


Certificate ID: **63875**  
 Client Sample ID: **B**  
 Lot Number:  
 Matrix: **Isolates - CBD**

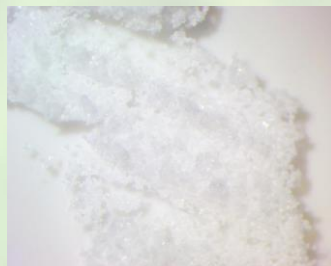
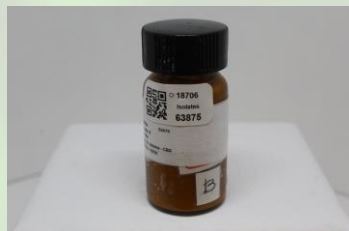
Received: **9/6/19**

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**WAN LONG XING YE COMMERCIAL TRADI**  
**Room 2708, 27/F, China Resources Building, No.**  
**Hong Kong, HK NA**  
**Attn: Adrian Chow**

|   |  |                    |
|---|--|--------------------|
| Authorization:<br>Jon Podgorni, Lead Research Chemist | Signature:<br> | Date:<br>9/17/2019 |
|---|--|--------------------|



The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01]**      Analyst: *LG*      Test Date: *9/13/2019*

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

**63875-CN**

| ID      | Weight % | Concentration (mg/g) |    |                    |       |
|---------|----------|----------------------|----|--------------------|-------|
| D9-THC  | ND       | ND                   |    |                    |       |
| THCV    | ND       | ND                   |    |                    |       |
| CBD     | 99.80    | 998.00               |    |                    |       |
| CBDV    | 0.02     | 0.21                 |    |                    |       |
| CBG     | ND       | ND                   |    |                    |       |
| CBC     | ND       | ND                   |    |                    |       |
| CBN     | ND       | ND                   |    |                    |       |
| THCA    | ND       | ND                   |    |                    |       |
| CBDA    | ND       | ND                   |    |                    |       |
| CBGA    | ND       | ND                   |    |                    |       |
| D8-THC  | ND       | ND                   |    |                    |       |
| exo-THC | ND       | ND                   |    |                    |       |
| Total   | 99.82    | 998.21               | 0% | Cannabinoids (wt%) | 99.8% |
| Max THC | ND       | ND                   |    |                    |       |
| Max CBD | 99.80    | 998.00               |    |                    |       |

Limit of Quantitation (LOQ) = 0.005 wt%

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LOD), which is half of LOQ.

**EA: Elemental Analysis [WI-10-13]**

Analyst: JFD

Test Date: 9/11/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**63875-EA**

| Symbol | Metal      | Conc. <sup>1</sup> | MDL        | Limits <sup>2</sup> | Status |
|--------|------------|--------------------|------------|---------------------|--------|
| Al     | Aluminum   | 1,030 ug/kg        | 5 ug/kg    | -                   |        |
| As     | Arsenic    | ND                 | 4 ug/kg    | 200 ug/kg           | PASS   |
| Cd     | Cadmium    | ND                 | 1 ug/kg    | 200 ug/kg           | PASS   |
| Ca     | Calcium    | 874 ug/kg          | 500 ug/kg  | -                   |        |
| Cr     | Chromium   | 17 ug/kg           | 5 ug/kg    | 300 ug/kg           | PASS   |
| Co     | Cobalt     | ND                 | 10 ug/kg   | 300 ug/kg           | PASS   |
| Cu     | Copper     | ND                 | 500 ug/kg  | 3000 ug/kg          | PASS   |
| Fe     | Iron       | 1,163 ug/kg        | 5 ug/kg    | -                   |        |
| Pb     | Lead       | 19 ug/kg           | 2 ug/kg    | 500 ug/kg           | PASS   |
| Mg     | Magnesium  | 825 ug/kg          | 500 ug/kg  | -                   |        |
| Mn     | Manganese  | ND                 | 500 ug/kg  | -                   |        |
| Hg     | Mercury    | ND                 | 2 ug/kg    | 100 ug/kg           | PASS   |
| Mo     | Molybdenum | ND                 | 50 ug/kg   | 1000 ug/kg          | PASS   |
| Ni     | Nickel     | ND                 | 50 ug/kg   | 500 ug/kg           | PASS   |
| P      | Phosphorus | 4,986 ug/kg        | 500 ug/kg  | -                   |        |
| K      | Potassium  | 5,562 ug/kg        | 5 ug/kg    | -                   |        |
| Se     | Selenium   | ND                 | 10 ug/kg   | -                   |        |
| Ag     | Silver     | ND                 | 10 ug/kg   | 700 ug/kg           | PASS   |
| S      | Sulfur     | ND                 | 5 ug/kg    | -                   |        |
| Sn     | Tin        | ND                 | 5000 ug/kg | 6000 ug/kg          | PASS   |
| Zn     | Zinc       | ND                 | 5 ug/kg    | -                   |        |

1) ND = None detected to the Method Detection Limit (MDL)

2) USP recommended maximum daily limits for inhalational drug product.

**MB1: Microbiological Contaminants [WI-10-09]**

Analyst: AEM

Test Date: 9/9/2019

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**63875-MB1**

| Symbol | Analysis                                | Results | Units | Limits*      | Status |
|--------|---|---------|-------|--------------|--------|
| AC     | Total Aerobic Bacterial Count           | <100    | CFU/g | 10,000 CFU/g | PASS   |
| CC     | Total Coliform Bacterial Count          | <100    | CFU/g | 100 CFU/g    | PASS   |
| EB     | Total Bile Tolerant Gram Negative Count | <100    | CFU/g | 100 CFU/g    | PASS   |
| YM     | Total Yeast & Mold                      | <100    | CFU/g | 1,000 CFU/g  | PASS   |

Note: Total Aerobic Bacterial Count failed established limits. Total Coliform Bacterial Count failed established limits. Total Bile Tolerant Gram Negative Count failed established limits. Total Yeast & Mold failed established limits.

**MB2: Pathogenic Bacterial Contaminants [WI-10-10]**

Analyst: LabAdmin

Test Date: 9/10/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**63875-MB2**

| Test ID    | Analysis       | Results  | Units | Limits*      | Status |
|------------|----------------|----------|-------|--------------|--------|
| 63875-ECPT | E. coli (O157) | Negative | NA    | Non Detected | PASS   |
| 63875-SPT  | Salmonella     | Negative | NA    | Non Detected | PASS   |

Note: All recorded pathogenic bacteria tests passed.

**MY: Mycotoxin Testing [WI-10-05]**

Analyst: AKR

Test Date: 9/10/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**63875-MY**

| Test ID          | Date      | Results | MDL   | Limits   | Status* |
|------------------|-----------|---------|-------|----------|---------|
| Total Aflatoxin  | 9/10/2019 | < MDL   | 2 ppb | < 20 ppb | PASS    |
| Total Ochratoxin | 9/10/2019 | < MDL   | 3 ppb | < 20 ppb | PASS    |

**PST: Pesticide Analysis [WI-10-11]**

Analyst: RAS

Test Date: 9/16/2019

The client sample was analyzed for pesticides using Liquid Chromatography with Mass Spectrometric detection (LC/MS/MS). The method used for sample prep was based on the European method for pesticide analysis (EN 15662).

**63875-PST**

| Analyte            | CAS         | Result | Units | LLD   | Limits (ppb) | Status |
|--------------------|-------------|--------|-------|-------|--------------|--------|
| Abamectin B1a      | 65495-55-3  | ND     | ppb   | 0.20  | 300          | PASS   |
| Abamectin B1b      | 65195-56-4  | ND     | ppb   | 0.20  | 300          | *      |
| Azoxystrobin       | 131860-33-8 | ND     | ppb   | 0.10  | 40000        | PASS   |
| Bifenazate         | 149877-41-8 | ND     | ppb   | 0.10  | 5000         | PASS   |
| Bifenthrin         | 82657-04-3  | ND     | ppb   | 0.20  | 500          | PASS   |
| Cyfluthrin         | 68359-37-5  | ND     | ppb   | 0.50  | 1000         | PASS   |
| Daminozide         | 1596-84-5   | ND     | ppb   | 10.00 | 10           | *      |
| Etoxazole          | 153233-91-1 | ND     | ppb   | 0.10  | 1500         | PASS   |
| Fenoxycarb         | 72490-01-8  | ND     | ppb   | 0.10  | 10           | PASS   |
| Imazalil           | 35554-44-0  | ND     | ppb   | 0.10  | 10           | PASS   |
| Imidacloprid       | 138261-41-3 | ND     | ppb   | 0.10  | 3000         | PASS   |
| Myclobutanil       | 88671-89-0  | ND     | ppb   | 0.10  | 9000         | PASS   |
| Paclobutrazol      | 76738-62-0  | ND     | ppb   | 0.10  | 10           | PASS   |
| Piperonyl butoxide | 51-03-6     | ND     | ppb   | 0.10  | 8000         | PASS   |
| Pyrethrin          | 8003-34-7   | ND     | ppb   | 0.1   | 1000         | PASS   |
| Spinosad           | 168316-95-8 | ND     | ppb   | 0.1   | 3000         | PASS   |
| Spiromesifen       | 283594-90-1 | ND     | ppb   | 0.10  | 12000        | PASS   |
| Spirotetramat      | 203313-25-1 | ND     | ppb   | 0.10  | 13000        | PASS   |
| Trifloxystrobin    | 141517-21-7 | ND     | ppb   | 0.10  | 30000        | PASS   |

\* Testing limits for ingestion established by the State of California: CCR, Title 16, Division 42, Chapter 5, Section 5313. ND indicates "none detected" above the lower limit of detection (LLD). Analytes marked with (\*) indicate analytes for which no recovery was observed for a pre-spiked matrix sample.

**TP: Terpenes Profile [WI-10-27]**

Analyst: CMA

Test Date: 9/11/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations. All values are semiquantitative estimates based on recorded peak areas relative to terpene calibration data.

**63875-TP**

| Compound            | ppm      | Terpene Profile | Compound           | ppm  | Terpene Profile |       |
|---------------------|----------|-----------------|--------------------|------|-----------------|-------|
| beta-myrcene        |          |                 | camphene           |      |                 |       |
| isopulegol          |          |                 | L-fenchone         |      |                 |       |
| menthol             |          |                 | beta-pinene        |      |                 |       |
| cis-nerolidol       |          |                 | eucalyptol         |      |                 |       |
| trans-nerolidol     |          |                 | alpha-terpinene    |      |                 |       |
| gamma-terpinene     |          |                 | delta-3-carene     |      |                 |       |
| alpha-bisabolol     |          |                 | alpha-pinene       |      |                 |       |
| linalool            |          |                 | D-limonene         |      |                 |       |
| beta-caryophyllene  |          |                 | geraniol           |      |                 |       |
| caryophyllene oxide |          |                 | cis-beta-ocimene   |      |                 |       |
| guaiol              |          |                 | alpha-ocimene      |      |                 |       |
| sabinene            |          |                 | alpha-phellandrene |      |                 |       |
| alpha-humulene      |          |                 | terpinolene        |      |                 |       |
| p-cymene            |          |                 |                    |      |                 |       |
|                     | ppm 0.00 | 5.00            | 10.00              | 0.00 | 5.00            | 10.00 |

Total Terpene: <0.1 wt%

**VC: Analysis of Volatile Organic Compounds [WI-10-28]**

Analyst: CMA

Test Date: 9/9/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

**63875-VC**

| Compound     | CAS      | Amount <sup>1</sup> | Limit <sup>2</sup> | RL  | Status |
|--------------|----------|---------------------|--------------------|-----|--------|
| Propane      | 74-98-6  | ND                  | 1,000 ppm          | 100 | PASS   |
| Isobutane    | 75-28-5  | ND                  | 1,000 ppm          | 100 | PASS   |
| Butane       | 106-97-8 | ND                  | 1,000 ppm          | 100 | PASS   |
| Methanol     | 67-56-1  | ND                  | 3,000 ppm          | 100 | PASS   |
| Pentane      | 109-66-0 | ND                  | 5,000 ppm          | 100 | PASS   |
| Ethanol      | 64-17-5  | ND                  | 5,000 ppm          | 100 | *      |
| Acetone      | 67-64-1  | ND                  | 5,000 ppm          | 100 | PASS   |
| Isopropanol  | 67-63-0  | ND                  | 5,000 ppm          | 100 | PASS   |
| Acetonitrile | 75-05-8  | ND                  | 410 ppm            | 100 | PASS   |
| Hexane       | 110-54-3 | ND                  | 290 ppm            | 100 | PASS   |
| Heptane      | 142-82-5 | ND                  | 5,000 ppm          | 100 | PASS   |

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health for cannabis concentrates and extracts on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

(\*) For ethanol, as many formulations contain flavorings based on ethanol extracts of natural products, no status has been assigned.

**END OF REPORT**