

# CERTIFICATE of ANALYSIS



205 Junes Way Suite 1 Whitefish, MT 59937

406-862-4677

[qc@glacierhopsranch.com](mailto:qc@glacierhopsranch.com)

[www.glacierhopsranch.com](http://www.glacierhopsranch.com)

Origin of Product: WHITEFISH, MT UNITED STATES of AMERICA

Variety: Hopzoil™ AHHHROMA™ Production Date: 9/15/2019

Lot #: 19MT505AHH-M7 Best Before Date: 9/15/2024

Sample ID: 200727 Test Analysis Date: 12/9/2020

## Organoleptic

### TESTING

#### SENSORY PROFILE

#### METHOD

#### SPECIFICATIONS

#### RESULTS

|              |              |                     |          |
|--------------|--------------|---------------------|----------|
| Color        | Organoleptic | Light Golden/Golden | Conforms |
| Aroma        | Organoleptic | Earthy, Tropical    | Conforms |
| Flavor       | Organoleptic | N/A                 | N/A      |
| Viscosity    | Organoleptic | Fluid               | Conforms |
| Ext Material | Organoleptic | < 0.01%             | < 0.01%  |

## Biological

### Microbiological

### Method

### Specifications

### Results

|                              |             |   |         |         |   |     |         |
|------------------------------|-------------|---|---------|---------|---|-----|---------|
| Coliform                     | AOAC 990.12 | < | 100     | cfu/g   | < | 10  | cfu/g   |
| Total Plate Count            | AOAC 991.14 | < | 100,000 | cfu/g   | < | 100 | cfu/g   |
| <i>E. coli</i>               | AOAC 991.14 | < | 10      | cfu/g   | < | 10  | cfu/g   |
| <i>Staphylococcus aureus</i> | FDA/BAM     | < | 10      | cfu/g   | < | 10  | cfu/g   |
| <i>Salmonella ssp.</i>       | FDA/BAM     |   | NEG     | per 25g |   | NEG | per 25g |
| Yeast                        | FDA/BAM     | < | 1,000   | cfu/g   | < | 100 | cfu/g   |
| Mold                         | FDA/BAM     | < | 1,000   | cfu/g   | < | 100 | cfu/g   |

Test Performed By:

Nutri-Biome Analytical Labs

## Terpenes

| COMPOUNDS    | TESTING METHOD | RESULTS | COMPOUNDS                                  | TESTING METHOD | RESULTS |
|--------------|----------------|---------|--------------------------------------------|----------------|---------|
| α-Pinene     | GC-FID         | 0.11    | Nerolidol 2                                | GC-FID         | 0.00    |
| β-Pinene     | GC-FID         | 1.34    | Humulene                                   | GC-FID         | 4.98    |
| Myrcene      | GC-FID         | 41.38   | Geraniol                                   | GC-FID         | 0.06    |
| Limonene     | GC-FID         | 0.67    | Geranyl Acetate 1                          | GC-FID         | 0.00    |
| Farnesene    | GC-FID         | 0.14    | Geranyl Acetate 2                          | GC-FID         | 0.16    |
| Ocimene      | GC-FID         | 1.31    | Caryophyllene                              | GC-FID         | 3.93    |
| Terpinolene  | GC-FID         | 0.02    | Caryophyllene Oxide                        | GC-FID         | 0.09    |
| β-Ionone     | GC-FID         | 0.04    | Methyl Thio Hexanoate                      | GC-FID         | 0.36    |
| Linalool     | GC-FID         | 0.44    | Methyl Heptanoate                          | GC-FID         | 0.15    |
| 2-Undecanone | GC-FID         | 0.69    | Methyl Laurate                             | GC-FID         | 0.48    |
| Citral       | GC-FID         | 0.02    | Methyl Octanoate                           | GC-FID         | 0.11    |
| Citronellene | GC-FID         | 0.01    | Unidentified                               | GC-FID         | 43.62   |
| Citronellol  | GC-FID         | 0.03    | Test Performed By: Hollingbery & Son, Inc. |                |         |
| Nerol        | GC-FID         | 0.00    |                                            |                |         |
| Nerolidol 1  | GC-FID         | 0.01    |                                            |                |         |

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## Chemical

| <b>HEAVY METALS</b> |        | <b>TESTING METHOD</b> | <b>SPECIFICATIONS</b> |                    |   | <b>RESULTS</b>         |     |
|---------------------|--------|-----------------------|-----------------------|--------------------|---|------------------------|-----|
| Arsenic             | ICP-MS | NMT                   | < 0.5                 | ppm                | < | 0.03                   | ppm |
| Cadmium             | ICP-MS | NMT                   | < 0.03                | ppm                | < | 0.01                   | ppm |
| Lead                | ICP-MS | NMT                   | < 1.0                 | ppm                |   | 0.01                   | ppm |
| Mercury             | ICP-MS | NMT                   | < 0.2                 | ppm                | < | 0.01                   | ppm |
|                     |        |                       |                       | Test Performed By: |   | Sora Laboratories LLC. |     |

## Pesticides

|                                 |                |     |      |     |        |     |
|---------------------------------|----------------|-----|------|-----|--------|-----|
| Acephate                        | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Alachlor                        | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Aldrin and dieldrin (sum of)    | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Azinphos-ethyl                  | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Azinphos-methyl                 | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Bromophos-ethyl                 | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Bromophos-methyl                | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Bromopropylate                  | GM0166 (USP35) | NMT | 3    | ppm | < 3    | ppm |
| Chlordane (sum)                 | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Chlorfenvinphos                 | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Chlorpyrifos-ethyl              | GM0166 (USP35) | NMT | 0.2  | ppm | < 0.2  | ppm |
| Chlorpyrifos-methyl             | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Chlorthal-dimethyl              | GM0166 (USP35) | NMT | 0.01 | ppm | < 0.01 | ppm |
| Cyfluthrin (sum)                | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Imidacloprid                    | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Cypermethrin and isomers (sum)  | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| DDT (sum)                       | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Deltamethrin                    | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Diazinon                        | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Dichlofluanid                   | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Dichlorvos                      | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Dicofol                         | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Dimethoate and omethoate (sum)  | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Dithiocarbamates (expressed as) | GM0166 (USP35) | NMT | 2    | ppm | < 2    | ppm |
| Endosulfan (sum)                | GM0166 (USP35) | NMT | 3    | ppm | < 3    | ppm |
| Endrin                          | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Ethion                          | GM0166 (USP35) | NMT | 2    | ppm | < 2    | ppm |
| Etrifos                         | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |

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|                                |                |     |      |     |        |     |
|--------------------------------|----------------|-----|------|-----|--------|-----|
| Fenchlorophos (sum)            | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Fenitrothion                   | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Fenpropathrin                  | GM0166 (USP35) | NMT | 0.03 | ppm | < 0.03 | ppm |
| Fensulfothion (sum)            | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Fenthion (sum)                 | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Fenvalerate                    | GM0166 (USP35) | NMT | 1.5  | ppm | < 1.5  | ppm |
| Flucythrinate                  | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Fluvalinate                    | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Fonophos                       | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Heptachlor (sum)               | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Hexachlorbenzene               | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Hexachlorocyclohexane (sum of  | GM0166 (USP35) | NMT | 0.3  | ppm | < 0.3  | ppm |
| Lindane (Hexachlorocyclohexane | GM0166 (USP35) | NMT | 0.6  | ppm | < 0.6  | ppm |
| Malathion and malaoxon (sum)   | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Mecarbam                       | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Methacriphos                   | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Methamidophos                  | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Methidathion                   | GM0166 (USP35) | NMT | 0.2  | ppm | < 0.2  | ppm |
| Methoxychlor                   | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Mirex                          | GM0166 (USP35) | NMT | 0.01 | ppm | < 0.01 | ppm |
| Monocrotophos                  | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Parathion-ethyl and Paroxon-e  | GM0166 (USP35) | NMT | 0.5  | ppm | < 0.5  | ppm |
| Parthion-methyl and Paraoxon-  | GM0166 (USP35) | NMT | 0.2  | ppm | < 0.2  | ppm |
| Pendimethalin                  | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Pentachloranisol               | GM0166 (USP35) | NMT | 0.01 | ppm | < 0.01 | ppm |
| Permethrin and isomers         | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| Phosalone                      | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Phosmet                        | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Piperonyl Butoxide             | GM0166 (USP35) | NMT | 3    | ppm | < 3    | ppm |
| Pirimiphos-ethyl               | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Pirimiphos-methyl (sum)        | GM0166 (USP35) | NMT | 4    | ppm | < 4    | ppm |
| Procymidone                    | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Profenophos                    | GM0166 (USP35) | NMT | 0.1  | ppm | < 0.1  | ppm |
| Prothiophos                    | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Pyrethrum (sum)                | GM0166 (USP35) | NMT | 3    | ppm | < 3    | ppm |
| Quinalphos                     | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Quintozene (sum)               | GM0166 (USP35) | NMT | 1    | ppm | < 1    | ppm |
| S-421                          | GM0166 (USP35) | NMT | 0.02 | ppm | < 0.02 | ppm |
| Tecnazene                      | GM0166 (USP35) | NMT | 0.05 | ppm | < 0.05 | ppm |
| Tetradifon                     | GM0166 (USP35) | NMT | 0.3  | ppm | < 0.3  | ppm |
| Vinclozolin                    | GM0166 (USP35) | NMT | 0.4  | ppm | < 0.4  | ppm |

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|                    |                |                        |     |     |      |     |
|--------------------|----------------|------------------------|-----|-----|------|-----|
| Bromides           | GM0166 (USP35) | NMT                    | 125 | ppm | <125 | ppm |
| Test Performed By: |                | Sora Laboratories LLC. |     |     |      |     |

## Quality Control Department

This information is presented in good faith and was compiled through testing methods in our laboratory or 3rd Party laboratory, and with the assistance of our suppliers, harvesters, and processors information. We confirm the identity with our in-house testing and laboratory outsourcing. The data in this analysis is offered solely for your verification and consideration.

**Authorized By:**  **Verified on :** 10/19/2021