



Oregon

Environmental Laboratory Accreditation Program



Department of Agriculture, Laboratory Division
Department of Environmental Quality, Laboratory Program
Oregon Health Authority, Public Health Division

Oregon State Public Health Laboratory
7202 NE Evergreen Pkwy, Suite 100
Hillsboro, OR 97124
PH (503) 693-4122
FAX (503) 693-5602

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Proficiency Testing (PT) in Oregon Cannabis Laboratories

Disclaimer: The information below is a selected highlight of the Oregon Cannabis PT reporting requirements. For complete PT reporting requirements, refer to OAR 333-064 and TNI 2016 V1M1.

According to OAR 333-064-0120, “A laboratory accredited to test marijuana items must at all times have two successful PT studies out of the most recent three attempts for each field of accreditation for which the laboratory holds accreditation.”

In addition, “A PT study for a particular field of accreditation that has an opening date less than seven days from the closing date of the previous PT study for that same field of accreditation” may not be counted toward the laboratory’s PT history of the most recent three attempts and “The closing dates of a PT study for a particular field of accreditation can be no more than seven months apart”, else the laboratory is charged one missed/failed PT sample.

Cannabis plant material (usable marijuana) falls under the Biological Tissue (BT) matrix for ORELAP.

Concentrates, extracts, and products fall under the Solid (S) matrix for ORELAP.

Unless otherwise stated, the laboratory must analyze PT samples for each field of accreditation, meaning each combination of matrix, method/technology, and analyte. **See additional requirements on reporting of PT results following the fields of accreditation table in this document.**

Unless otherwise stated, for potency and pesticides in usable marijuana, the laboratory must use PT samples made from a usable marijuana matrix.

The laboratory must select a PT vendor accredited by The NELAC Institute (TNI): <http://nelac-institute.org/content/NEPTP/ptproviders.php>.

ORELAP currently accredits laboratories for the following fields of accreditation for cannabis testing.

Potency			
Analyte Code	Analyte Name	BT	S
5405	Delta-9 Tetrahydrocannabinol (d9 THC)	X	X
7386	Delta-8 Tetrahydrocannabinol (d8 THC)	X	X
5410	Delta-9 Tetrahydrocannabinolic acid (d9 THCA)	X	X
5415	Cannabidiol (CBD)	X	X
5420	Cannabidolic acid (CBDA)	X	X
Water Activity/Moisture			
Analyte Code	Analyte Name	BT	S
8068	Water activity	X	
3850	Moisture content	X	
Pesticides			
Analyte Code	Analyte Name	BT	S
7366	Abamectin	X	X
7000	Acephate	X	X
7002	Acequinocyl	X	X
7003	Acetamiprid	X	X
7010	Aldicarb	X	X
7076	Azoxystrobin	X	X
7116	Bifenazate	X	X
7117	Bifenthrin	X	X
7128	Boscalid	X	X
7195	Carbaryl	X	X
7205	Carbofuran	X	X
7247	Chlorantraniliprole	X	X
7329	Chlorfenapyr	X	X
7300	Chlorpyrifos	X	X
7966	Clofentezine	X	X
7345	Cyfluthrin	X	X
7346	Cypermethrin	X	X
7348	Daminozide	X	X

Pesticides Continued			
Analyte Code	Analyte Name	BT	S
8610	DDVP (Dichlorvos)	X	X
7410	Diazinon	X	X
7475	Dimethoate	X	X
7570	Ethoprop	X	X
7573	Etofenprox	X	X
7574	Etoxazole	X	X
7597	Fenoxycarb	X	X
7598	Fenpyroximate	X	X
7623	Fipronil	X	X
7628	Flonicamid	X	X
7629	Fludioxonil	X	X
7707	Hexythiazox	X	X
7718	Imazalil	X	X
7702	Imidacloprid	X	X
7747	Kresoxim-methyl	X	X
7770	Malathion	X	X
7790	Metalaxyl	X	X
7800	Methiocarb	X	X
7805	Methomyl	X	X
7825	Methyl parathion	X	X
7860	MGK-264	X	X
7893	Myclobutanil	X	X
7905	Naled	X	X
7940	Oxamyl	X	X
7947	Paclobutrazol	X	X
7975	Permethrins	X	X
8000	Phosmet	X	X
9550	Piperonyl butoxide	X	X
8022	Prallethrin	X	X
8077	Propiconazole	X	X
8080	Propoxur	X	X
8247	Pyrethrins	X	X
8097	Pyridaben	X	X
8136	Spinosad	X	X
8137	Spiromesifen	X	X

Pesticides Continued			
Analyte Code	Analyte Name	BT	S
8139	Spirotetramat	X	X
8141	Spiroxamine	X	X
8174	Tebuconazole	X	X
8214	Thiacloprid	X	X
8216	Thiamethoxam	X	X
8287	Trifloxystrobin	X	X
Heavy Metals			
Analyte Code	Analyte Name	BT	S
1010	Arsenic	X	X
1030	Cadmium	X	X
1075	Lead	X	X
1095	Mercury	X	X
Microbiology			
Analyte Code	Analyte Name	BT	S
5465	<i>Aspergillus</i>	X	X
5466	<i>Aspergillus flavus</i> *	X	X
5467	<i>Aspergillus fumigatus</i> *	X	X
5468	<i>Aspergillus niger</i> *	X	X
5469	<i>Aspergillus terreus</i> *	X	X
2572	Shiga-toxin producing <i>Escherichia coli</i> (STEC)	X	X
2570	<i>Salmonella</i>	X	X
Mycotoxins			
Analyte Code	Analyte Name	BT	S
5445	Aflatoxin B1	X	X
5450	Aflatoxin B2	X	X
5455	Aflatoxin G1	X	X
5460	Aflatoxin G2	X	X
5412	Total Aflatoxins	X	X
5473	Ochratoxin A	X	X
Residual Solvents			
Analyte Code	Analyte Name	BT	S
5250	1,2-Dimethylbenzene (o-Xylene)		X
5240	m+p-Xylene		X
4735	1,4-Dioxane		X
9607	2-Butanol (Sec-butyl alcohol)		X

Residual Solvents Continued			
Analyte Code	Analyte Name	BT	S
5866	2-Ethoxyethanol (Cellosolve)		X
4941	2-Methylpentane (Isohexane)		X
4895	2-Propanol (IPA)		X
4666	2,2-Dimethylbutane		X
4669	2,3-Dimethylbutane		X
4534	3-Methylpentane		X
4315	Acetone		X
4320	Acetonitrile		X
4375	Benzene		X
5007	n-Butane		X
4900	Cumene (Isopropyl benzene)		X
4555	Cyclohexane		X
4975	Dichloromethane (Methylene chloride)		X
4755	Ethyl acetate		X
4725	Ethyl ether (Diethyl ether)		X
4765	Ethylbenzene		X
4785	Ethylene glycol		X
4795	Ethylene oxide		X
4825	Heptane		X
4855	n-Hexane		X
4942	Isobutane (2-Methyl propane)		X
4938	Isopentane (2-Methyl butane)		X
4890	Isopropyl acetate		X
4930	Methanol		X
9511	Neopentane		X
5028	n-Pentane		X
5029	n-Propane		X
5120	Tetrahydrofuran (THF)		X
5140	Toluene		X
5143	Total Butanes		X
9469	Total Hexanes		X
5148	Total Pentanes		X
5260	Total Xylenes		X

* The individual *Aspergillus* species are not required to be reported, but if the laboratory reports the speciated results and maintains accreditation for the four individual species, the individuals as well as general *Aspergillus* must also be reported in PTs.

Reporting PT results:

As mentioned in an email sent on December 6, 2022, ORELAP is transitioning toward an electronic tracking of cannabis laboratory PT results via the ODIE database. In order for the system to work, laboratories must ensure PT results are reported to the providers so the analyte and method codes have an exact match to the field of accreditation in ODIE. In addition, the laboratory's EPA code needs to be reported to the PT provider. These codes can be found on your field of accreditation sent with each certificate renewal or when there has been a change to your scope, such as from an additional parameters application. When entering PT results into the vendor's reporting portal, there should be places to enter the EPA code as well as method and analyte codes for each result. In the case of NSI Lab Solutions, we understand based on information from the vendor that the EPA code should be entered into the "State code" field and the method codes should be entered into the "Method Technology" fields. This is not a new requirement; it has not been enforced historically because PT results have been reviewed manually. OAR 333-064-0120 (3) (a) specifies what must be included when a laboratory reports PT results to the providers.

If you are reporting PT results for *Aspergillus*, please note the asterisk and comment at the end of the above table. The *Aspergillus* analyte code is 5465. In the NSI Lab Solution's CMPT-031B PT for *Aspergillus* molds in cannabis, this is referred to as Total Mold, which is the analyte that must be reported for this PT vendor. This is an example and not an endorsement for NSI Lab Solution's PTs. If your laboratory is accredited to determine which of the four species have been detected, you must also include the individual species.

For chemistry PTs, here's a reminder from V1M1 4.2.2 of the 2016 TNI Standard which requires analyzing and reporting PT results in accordance with the laboratory's routine SOPs. Additionally, V1M1 4.3.7.b) and c) indicate the laboratory must report either the determined numeric value or <LOQ where the LOQ is equal to the laboratory's normal sample LOQ. If a result is above the calibration range of the analysis, the PT extract or digestate must be diluted and reanalyzed or the PT must be reprepared. Additional requirements are summarized below:

- **Report numerical values or less than LOQ**
 - Greater than (>) results will not be accepted by ORELAP. If a PT provider grades a greater than result as acceptable, ORELAP will change the grade to not acceptable.
 - Less than (<) results will only be accepted if the less than value is equal to or less than the laboratory's required LOQ (< LOQ).

- **The time between PTs must not exceed seven months!**
 - If more than seven months passes for an analyte, the laboratory will have a “not acceptable” result on its PT record
 - **Seven months is based on closing dates!** “The closing date of a PT study for a particular field of accreditation can be no more than seven months apart.”
 - The seven months is from the closing date of the previous PT to the closing date of the following PT
 - ORELAP defines one month as 30 calendar days, so seven months is equal to 210 days
 - **Check closing dates for microbiology / metals and supplemental PTs!**

- **Enter method codes when submitting PTs**
 - Method codes may be found on your laboratory’s ORELAP Fields of Accreditation (FOA) in the method code column (right side)
 - Do not mistake analyte code and method code
 - **Method code is the same for all analytes in a method**
 - Analyte code changes for each analyte. The analyte code is not entered with PTs
 - If you have questions, email ORELAP and/or the PT provider
 - Eventually laboratories will receive a not acceptable result if the method code is not correct
 - ORELAP will give notice before this takes effect
 - Recommend laboratories start entering the method codes now
 - Be aware of typos in method codes!
 - The method code must exactly match what is on the laboratory’s FOA – see example below of how to find method code 805 for pesticides by LC-MS-MS

MATRIX	Reference	Code	Analyte	Revision	Rev. Date	Code	Description
Biological Tissue	AOAC 2007.01 & EN 15662: LC- MS/MS					805	Pesticides by LC-MS-MS
		7366	Abamectin				
		7000	Acephate				

- **Enter State Lab Code if reporting to NSI Lab Solutions**
 - **State Lab Code = EPA Code** on FOA
 - EPA Code/State Lab Codes start with ‘TNI’ or ‘OR’
 - Example: ‘TNI001234’ or ‘OR100001’
 - Look for EPA Code in ODIE or on your FOA under EPA Code
 - Enter EPA Code in State Lab Code box under Accreditation Agency

Study: HEMP-0922 NSI Lab Code: N10034
STUDY CLOSES 11/03/2022 (MIDNIGHT EASTERN TIME)

Send Individual Evaluation Report To:

Lab Name: *

Attention: *

Address 1: *

Address 2: *

City: *

State/Zip: * *

Lab Code And Accreditation Information

Send Results To: *

Lab Only

If selecting "Lab Only", skip to "Approval Information" section below

Accreditation Agency

If selecting "Accreditation Agency", provide the following information if applicable:



State Lab Code:

YOU WILL BE ABLE TO VIEW/MODIFY ACCREDITATION AGENCY INFORMATION AFTER CLICKING "CONTINUE" BELOW.

Approval Information

Approved By: *

Title: *

Phone: *

Date: * (mm/dd/yyyy)

E-mail: *

Send e-mail also to (several emails can be added, use ";" a separator):

- **Residual solvents total calculations vs individual analytes (total xylenes, pentanes, hexanes, butanes)**
 - Some PT providers prompt to report each individual analyte, others only have total calculations
 - **Submit based on PT provider instructions**
 - Results for totals will be applied to each individual analyte
 - If the total calculated result fails, each analyte fails
 - Results for the individuals will be applied to the total calculated result
 - If any individual analyte fails, the failure is also applied to the total

Total Calculation	Sum of Individual Analytes
Total Butanes	n-butane; iso-butane
Total Hexanes	n-hexane; 2-methylpentane; 3-methylpentane; 2,2-dimethylbutane; 2,3-dimethylbutane
Total Pentanes	pentane; iso-pentane; neo-pentane
Total Xylenes*	m+p xylene; o-xylene

*ethylbenzene is not included as a total xylene in PTs, report ethylbenzene separately

- **Mycotoxins Individual analytes and total aflatoxins**
 - Report each individual analyte and the calculated value for total aflatoxins

- **Two microbiology methods under same technology**
 - If a laboratory is accredited for two microbiology methods under the same technology (i.e., PCR) for an analyte (e.g. *Salmonella*, STEC), the laboratory may alternate the method used in each PT round. For example, in the spring study use method one and in the fall study use method two
 - **Note:** If the laboratory alternates microbiology methods for PTs, not acceptable results will be applied to both methods. If there is a history of two out of three not acceptable results, the laboratory will be suspended for both microbiology methods
 - The laboratory may also choose not to alternate microbiology method PTs, but must ensure it uses separate lots for each method