm

| Analyte                | Units | Reporting Limit | Results    |
|------------------------|-------|-----------------|------------|
| $\alpha$ -Pinene       | PPM   | 2               | Non Detect |
| Camphene               | PPM   | 2               | Non Detect |
| Sabinene-              | PPM   | 2               | Non Detect |
| $\beta$ -Pinene        | PPM   | 2               | Non Detect |
| $\beta$ -Myrcene       | PPM   | 2               | < 2        |
| $\alpha$ -Phellandrene | PPM   | 2               | Non Detect |
| Carene                 | PPM   | 2               | Non Detect |
| $\alpha$ -Terpinene    | PPM   | 2               | Non Detect |
| D-Limonene             | PPM   | 2               | < 2        |
| o-Cymene               | PPM   | 2               | Non Detect |
| Eucalyptol             | PPM   | 2               | Non Detect |
| $\beta$ -Ocimene       | PPM   | 2               | Non Detect |
| $\gamma$ Terpinene     | PPM   | 2               | Non Detect |
| Terpinolene            | PPM   | 2               | Non Detect |
| Sabinene Hydrate       | PPM   | 2               | Non Detect |
| Fenchone               | PPM   | 2               | Non Detect |
| Linalool               | PPM   | 2               | Non Detect |
| Fenchol                | PPM   | 2               | Non Detect |
| Isopulegol             | PPM   | 2               | Non Detect |
| Camphor                | PPM   | 2               | Non Detect |
| Isoborneol             | PPM   | 2               | Non Detect |
| Menthol                | PPM   | 2               | Non Detect |
| endo-Borneol           | PPM   | 2               | Non Detect |
| $\alpha$ -Terpineol    | PPM   | 2               | 4.7        |
| $\gamma$ Terpineol     | PPM   | 2               | Non Detect |
| Nerol                  | PPM   | 2               | Non Detect |
| Pulegone               | PPM   | 2               | Non Detect |
| Geraniol               | PPM   | 2               | Non Detect |
| Geranyl acetate        | PPM   | 2               | Non Detect |
| $\alpha$ -Cedrene      | PPM   | 2               | Non Detect |
| (E)- $\beta$ -Famesene | PPM   | 2               | Non Detect |
| Caryophyllene          | PPM   | 2               | 42         |
| $\alpha$ -Humulene     | PPM   | 2               | 16         |
| trans-Neradiol         | PPM   | 2               | Non Detect |
| cis-Neradiol           | PPM   | 2               | Non Detect |
| Valencene              | PPM   | 2               | Non Detect |
| Guaiol                 | PPM   | 2               | < 2        |
| Caryophyllene Oxide    | PPM   | 2               | 5          |
| Cedrol                 | PPM   | 2               | Non Detect |
| $\alpha$ -Bisabolol    | PPM   | 2               | <2         |

\*BQL - Below quantitation limit



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## Residual Solvents

**Product:** Hemp Derived Whole Plant Concentrate  
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**Product Batch ID:** WNC01B1218X0-16B01MA

| Analyte         | Units | Reporting Limit | MRL (USP 467) | Result | Result |
|-----------------|-------|-----------------|---------------|--------|--------|
| Methanol        | ppm   | 25              | < 3000        | < 25   | PASS   |
| Pentane         | ppm   | 25              | < 5000        | <25    | PASS   |
| Ethanol         | ppm   | 25              | < 5000        | 442    | PASS   |
| Acetone         | ppm   | 25              | < 5000        | <25    | PASS   |
| Isopropanol     | ppm   | 25              | < 5000        | <25    | PASS   |
| Acetonitrile    | ppm   | 25              | < 410         | 31     | PASS   |
| n-Hexane        | ppm   | 25              | < 290         | <25    | PASS   |
| Tetrahydrofuran | ppm   | 25              | < 720         | <25    | PASS   |
| Chloroform      | ppm   | 25              | < 60          | <25    | PASS   |
| n-Heptane       | ppm   | 25              | < 5000        | 54     | PASS   |
| Toluene         | ppm   | 25              | < 890         | <25    | PASS   |
| m & p Xylene    | ppm   | 25              | < 2170        | <25    | PASS   |