



12423 NE Whitaker Way  
 Portland, OR 97230  
 503-254-1794



**Report Number:** 21-000947/D03.R01  
**Report Date:** 02/11/2021  
**ORELAP#:** OR100028  
**Purchase Order:**  
**Received:** 01/27/21 11:18

This is an amended version of report# 21-000947/D03.R00.  
 Reason: Report includes heavy metals testing.

**Customer:** Treehouse Biotech  
**Product identity:** 0051-02-005  
**Client/Metric ID:** .  
**Laboratory ID:** 21-000947-0001 **Sample Date:** 01/26/21 15:00

### Summary

#### Potency:

Analyte	Result (%)	Figure		
CBD	> 98.0		<ul style="list-style-type: none"> <li><span style="color: red;">●</span> CBD</li> <li><span style="color: blue;">●</span> CBDV</li> </ul>	CBD-Total > 98.0%
CBDV <sup>†</sup>	0.255			THC-Total < LOQ (Reported in percent of total sample)

#### Residual Solvents:

Analyte	Result (µg/g)	Limits (µg/g)	Status
n-Pentane	243		

#### Pesticides:

All analytes passing and less than LOQ.

#### Metals:

Less than LOQ for all analytes.

#### Microbiology:

Less than LOQ for all analytes.



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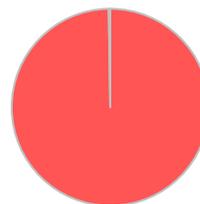
**Customer:** Treehouse Biotech

**Product identity:** 0051-02-005  
**Client/Metric ID:** .  
**Sample Date:** 01/26/21 15:00  
**Laboratory ID:** 21-000947-0001  
**Temp:** 14.4 °C  
**Serving Size #1:** 1 g

### Sample Results

Potency **Method J AOAC 2015 V98-6 (mod) Batch: 2100884 Analyze: 1/29/21 1:52:00 AM**

Analyte	As Received	Dry weight	LOQ	Notes
CBC	< LOQ		0.0903	
CBC-A†	< LOQ		0.0903	
CBC-Total†	< LOQ		0.169	
CBD	> 98.0		0.903	
CBD-A	< LOQ		0.0903	
CBD-Total	> 98.0		0.982	
CBDV†	0.255		0.0903	
CBDV-A†	< LOQ		0.0903	
CBDV-Total†	0.255		0.168	
CBG†	< LOQ		0.0903	
CBG-A†	< LOQ		0.0903	
CBG-Total	< LOQ		0.168	
CBL†	< LOQ		0.0903	
CBN	< LOQ		0.0903	
Δ8-THC†	< LOQ		0.0903	
Δ9-THC	< LOQ		0.0903	
THC-A	< LOQ		0.0903	
THC-Total	< LOQ		0.169	
THCV†	< LOQ		0.0903	
THCV-A†	< LOQ		0.0903	
THCV-Total†	< LOQ		0.168	
<b>Total Cannabinoids†</b>	<b>&gt; 98.0</b>			



● CBD  
 ● CBDV

### Microbiology

Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes
Aerobic Plate Count	< LOQ		cfu/g	10	2101008	02/05/21	AOAC 990.12 (Petrifilm)	X, I
E.coli	< LOQ		cfu/g	10	2100821	01/30/21	AOAC 991.14 (Petrifilm)	X, I
Total Coliforms	< LOQ		cfu/g	10	2100821	01/30/21	AOAC 991.14 (Petrifilm)	X, I
Staphylococcus aureus	< LOQ		cfu/g	10	2100825	01/29/21	AOAC 2003.07	X, I
Mold (RAPID Petrifilm)	< LOQ		cfu/g	10	2100824	01/30/21	AOAC 2014.05 (RAPID)	X, I
Yeast (RAPID Petrifilm)	< LOQ		cfu/g	10	2100824	01/30/21	AOAC 2014.05 (RAPID)	X, I
Salmonella spp. by PCR	Negative		/5g		2100826	01/29/21	AOAC 2020.02	X, I

Test results relate only to the parameters tested and to the samples as received by the laboratory. Test results meet all requirements of NELAP and the Columbia Laboratories quality assurance plan unless otherwise noted. This report shall not be reproduced, except in full, without the written consent of this laboratory. Samples will be retained for a maximum of 30 days from the receipt date unless prior arrangements have been made.

Testing in accordance with: OAR 333-007-0390 OAR 333-007-0410 OAR 333-007-0430



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Solvents						Residual Solvents by GC/MS					Units µg/g		Batch 2101005		Analyze 02/03/21 08:44 AM			
Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes							
1,4-Dioxane	< LOQ	380	100	pass		2-Butanol	< LOQ	5000	200	pass								
2-Ethoxyethanol	< LOQ	160	30.0	pass		2-Methylbutane	< LOQ		200									
2-Methylpentane	< LOQ		30.0			2-Propanol (IPA)	< LOQ	5000	200	pass								
2,2-Dimethylbutane	< LOQ		30.0			2,2-Dimethylpropane	< LOQ		200									
2,3-Dimethylbutane	< LOQ		30.0			3-Methylpentane	< LOQ		30.0									
Acetone	< LOQ	5000	200	pass		Acetonitrile	< LOQ	410	100	pass								
Benzene	< LOQ	2.00	1.00	pass		Butanes (sum)	< LOQ	5000	400	pass								
Cyclohexane	< LOQ	3880	200	pass		Ethanol <sup>1</sup>	< LOQ		200									
Ethyl acetate	< LOQ	5000	200	pass		Ethyl benzene	< LOQ		200									
Ethyl ether	< LOQ	5000	200	pass		Ethylene glycol	< LOQ	620	200	pass								
Ethylene oxide	< LOQ	50.0	30.0	pass		Hexanes (sum)	< LOQ	290	150	pass								
Isopropyl acetate	< LOQ	5000	200	pass		Isopropylbenzene	< LOQ	70.0	30.0	pass								
m,p-Xylene	< LOQ		200			Methanol	< LOQ	3000	200	pass								
Methylene chloride	< LOQ	600	200	pass		Methylpropane	< LOQ		200									
n-Butane	< LOQ		200			n-Heptane	< LOQ	5000	200	pass								
n-Hexane	< LOQ		30.0			n-Pentane	243		200									
o-Xylene	< LOQ		200			Pentanes (sum)	< LOQ	5000	600	pass								
Propane	< LOQ	5000	200	pass		Tetrahydrofuran	< LOQ	720	100	pass								
Toluene	< LOQ	890	100	pass		Total Xylenes	< LOQ		400									
Total Xylenes and Ethyl	< LOQ	2170	600	pass														



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Pesticides											
Method AOAC 2007.01 & EN 15662 (mod) Units mg/kg Batch 2101096 Analyze 02/05/21 10:19 AM											
Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
Abamectin	< LOQ	0.50	0.250	pass		Acephate	< LOQ	0.40	0.250	pass	
Acequinocyl	< LOQ	2.0	1.00	pass		Acetamiprid	< LOQ	0.20	0.100	pass	
Aldicarb	< LOQ	0.40	0.200	pass		Azoxystrobin	< LOQ	0.20	0.100	pass	
Bifenazate	< LOQ	0.20	0.100	pass		Bifenthrin	< LOQ	0.20	0.100	pass	
Boscalid	< LOQ	0.40	0.200	pass		Carbaryl	< LOQ	0.20	0.100	pass	
Carbofuran	< LOQ	0.20	0.100	pass		Chlorantraniliprole	< LOQ	0.20	0.100	pass	
Chlorfenapyr	< LOQ	1.0	0.500	pass		Chlorpyrifos	< LOQ	0.20	0.100	pass	
Clofentezine	< LOQ	0.20	0.100	pass		Cyfluthrin	< LOQ	1.0	0.500	pass	
Cypermethrin	< LOQ	1.0	0.500	pass		Daminozide	< LOQ	1.0	0.500	pass	
Diazinon	< LOQ	0.20	0.100	pass		Dichlorvos	< LOQ	1.0	0.500	pass	
Dimethoate	< LOQ	0.20	0.100	pass		Ethoprophos	< LOQ	0.20	0.100	pass	
Etofenprox	< LOQ	0.40	0.200	pass		Etoxazole	< LOQ	0.20	0.100	pass	
Fenoxycarb	< LOQ	0.20	0.100	pass		Fenpyroximate	< LOQ	0.40	0.200	pass	
Fipronil	< LOQ	0.40	0.200	pass		Fonicamid	< LOQ	1.0	0.400	pass	
Fludioxonil	< LOQ	0.40	0.200	pass		Hexythiazox	< LOQ	1.0	0.400	pass	
Imazalil	< LOQ	0.20	0.100	pass		Imidacloprid	< LOQ	0.40	0.200	pass	
Kresoxim-methyl	< LOQ	0.40	0.200	pass		Malathion	< LOQ	0.20	0.100	pass	
Metalaxyl	< LOQ	0.20	0.100	pass		Methiocarb	< LOQ	0.20	0.100	pass	
Methomyl	< LOQ	0.40	0.200	pass		MGK-264	< LOQ	0.20	0.100	pass	
Myclobutanil	< LOQ	0.20	0.100	pass		Naled	< LOQ	0.50	0.250	pass	
Oxamyl	< LOQ	1.0	0.500	pass		Paclobutrazole	< LOQ	0.40	0.200	pass	
Parathion-Methyl	< LOQ	0.20	0.200	pass		Permethrin	< LOQ	0.20	0.100	pass	
Phosmet	< LOQ	0.20	0.100	pass		Piperonyl butoxide	< LOQ	2.0	1.00	pass	
Prallethrin	< LOQ	0.20	0.200	pass		Propiconazole	< LOQ	0.40	0.200	pass	
Propoxur	< LOQ	0.20	0.100	pass		Pyrethrin I (total)	< LOQ	1.0	0.500	pass	
Pyridaben	< LOQ	0.20	0.100	pass		Spinosad	< LOQ	0.20	0.100	pass	
Spiromesifen	< LOQ	0.20	0.100	pass		Spirotetramat	< LOQ	0.20	0.100	pass	
Spiroxamine	< LOQ	0.40	0.200	pass		Tebuconazole	< LOQ	0.40	0.200	pass	
Thiacloprid	< LOQ	0.20	0.100	pass		Thiamethoxam	< LOQ	0.20	0.100	pass	
Trifloxystrobin	< LOQ	0.20	0.100	pass							

Metals									
Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes	
Arsenic	< LOQ		mg/kg	0.0359	2101283	02/10/21	AOAC 2013.06 (mod.)	X	
Cadmium	< LOQ		mg/kg	0.0359	2101283	02/10/21	AOAC 2013.06 (mod.)	X	
Lead	< LOQ		mg/kg	0.0359	2101283	02/10/21	AOAC 2013.06 (mod.)	X	
Mercury	< LOQ		mg/kg	0.0179	2101283	02/10/21	AOAC 2013.06 (mod.)	X	



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These test results are representative of the individual sample selected and submitted by the client.

**Abbreviations**

**Limits:** Action Levels per OAR-333-007-0400, OAR-333-007-0210, OAR-333-007-0220

**Limit(s) of Quantitation (LOQ):** The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.

† = Analyte not NELAP accredited.

**Units of Measure**

cfu/g = Colony forming units per gram

g = Gram

µg/g = Microgram per gram

mg/kg = Milligram per kilogram = parts per million (ppm)

/5g = Per 5 grams

% = Percentage of sample

% wt = µg/g divided by 10,000

**Glossary of Qualifiers**

I: Insufficient sample received to meet method requirements.

X: Not ORELAP accredited.

Approved Signatory

Derrick Tanner  
General Manager



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**Hemp / Cannabis Usable / Extract  
 Chain of Custody Record**

Revision: 3.01 Control#: CF023 Rev 02/26/2020 Eff: 02/27/2020  
 ORELAP ID: OR100028

TREEHOUSEBIOTECH 21-000946 JS 2/14/21  
 21-000947 I  
 I  
 Treehouse Biotech

Company: Treehouse Contact: Julie Barich and Sean Colvin Street: 4472 Hilltop Rd Unit A City: Longmont State: CO Zip: 80504 <input checked="" type="checkbox"/> Email Results: julie@treehousebiotech.com Ph: (303) 550-5601 <input type="checkbox"/> Fx Results: ( ) Billing (if different): accounting@treehousebiotech.com				<b>Analysis Requested</b> Pesticides - OR 59 compounds Pesticide Multi-Residue - 379 compounds Potency Residual Solvents Moisture & Water Activity Terpenes Micro: Yeast and Mold Micro: E.Coli and Total Coliform Heavy Metals Mycotoxins Other: Micro Panel G								PO Number: _____ Project Number: _____ Project Name: _____ Custom Reporting: _____ Report to State - <input type="checkbox"/> METRC or <input type="checkbox"/> Other: _____ Turnaround time: <input type="checkbox"/> Standard <input type="checkbox"/> Rush * <input type="checkbox"/> Priority Rush * *Check for availability Sampled by: _____					
Lab ID	Client Sample Identification	Date	Time	Pesticides - OR 59 compounds	Pesticide Multi-Residue - 379 compounds	Potency	Residual Solvents	Moisture & Water Activity	Terpenes	Micro: Yeast and Mold	Micro: E.Coli and Total Coliform	Heavy Metals	Mycotoxins	Other: Micro Panel G	Sample Type *	Weight (Units)	Comments/Metric ID
1	0051-02-005			✓	✓	✓	✓					✓	✓		C		For Any Residual Solvent Analysis, please do Ethanol. This is required for Organic Certification. Thanks!  Sample is an isolate
Relinquished By:		Date	Time	Received By:		Date	Time	Lab Use Only:									
Julie Barich		1.26.21	8:45A	JB		1/27	10:42	<input checked="" type="checkbox"/> Shipped Via: UPS or <input type="checkbox"/> Client drop Evidence of cooling: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No - Temp (°C): 14.3 Sample in good condition: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cash   <input type="checkbox"/> Check   <input type="checkbox"/> CC   <input type="checkbox"/> Net: _____ Prelog storage: _____									

\* - Sample Type Codes: Vegetation (V) ; Isolates (S) ; Extract/Concentrate (C)

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**Hemp / Cannabis Usable / Extract  
Chain of Custody Record**

Revision: 3.01 Control#: CF023 Rev 02/26/2020 Eff: 02/27/2020  
ORELAP ID: OR100028

**PRICING AND CHARGES**

Prices to be charged for work performed for CUSTOMER are those currently published in the Columbia Laboratories (herein referred to as "the LAB". Standard pricing applies unless otherwise agreed in writing by the CUSTOMER and the LAB. CUSTOMER must notify the LAB of price quotation at the time of the transfer of sample(s) to the LAB. Any cancellation of testing requirements will result in charges being assessed on all testing completed prior to the notice of cancellation. Unless otherwise agreed upon, samples containing hazardous material will be shipped back to client at their expense, or disposed of at a certain fee, waste category dependent. New accounts are accepted with full payment in advance by cash, check, Visa or Mastercard. A credit line may be established with an approved credit application.

**DELIVERY AND LIABILITY LIMITATIONS**

The specific format of the goods will be defined by CUSTOMER to the LAB upon delivery of the sample(s) to the LAB. The LAB will analyze samples provided by CUSTOMER as requested by CUSTOMER in accordance with the procedures documented in the Quality Assurance Plan (QAP). Samples are retained for 30 days after receipt. If additional time is desired, then a written request is required, and an additional monthly fee will apply.

**CONFIDENTIALITY**

The LAB will treat all information regarding work performed for CUSTOMER as proprietary and confidential. No CUSTOMER information will be released to third persons without the written request of the CUSTOMER.

**LIMITATION OF LIABILITY AND WARRANTY**

The LAB gives no warranty, express or implied, or of fitness for a particular purpose, in connection with its analytical testing or reporting. Any liability of the LAB to CUSTOMER or any third party shall be limited to the cost of analysis charged to CUSTOMER.

**PAST DUE ACCOUNTS**

Credit line account are payable within 30 days. Accounts that are 60 days past due will incur 1 1/2% per month on all past due sums until paid in full and will automatically default to cash on delivery (COD). Reports will not be released unless payment on past and current invoices are received. Customer agrees to pay the interest as a service charge and all the LAB's collection costs, including reasonable attorney fees.

**EXPERT TESTIMONY AND COURT APPEARANCES**

In the event CUSTOMER requires the further written opinion or testimony of any employee of the LAB, including response to a subpoena issued by CUSTOMER or any third person, CUSTOMER agrees to pay such additional fees and expenses as may be reasonably assessed by the LAB.

**ALTERNATIVE DISPUTE RESOLUTION (ADR)**

Any disputes arising out of this Agreement or the analytical testing or reporting by the LAB shall be settled through mediation and/or arbitration rather than litigation, and the cost of the ADR shall be borne equally by both parties.

**APPLICABLE LAW**

Legal matters arising from work performed by the LAB for CUSTOMER will be construed and interpreted in accordance with the laws for the state of Oregon. When sending, transferring, or submitting samples, the CUSTOMER assumes full responsibility for complying with all applicable state and federal laws

Samples submitted to Columbia Laboratories with testing requirements constitute an agreement for services in accordance with the current terms of service associated with this COC. By signing "Relinquished by" you are agreeing to these terms  
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Columbia Laboratories  
Sample Receipt Form

Revision: 1.01 Document Control: CF015  
Revised: 02/28/2020 Effective: 02/28/2020

Job Number: 21-000946 Search Name: Treehouse

Package/Cooler opened on (if different than received date/time) Date: 1/27 Time: 10:42

Received By (Initials): JS

- 1) Were custody seals on outside of the package/cooler? YES NO NA  
If YES, how many and where? \_\_\_\_\_
- Were signature and date correct? ----- YES NO NA
- 2) Were custody papers included in the package/cooler? YES NO NA
- 3) Were custody papers properly filled out (ink, sign, date)? YES NO NA
- 4) Did you sign custody papers in the appropriate place? YES NO NA

5) How was the package/cooler delivered?  
UPS FEDEX USPS CLIENT COURIER OTHER: \_\_\_\_\_

Tracking Number (written in or copy of shipping label): 1Z5EW4040146933150

6) Was packing material used? YES NO NA  
Peanuts Bubble Wrap Foam Paper Other:

7) Was sufficient ice used (if appropriate)? YES NO NA  
What kind?  
Blue Ice Ice Cooler Packs Dry Ice

- 8) Were all sample containers sealed in separate plastic bags? YES NO NA
- 9) Did all sample containers arrive in good condition? YES NO NA
- 10) Were all sample container labels complete? YES NO NA
- 11) Did all sample container labels and tags agree with the coc? YES NO NA
- 12) Were correct sample containers used for the tests indicated? YES NO NA
- 13) Were VOA vials checked for absence of air bubbles (note if found)? YES NO NA
- 14) Was a sufficient amount of sample sent in each sample container? YES NO NA

15) Temperature of the samples upon receipt (See SOP for proper temps) 14.3 °C

16) Sample location prior to login: R25 R39 R44 F44 Ambient Shelf Cannabis Table Other: \_\_\_\_\_

Explain any discrepancies: \_\_\_\_\_

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Revision #: 0.00 Control : CFL-D06  
Revision Date: 05/31/2019 Effective Date: 05/31/2019

Laboratory Quality Control Results

JAOAC2015 V986 Batch ID: 2100884

Laboratory Control Sample

Analyte	Result	Spike	Units	% Rec	Limits	Evaluation	Notes
CBDVA	0.196	0.2	%	97.8	85.0 - 115	Acceptable	
CBDV	0.203	0.2	%	102	85.0 - 115	Acceptable	
CBD-A	0.201	0.2	%	100	85.0 - 115	Acceptable	
CBG-A	0.197	0.2	%	98.3	85.0 - 115	Acceptable	
CBG	0.203	0.2	%	102	85.0 - 115	Acceptable	
CBD	0.200	0.2	%	99.9	85.0 - 115	Acceptable	
THCV	0.200	0.2	%	100	85.0 - 115	Acceptable	
THCVA	0.187	0.2	%	93.4	85.0 - 115	Acceptable	
CBN	0.212	0.2	%	106	85.0 - 115	Acceptable	
THC	0.193	0.2	%	96.5	85.0 - 115	Acceptable	
D8THC	0.200	0.2	%	100	85.0 - 115	Acceptable	
CBL	0.188	0.2	%	93.9	85.0 - 115	Acceptable	
CBC	0.205	0.2	%	102	85.0 - 115	Acceptable	
THCA	0.196	0.2	%	98.2	85.0 - 115	Acceptable	
CBCA	0.190	0.2	%	94.8	85.0 - 115	Acceptable	

Method Blank

Analyte	Result	LOQ	Units	Limits	Evaluation	Notes
CBDVA	<LOQ	0.1	%	< 0.1	Acceptable	
CBDV	<LOQ	0.1	%	< 0.1	Acceptable	
CBD-A	<LOQ	0.1	%	< 0.1	Acceptable	
CBG-A	<LOQ	0.1	%	< 0.1	Acceptable	
CBG	<LOQ	0.1	%	< 0.1	Acceptable	
CBD	<LOQ	0.1	%	< 0.1	Acceptable	
THCV	<LOQ	0.1	%	< 0.1	Acceptable	
THCVA	<LOQ	0.1	%	< 0.1	Acceptable	
CBN	<LOQ	0.1	%	< 0.1	Acceptable	
THC	<LOQ	0.1	%	< 0.1	Acceptable	
D8THC	<LOQ	0.1	%	< 0.1	Acceptable	
CBL	<LOQ	0.1	%	< 0.1	Acceptable	
CBC	<LOQ	0.1	%	< 0.1	Acceptable	
THCA	<LOQ	0.1	%	< 0.1	Acceptable	
CBCA	<LOQ	0.1	%	< 0.1	Acceptable	

Abbreviations

- ND - None Detected at or above MRL
- RPD - Relative Percent Difference
- LOQ - Limit of Quantitation

Units of Measure

%- Percent



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Revision #: 0.00 Control : CFL-D06  
Revision Date: 05/31/2019 Effective Date: 05/31/2019

Laboratory Quality Control Results

JAOAC2015 V986		Batch ID: 2100884						
Sample Duplicate		Sample ID: 21-000916-0001						
Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Evaluation	Notes
CBDV-A	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBDV	0.168	0.170	0.1	%	1.26	< 20	Acceptable	
CBD-A	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBG-A	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBG	0.137	0.140	0.1	%	2.41	< 20	Acceptable	
CBD	35.3	32.0	0.1	%	9.98	< 20	Acceptable	
THCV	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
THCVA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBN	0.341	0.341	0.1	%	0.124	< 20	Acceptable	
THC	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
D8THC	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBL	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBG	0.459	0.507	0.1	%	9.92	< 20	Acceptable	
THCA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	
CBGA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable	

Abbreviations

- ND - None Detected at or above MRL
- RPD - Relative Percent Difference
- LOQ - Limit of Quantitation
- NA - Calculation Not Applicable given non-numerical results

Units of Measure

%- Percent



12423 NE Whitaker Way  
Portland, OR 97230  
503-254-1794



**Report Number:** 21-000947/D03.R01  
**Report Date:** 02/11/2021  
**ORELAP#:** OR100028  
**Purchase Order:**  
**Received:** 01/27/21 11:18

Laboratory Quality Control Results

Residual Solvents				Batch ID: 2101005					
Method Blank				Laboratory Control Sample					
Analyte	Result	LOQ	Notes	Result	Spike	Units	%Rec	Limits	Notes
Propane	ND	< 200		624	595	µg/g	104.9	70	- 130
Isobutane	ND	< 200		799	761	µg/g	105.0	70	- 130
Butane	ND	< 200		809	761	µg/g	106.3	70	- 130
2,2-Dimethylpropane	ND	< 200		933	955	µg/g	97.7	70	- 130
Methanol	ND	< 200		1420	1610	µg/g	88.2	70	- 130
Ethylene Oxide	ND	< 30		55.4	58.3	µg/g	95.0	70	- 130
2-Methylbutane	ND	< 200		1340	1630	µg/g	82.2	70	- 130
Pentane	ND	< 200		1290	1610	µg/g	80.1	70	- 130
Ethanol	ND	< 200		1360	1620	µg/g	84.0	70	- 130
Ethyl Ether	ND	< 200		1420	1630	µg/g	87.1	70	- 130
2,2-Dimethylbutane	ND	< 30		166	176	µg/g	94.3	70	- 130
Acetone	ND	< 200		1410	1610	µg/g	87.6	70	- 130
2-Propanol	ND	< 200		1380	1620	µg/g	85.2	70	- 130
Acetonitrile	ND	< 100		409	499	µg/g	82.0	70	- 130
2,3-Dimethylbutane	ND	< 30		132	165	µg/g	80.0	70	- 130
Dichloromethane	ND	< 200		410	482	µg/g	85.1	70	- 130
2-Methylpentane	ND	< 30		156	164	µg/g	95.1	70	- 130
3-Methylpentane	ND	< 30		132	163	µg/g	81.0	70	- 130
Hexane	ND	< 30		121	166	µg/g	72.9	70	- 130
Ethyl acetate	ND	< 200		1200	1610	µg/g	74.5	70	- 130
2-Butanol	ND	< 200		1200	1620	µg/g	74.1	70	- 130
Tetrahydrofuran	ND	< 100		374	509	µg/g	73.5	70	- 130
Cyclohexane	ND	< 200		1320	1620	µg/g	81.5	70	- 130
Benzene	ND	< 1		23.9	30.2	µg/g	79.1	70	- 130
Isopropyl Acetate	ND	< 200		1400	1610	µg/g	87.0	70	- 130
Heptane	ND	< 200		1370	1610	µg/g	85.1	70	- 130
1,4-Dioxane	ND	< 100		449	493	µg/g	91.1	70	- 130
2-Ethoxyethanol	ND	< 30		134	168	µg/g	79.8	70	- 130
Ethylene Glycol	ND	< 200		374	483	µg/g	77.4	70	- 130
Toluene	ND	< 200		445	491	µg/g	90.6	70	- 130
Ethylbenzene	ND	< 200		883	966	µg/g	91.4	70	- 130
m,p-Xylene	ND	< 200		894	982	µg/g	91.0	70	- 130
o-Xylene	ND	< 200		930	976	µg/g	95.3	70	- 130
Cumene	ND	< 30		152	162	µg/g	93.8	70	- 130



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**Report Number:** 21-000947/D03.R01  
**Report Date:** 02/11/2021  
**ORELAP#:** OR100028  
**Purchase Order:**  
**Received:** 01/27/21 11:18

QC - Sample Duplicate Sample ID: 21-000947-0001

Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Accept/Fail	Notes
Propane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Isobutane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Butane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2,2-Dimethylpropane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Methanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethylene Oxide	ND	ND	30	µg/g	0.0	< 20	Acceptable	
2-Methylbutane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Pentane	243	243	200	µg/g	0.0	< 20	Acceptable	
Ethanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethyl Ether	ND	ND	30	µg/g	0.0	< 20	Acceptable	
2,2-Dimethylbutane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Acetone	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-Propanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Acetonitrile	ND	ND	100	µg/g	0.0	< 20	Acceptable	
2,3-Dimethylbutane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Dichloromethane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-Methylpentane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
3-Methylpentane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Hexane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Ethyl acetate	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-Butanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Tetrahydrofuran	ND	ND	100	µg/g	0.0	< 20	Acceptable	
Cyclohexane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Benzene	ND	ND	1	µg/g	0.0	< 20	Acceptable	
Isopropyl Acetate	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Heptane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
1,4-Dioxane	ND	ND	100	µg/g	0.0	< 20	Acceptable	
2-Ethoxyethanol	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Ethylene Glycol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Toluene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethylbenzene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
m,p-Xylene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
o-Xylene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Cumene	ND	ND	30	µg/g	0.0	< 20	Acceptable	

Abbreviations

ND - None Detected at or above MRL  
 RPD - Relative Percent Difference  
 LOQ - Limit of Quantitation

Units of Measure:

µg/g - Microgram per gram or ppm



12423 NE Whitaker Way  
Portland, OR 97230  
503-254-1794



Report Number: 21-000947/D03.R01  
Report Date: 02/11/2021  
ORELAP#: OR100028  
Purchase Order:  
Received: 01/27/21 11:18

Revision: 1.00 Control: CFL-C21  
Revised: 08/12/2019 Effective: 08/15/2019

Laboratory Pesticide Quality Control Results

AOAC 2007.1 & EN 15662		Units: mg/Kg				Batch ID: 2101096				
Matrix Spike/Matrix Spike Duplicate Recoveries		Sample ID: 21-001120-0004								
Analyte	Result	MS Res	MSD Res	Spike	RPD%	Limit	MS % Rec	MSD % Rec	Limits	Notes
Acephate	0.013	0.989	0.963	1.000	2.7%	< 30	97.6%	95.0%	50 - 150	
Acequinocyl	0.000	3.636	2.473	4.000	38.1%	< 30	90.9%	61.8%	50 - 150	R
Acetamiprid	0.000	0.408	0.395	0.400	3.2%	< 30	102.1%	98.8%	50 - 150	
Aldicarb	0.000	0.830	0.789	0.800	5.1%	< 30	103.8%	98.6%	50 - 150	
Abamectin	0.000	0.991	0.981	1.000	1.0%	< 30	99.1%	98.1%	50 - 150	
Azoxystrobin	0.012	0.375	0.365	0.400	2.9%	< 30	90.9%	88.3%	50 - 150	
Bifenazate	0.000	0.445	0.436	0.400	2.0%	< 30	111.3%	109.1%	50 - 150	
Bifenthrin	0.000	0.342	0.366	0.400	6.9%	< 30	85.4%	91.5%	50 - 150	
Boscalid	0.000	0.765	0.746	0.800	2.5%	< 30	95.6%	93.2%	50 - 150	
Carbaryl	0.000	0.397	0.394	0.400	0.7%	< 30	99.2%	98.4%	50 - 150	
Carbofuran	0.000	0.386	0.367	0.400	4.9%	< 30	96.4%	91.8%	50 - 150	
Chlorantraniliprol	0.000	0.383	0.422	0.400	9.7%	< 30	95.7%	105.5%	50 - 150	
Chlorfenapyr	0.000	2.160	2.106	2.000	2.6%	< 30	108.0%	105.3%	50 - 150	
Chlorpyrifos	0.000	0.227	0.220	0.400	3.3%	< 30	56.8%	55.0%	50 - 150	
Clofentezine	0.000	0.383	0.369	0.400	3.7%	< 30	95.8%	92.3%	50 - 150	
Cyfluthrin	0.000	2.131	2.116	2.000	0.7%	< 30	106.5%	105.8%	30 - 150	
Cypermethrin	0.000	2.064	2.076	2.000	0.6%	< 30	103.2%	103.8%	50 - 150	
Daminozide	0.076	1.781	1.757	2.000	1.4%	< 30	85.2%	84.1%	30 - 150	
Diazinon	0.000	0.385	0.378	0.400	1.8%	< 30	96.3%	94.6%	50 - 150	
Dichlorvos	0.000	1.987	1.878	2.000	5.7%	< 30	99.4%	93.9%	50 - 150	
Dimethoat	0.000	0.408	0.384	0.400	6.0%	< 30	102.0%	96.0%	50 - 150	
Ethoprophos	0.000	0.405	0.381	0.400	6.1%	< 30	101.3%	95.4%	50 - 150	
Etofenprox	0.000	0.725	0.765	0.800	5.4%	< 30	90.6%	95.6%	50 - 150	
Etoxazol	0.000	0.386	0.365	0.400	5.5%	< 30	96.5%	91.4%	50 - 150	
Fenoxycarb	0.000	0.384	0.396	0.400	3.0%	< 30	96.0%	98.9%	50 - 150	
Fenpyroximat	0.000	0.714	0.684	0.800	4.2%	< 30	89.2%	85.5%	50 - 150	
Fipronil	0.000	0.737	0.732	0.800	0.7%	< 30	92.2%	91.5%	50 - 150	
Fonicamid	0.000	1.001	0.918	1.000	8.7%	< 30	100.1%	91.8%	50 - 150	
Fludioxonil	0.000	0.853	0.782	0.800	8.7%	< 30	106.6%	97.7%	50 - 150	
Hexythiazox	0.000	0.367	0.360	1.000	1.9%	< 30	36.7%	36.0%	50 - 150	Q
Imazalil	0.000	0.473	0.473	0.400	0.1%	< 30	118.1%	118.3%	50 - 150	
Imidacloprid	0.000	0.809	0.761	0.800	6.1%	< 30	101.1%	95.2%	50 - 150	
Kresoxim-Methyl	0.000	0.818	0.779	0.800	4.9%	< 30	102.3%	97.4%	50 - 150	
Malathion	0.000	0.384	0.392	0.400	1.9%	< 30	96.1%	97.9%	50 - 150	
Metaxyl	0.000	0.386	0.372	0.400	3.7%	< 30	96.6%	93.0%	50 - 150	
Methiocarb	0.000	0.378	0.378	0.400	0.1%	< 30	94.5%	94.5%	50 - 150	
Methomyl	0.000	0.875	0.836	0.800	4.6%	< 30	109.4%	104.5%	50 - 150	
MGK 264	0.000	0.386	0.393	0.400	1.8%	< 30	96.6%	98.3%	50 - 150	
Myclobutanil	0.000	0.372	0.390	0.400	4.7%	< 30	93.1%	97.6%	50 - 150	
Naled	0.000	0.974	0.973	1.000	0.1%	< 30	97.4%	97.3%	50 - 150	
Oxamyl	0.000	2.205	2.201	2.000	0.2%	< 30	110.3%	110.0%	50 - 150	
Paclobutrazol	0.000	0.784	0.740	0.800	5.9%	< 30	98.0%	92.4%	50 - 150	
Parathion Methyl	0.045	0.776	0.818	0.800	5.6%	< 30	91.4%	96.7%	30 - 150	
Permethrin	0.000	0.452	0.450	0.400	0.5%	< 30	113.1%	112.5%	50 - 150	
Phosmet	0.000	0.396	0.378	0.400	4.8%	< 30	99.1%	94.4%	50 - 150	
Piperonyl butoxide	0.000	1.894	1.843	2.000	2.8%	< 30	94.7%	92.1%	50 - 150	
Prallethrin	0.000	0.325	0.313	0.400	3.8%	< 30	81.2%	78.2%	50 - 150	
Propiconazole	0.000	0.749	0.759	0.800	1.4%	< 30	93.6%	94.9%	50 - 150	
Propoxur	0.000	0.394	0.390	0.400	1.0%	< 30	98.6%	97.6%	50 - 150	
Pyrethrins	0.018	0.422	0.409	0.413	3.3%	< 30	97.9%	94.7%	50 - 150	
Pyridaben	0.000	0.342	0.336	0.400	1.7%	< 30	85.5%	84.1%	50 - 150	
Spinosad	0.000	0.472	0.461	0.388	2.5%	< 30	121.7%	118.7%	50 - 150	
Spiromesifen	0.021	0.396	0.395	0.400	0.4%	< 30	93.9%	93.5%	50 - 150	
Spirotetramat	0.000	0.401	0.391	0.400	2.5%	< 30	100.2%	97.7%	50 - 150	
Spiroxamine	0.000	0.764	0.738	0.800	3.6%	< 30	95.5%	92.2%	50 - 150	
Tebuconazol	0.000	0.769	0.716	0.800	7.2%	< 30	96.2%	89.5%	50 - 150	
Thiadoprid	0.000	0.396	0.391	0.400	1.2%	< 30	99.0%	97.8%	50 - 150	
Thiamethoxam	0.000	0.344	0.388	0.400	12.1%	< 30	86.1%	97.1%	50 - 150	
Trifloxystrobin	0.000	0.383	0.372	0.400	3.1%	< 30	95.9%	92.9%	50 - 150	



12423 NE Whitaker Way  
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 503-254-1794



**Report Number:** 21-000947/D03.R01  
**Report Date:** 02/11/2021  
**ORELAP#:** OR100028  
**Purchase Order:**  
**Received:** 01/27/21 11:18

Revision: 1.00 Control: CFL-C21  
 Revised: 08/12/2019 Effective: 08/15/2019

**Laboratory Pesticide Quality Control Results**

AOAC 2007.1 & EN 15662		Units: mg/Kg		Laboratory Control Sample			Batch ID: 2101096	
Method Blank	Blank Result	Blank Limits	Notes	LCS Result	LCS Spike	LCS % Rec	Limits	Notes
Accephate	0.047	< 0.200		1.030	1.000	103.0	72.4 - 126	
Acequinocyl	0.000	< 1.000		3.779	4.000	94.5	79.8 - 122	
Acetamiprid	0.000	< 0.100		0.401	0.400	100.3	84.3 - 119	
Aldicarb	0.000	< 0.200		0.796	0.800	99.5	82.9 - 120	
Abamectin	0.000	< 0.288		1.013	1.000	101.3	79.6 - 124	
Azoxystrobin	0.000	< 0.100		0.385	0.400	96.3	79.4 - 127	
Bifenazate	0.000	< 0.100		0.418	0.400	104.6	81.6 - 124	
Bifenthrin	0.000	< 0.100		0.399	0.400	99.8	71.5 - 133	
Boscalid	0.000	< 0.100		0.863	0.800	107.8	74.0 - 131	
Carbaryl	0.013	< 0.100		0.407	0.400	101.8	82.1 - 121	
Carbofuran	0.016	< 0.100		0.396	0.400	98.9	85.1 - 125	
Chlorantraniliprol	0.000	< 0.100		0.416	0.400	103.9	70.6 - 131	
Chlorfenapyr	0.000	< 1.000		1.870	2.000	93.5	71.0 - 132	
Chlorpyrifos	0.000	< 0.100		0.412	0.400	103.1	72.3 - 134	
Clofentezine	0.000	< 0.100		0.391	0.400	97.6	80.1 - 117	
Cyfluthrin	0.000	< 1.000		1.967	2.000	98.4	71.8 - 133	
Cypermethrin	0.000	< 1.000		2.027	2.000	101.4	83.1 - 126	
Daminozide	0.060	< 1.000		1.841	2.000	92.1	74.6 - 124	
Diazinon	0.000	< 0.100		0.386	0.400	96.5	78.9 - 126	
Dichlorvos	0.000	< 0.500		2.016	2.000	100.8	76.1 - 124	
Dimethoat	0.000	< 0.100		0.399	0.400	99.6	82.8 - 119	
Ethoprophos	0.000	< 0.100		0.394	0.400	98.6	69.5 - 129	
Etofenprox	0.000	< 0.100		0.740	0.800	92.5	85.2 - 128	
Etoxazol	0.000	< 0.100		0.411	0.400	102.9	79.7 - 126	
Fenoxycarb	0.000	< 0.100		0.404	0.400	101.0	84.1 - 122	
Fenpyroximat	0.000	< 0.100		0.771	0.800	96.3	82.4 - 126	
Fipronil	0.000	< 0.100		0.763	0.800	95.4	80.6 - 125	
Flonicamid	0.000	< 0.400		0.977	1.000	97.7	80.9 - 119	
Fludoxonil	0.000	< 0.100		0.797	0.800	99.6	73.0 - 136	
Hexythiazox	0.000	< 0.400		0.979	1.000	97.9	82.5 - 125	
Imazalil	0.000	< 0.100		0.431	0.400	107.7	81.4 - 128	
Imidacloprid	0.000	< 0.200		0.806	0.800	100.7	76.9 - 125	
Kresoxim-Methyl	0.000	< 0.100		0.831	0.800	103.9	82.6 - 124	
Malathion	0.000	< 0.100		0.397	0.400	99.2	74.1 - 130	
Metaxalyl	0.000	< 0.100		0.398	0.400	99.6	79.7 - 124	
Methiocarb	0.019	< 0.100		0.380	0.400	95.1	81.0 - 123	
Methomyl	0.000	< 0.200		0.871	0.800	108.8	79.4 - 118	
MGK 264	0.000	< 0.100		0.401	0.400	100.2	77.2 - 128	
Myclobutanil	0.000	< 0.100		0.402	0.400	100.5	80.6 - 123	
Naled	0.000	< 0.200		0.993	1.000	99.3	80.3 - 126	
Oxamyl	0.000	< 0.400		2.215	2.000	110.7	80.1 - 117	
Paclobutrazol	0.000	< 0.200		0.803	0.800	100.4	81.6 - 126	
Parathion Methyl	0.000	< 0.200		0.809	0.800	101.1	72.5 - 135	
Permethrin	0.000	< 0.100		0.455	0.400	113.6	75.0 - 139	
Phosmet	0.000	< 0.100		0.384	0.400	95.9	82.0 - 122	
Piperonyl butoxide	0.000	< 1.000		2.003	2.000	100.1	81.3 - 137	
Prallethrin	0.000	< 0.200		0.427	0.400	106.7	81.3 - 127	
Propiconazole	0.000	< 0.200		0.779	0.800	97.3	84.7 - 121	
Propoxur	0.015	< 0.100		0.406	0.400	101.6	84.2 - 121	
Pyrethrins	0.000	< 0.500		0.403	0.413	97.5	76.1 - 141	
Pyridaben	0.000	< 0.100		0.401	0.400	100.2	79.2 - 147	
Spinosad	0.000	< 0.100		0.455	0.388	117.2	88.4 - 127	
Spiromesifen	0.000	< 0.100		0.390	0.400	97.6	79.9 - 127	
Spirotetramat	0.000	< 0.100		0.392	0.400	97.9	81.1 - 121	
Spiroxamine	0.000	< 0.100		0.782	0.800	97.7	78.4 - 133	
Tebuconazol	0.000	< 0.200		0.823	0.800	102.9	83.1 - 122	
Thiadoprid	0.000	< 0.100		0.398	0.400	99.4	84.3 - 120	
Thiamethoxam	0.000	< 0.100		0.376	0.400	94.0	80.1 - 121	
Trifloxystrobin	0.000	< 0.100		0.398	0.400	99.6	81.4 - 125	



12423 NE Whitaker Way  
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 503-254-1794



**Report Number:** 21-000947/D03.R01  
**Report Date:** 02/11/2021  
**ORELAP#:** OR100028  
**Purchase Order:**  
**Received:** 01/27/21 11:18

Explanation of QC Flag Comments:

Code	Explanation
Q	Matrix interferences affecting spike or surrogate recoveries.
Q1	Quality control result biased high. Only non-detect samples reported.
Q2	Quality control outside QC limits. Data considered estimate.
Q3	Sample concentration greater than four times the amount spiked.
Q4	Non-homogenous sample matrix, affecting RPD result and/or % recoveries.
Q5	Spike results above calibration curve.
Q6	Quality control outside QC limits. Data acceptable based on remaining QC.
R	Relative percent difference (RPD) outside control limit.
R1	RPD non-calculable, as sample or duplicate results are less than five times the LOQ.
R2	Sample replicates RPD non-calculable, as only one replicate is within the analytical range.
LOQ1	Quantitation level raised due to low sample volume and/or dilution.
LOQ2	Quantitation level raised due to matrix interference.
B	Analyte detected in method blank, but not in associated samples.
B1	The sample concentration is greater than 5 times the blank concentration.
B2	The sample concentration is less than 5 times the blank concentration.