Technical Bulletin
New Testing Facility Regulations Implementation

This Bulletin is intended to update Testing Facility Licensees on the implementation of the new testing requirements found in the Mississippi Medical Cannabis Program (MMCP) Regulations, Subpart 5, Product Testing and safety, and available at https://www.mmcp.ms.gov/compliance/regulations. These regulations were published on January 13, 2024, with Subpart 5, Product Testing and Safety regulations, enforcement extended until July 13, 2024, to allow testing facility adequate time to implement. Please be aware that the information contained in this Bulletin and associated links do not represent legal advice or replace a licensee's responsibility to review and comply with statute and rules.

Summary of Subpart 5, Addition, Changes and Corrections

The Mississippi Medical Cannabis Program has attached a Subpart 5 document that identifies continued, new and corrected regulatory language in the following manner to aid testing with review:

1. All language continued/maintained from the previous regulation version are in black font (i.e. Assign a unique identification number for each test batch.).

2. All language removed from the previous regulation version are in black font with a black strikethrough line (i.e. ~~sampling under these rules).~~

3. New language is in red, underlined font. This language was published effective January 13, 2024 (qualified employees/representatives of a licensed testing entity).

4. Redacted new language is in red, underlined font with a red strikethrough line (i.e. ~~Sample Duplicates.~~)

5. Updated new language is in purple, underlined font (i.e. *Required Quality Control samples)*. This language relates to typographical corrections as well as regulatory revisions associated with quality control requirements. The regulatory revisions affect only testing facilities and will not affect other licensees.

The table below summarizes the most recently corrected/updated new product testing and safety regulatory language (in purple) that will be enforced effective July 13, 2024, and included in the next regulation version.

Table 1: Summary of Corrected Subpart 5 Regulations.

Subpart Rule	Correction/Update
5.4.3	Addition of D. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion”**.**
5.4.4	Addition of D. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion”**.**
5.5.9	Added Failed Heavy Metals Testing. “If a sample from a batch fails heavy metals testing, the batch may not be remediated and shall be destroyed in a manner permitted under this Part and/or approved by the Department.”
5.5.10	Added Failed Mycotoxins Testing “If a sample from a batch fails mycotoxins testing, the batch may not be remediated and shall be destroyed in a manner permitted under this Part and/or approved by the Department.”
5.7.5	Removed: “I. Measured of the cannabis and cannabis products” Measured density of the cannabis and cannabis products is removed from the COA.
5.11.4	Corrected “not” to “no” template control and removed “that the” “A PCR run with multiple assays must have no ~~not~~ template controls for each assay to verify ~~that the~~ sterility of the assays.” Corrected 100% to 20% in the following duplicate sample

	performance requirement: For quantitative analyses, if the RPD of the sample and duplicate is greater than 20%, the parent sample and duplicate sample must be reanalyzed.
5.11.5.	Initial Calibration Verification. Updated acceptance criteria in C for initial calibration verification to 20% or 30%, depending on method. "C. The following acceptance criteria must be used: 1. For potency testing, 80 to 120% recovery of true value; 2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value; 3. For heavy metal testing, 80-120% recovery of true value; 4. For terpenoid testing, 80-120% recovery of true value."
5.11.5	Continuing Calibration Verification Updated acceptance criteria in D for continuing calibration verification to 20% or 30%, depending on method. "D. The following acceptance criteria must be used: 1. For potency testing, 80 to 120% recovery of true value; 2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value; 3. For heavy metal testing, 80-120% recovery of true value; 4. For terpenoid testing, 80-120% recovery of true value."
5.11.5	Removed Low Level Continuing Calibration Verification Requirement.
5.11.5	Added "Required Quality Control Samples" section. Required QC samples for each analytical batch: 1. Negative Control, Method Blank or Laboratory Reagent Blank; 2. Positive Control, Laboratory Control Sample (LCS); and 3. Duplicate sample. Under this section, removed Matrix Spike Sample and Duplicate

	Matrix Spike Sample requirement. Matrix Spike Samples and Duplicate Matrix Spike Samples are no longer required to be included in each analytical batch.
5.11.5	Updated Laboratory Control Sample (LCS) acceptance criteria in G to 20% or 30%, depending on the method. " G. The following acceptance criteria must be used: 1. For potency testing, 80 to 120% recovery of true value; 2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value; 3. For heavy metal testing, 80-120% recovery of true value; 4. For terpenoid testing, 80-120% recovery of true value."
5.11.5	Removed additional LCS acceptance criteria. Removed Matrix Spikes and Matrix Spike Duplicate language.
5.11.6	Removed sample duplicates from being required for water activity. Added calibration and verification requirements per manufacturer's instruction manual.
5.11.6	Added Moisture Content calibration and verification requirements per manufacturer's instruction manual.
5.15	Corrected commercial proficiency testing requirement to once per year. "A cannabis testing entity shall participate in a proficiency testing program for all methods available from an organization that operates in conformance with the requirements of ISO/IEC 17043 at least once a year."
5.15	Added an additional required Department proficiency testing event: A cannabis testing entity shall analyze Matrix Spike Sample(s) and Matrix Spike Duplicate Sample(s) at least once every six (6) months as directed by The Department. This event will be provided by the MCCP.
Appendix A	Corrected Maximum Allowable Contaminants:

Table 1	20 µg/kg (pbb) of total aflatoxins 20 µg/kg (pbb) of ochratoxin
Appendix A Table 1	Heavy Metals detected above the allowable concentration require destruction. Remediation removed from required action.
Appendix A Table 1	Defined Moisture Content and Water Activity testing maximum allowable measurement by product type. Required action updated to remediate and retest.
Appendix A Table 2	Changed Per Run to Per Batch.
Appendix A Table 3	Updated table with required inhibition positive control and no template control. Changed Laboratory Replicate Sample to Duplicate sample.
Appendix A Table 4	Updated to include acceptance criteria that is method based for LCS, ICV and CCV. Removed requirement for matrix spike/matrix spike duplicate.
Appendix D	Added Moisture content testing requirements for all Bud/flower, Shake/Trim or Raw Pre-Roll.
Appendix D	Removed water activity testing requirement for Infused Non-Edible Solids

ADMINISTRATIVE RULES

TITLE 15—MISSISSIPPI STATE DEPARTMENT OF HEALTH

PART 22—MEDICAL CANNABIS PROGRAM

Subpart 5

Subpart 5 PRODUCT TESTING AND SAFETY

5.1 General.

5.1.1 Cannabis testing ~~facilities~~ entities shall test for cannabis-related analytes for which they are licensed and registered by the Department.

5.1.2 Cannabis testing ~~facilities~~ entities shall develop and implement an employee training program to ensure competency of cannabis testing ~~facility~~ entity employees for their assigned function and shall document each employee's qualifications.

5.1.3 ~~A cannabis processing licensee, or any medical cannabis establishment~~ Licensees shall not treat or otherwise adulterate a cannabinoid product, concentrate, cannabinoid extract, or extract with any non-cannabinoid additive that would increase potency, toxicity or addictive potential, or that would create an unsafe combination, with caffeine or other chemical that may increase carcinogenicity or cardiac effects.

5.1.4 All edible cannabis products ~~must~~ shall be homogenized to ensure uniform disbursement of cannabinoids throughout the product(s).

5.1.5 ~~Cannabis cultivation~~ Every medical cannabis establishment licensee~~s~~ ~~must~~ shall comply with the testing requirements ~~rules and regulations~~ for cannabis and cannabis products in this Part~~related to Cannabis Testing Facilities in Subpart 1: Cannabis Testing Facilities~~.

5.2 Batch Requirements.

5.2.1 A medical cannabis establishment ~~must~~ shall separate each harvest batch package or production batch package ~~lot~~ of usable medical cannabis into no larger than twenty-five pound (25 lb) ~~batches~~ packages for testing purposes.

5.2.2 Notwithstanding Rule ~~1.5.1~~ 5.2.1 of this section, a medical cannabis establishment may combine harvest batch~~es~~ packages for purposes of ~~having a batch sampled~~ test sampling if ~~each batch is~~ intended for use by a ~~medical~~

~~cannabis establishment~~ licensed processing entity to make a cannabinoid concentrate or extract ~~and each harvest lot was:~~

~~A. Cultivated utilizing the same growing practices and grown in close proximity on the licensed or registered premises;~~

~~B. Harvested at the same time; and~~

~~C. If cured prior to sampling, cured under uniform conditions~~.

5.2.3 A medical cannabis establishment may not combine harvest ~~lots into a~~ batch packages for purposes of sampling and testing for THC or CBD.

~~If harvest lots are combined in accordance with Rule 1.5.2, the batch must be labeled so that it identifies the different harvest lots that were combined.~~

~~For all concentrates and extracts, a process lot is considered a batch.~~

5.2.4 A medical cannabis establishment ~~must~~ shall assign each harvest and production batch a unique batch number as defined in this Part and that unique batch number ~~must~~ shall be:

A. Documented and maintained in the ~~cannabis cultivation facility or cannabis dispensary~~ licensee's records for at least two years and available to the Department upon request;

B. Provided to the individual responsible for taking ~~testing~~ samples; and

C. Included on the batch label.

5.3 Sample Size, Handling, Storage and Disposal.

5.3.1 ~~Usable medical cannabis may only be sampled only after it is cured, unless the usable medical cannabis is intended for sale or transfer to a medical cannabis establishment to make a cannabinoid concentrate or extract.~~

An employee of a licensed testing facility will obtain and analyze test samples only from usable medical cannabis.

Cannabis products shall be sampled and tested in final form in accordance with the rules in this Part.

5.3.2 Sampling ~~must~~ shall be conducted on-site at ~~a~~ the cannabis cultivation ~~facility~~ or ~~dispensary~~ processing entity~~'s premises~~.

T~~he t~~esting ~~facility~~ entity personnel shall have access to the entire batch for the purposes of sampling.

5.3.3 Sampling Requirements for Mandatory Testing.

A. All samples must be collected, stored, and transported in a way that mitigates contamination and degradation.

B. Sampling of each harvest batch or production batch shall be conducted with representative samples such that there is assurance that all harvest or process lots are adequately assessed for contaminants and that the cannabinoid profile is consistent throughout.

C. For mandatory harvest/production batch sampling, the total batch weight or count to be sampled shall be verified by the testing licensee. A testing licensee shall not pull samples for mandatory testing if there is reasonable belief the full batch is not present for sampling.

D. A representative sample shall be taken from each container or area holding the harvest/production

batch, from the top, middle, and bottom of the total contents.

E. The sampling shall be video-recorded, with the batch number stated verbally or in writing on the video at the beginning of the video and a visible time and date indication on the video recording footage. A facility employee must be present but not involved nor assisting with the sampling. The video recordings shall be maintained for 90 calendar days.

5.3.4 ~~Samples taken must in total represent a minimum of 0.5 percent of the batch and consist of minimally 12 unique increments of 1gram each, with at least 50% of the sample taken homogenized for testing in compliance with the laboratory's sampling policies and procedures. The primary sample, the duplicate sample and any required replicate samples must be prepared and analyzed separately.~~

The maximum harvest batch package is twenty-five pounds (25 lbs). For harvest batch sampling a licensed testing entity shall take a minimum of fifteen (15) sample increments of half a gram (0.5 g) each. Additional increments may be

collected to ensure that the samples obtained are representative and are sufficient to perform required testing.

5.3.5 ~~For cannabis-infused products, a laboratory must~~ The production batch for infused cannabis products (edible, non-edible liquids, non-edible solids) shall not contain more than 150,000 units. For infused and edible cannabis products, the test sample collected by a licensed testing entity for product testing shall comply with the ~~take the following~~ minimum number of units set forth below based upon the production batch size. Additional increments may be collected to ensure that the samples obtained are representative.

A. ~~2~~ 3 units for a production batch of up to 100 units.

B. ~~5~~ 6 units for a production batch of 101 to 500 units.

C. ~~6~~ 9 units for a production batch of 501 to 1000 units.

D. ~~8~~ 12 units for a production batch of 1001 to 5000 units.

E. ~~10~~ 15 units for a production batch of 5001 to 10,000 units.

F. ~~12~~ 20 units for a production batch 10,001 to 35,000 units.

G. 30 units for a production batch of 35,001 to 100,000 units.

H. 50 units for a production batch of 100,001 to 150,000 units.

5.3.6 ~~For cannabinoid concentrates extracts and products, samples must in total represent a minimum of 0.3 percent of the batch and consist of enough samples from a batch must be taken to ensure that the required attributes in the batch to be tested are homogenous and consistent with the laboratory's accredited sampling policies and procedures.~~

For a cannabis concentrate, each sample increment taken by a licensed testing entity for product testing shall be one-quarter gram (0.25 g). The test sample collected by a licensed testing entity for product testing shall comply with the minimum number of increments set forth below based upon the production batch size. Additional increments may be collected to ensure that the samples obtained are representative.

A. 12 increments for a production batch of 1 to 2 pounds.

B. 15 increments for a production batch of 2.01 to 3 pounds.

C. 18 increments for a production batch of 3.01 to 4 pounds.

D. 23 increments for a production batch of 4.01 to 10 pounds.

E. 30 increments for a production batch greater than 10 pounds.

5.3.7 A production batch of raw or infused pre-rolls shall contain no more than 150,000 units. The test sample collected by a licensed testing entity for product testing shall comply with the minimum number of increments relative to the batch size as set forth below. Additional increments may be collected at the discretion of the licensed testing entity to ensure that the samples obtained are representative. Each sample increment consists of one packaged unit.

A. 2 units for a production batch of up to 50 units.

B. 3 units for a production batch of 51 to 100 units.

C. 4 units for a production batch of 101 to 500 units.

D. 8 units for a production batch of 501 to 1500 units.

E. 12 units for a production batch of 1501 to 3000 units.

F. 20 units for a production batch of 3001 to 10,000 units.

G. 30 units for a production batch of 10,001 units- 35,000 units.

H. 50 units for a production batch of 35,001 units – 150,000 units.

5.3.8 A production batch of inhalable concentrate products shall contain no more than 150,000 units. The test sample collected by a licensed testing entity for product testing shall comply with the minimum number of increments relative to the batch size as set forth below. Additional increments may be collected at the discretion of the licensed testing entity to ensure that the samples obtained are representative. Each sample increment consists of one packaged unit.

A. 2 units for a production batch of up to 50 units.

B. 3 units for a production batch of 51 to 100 units.

C. 4 units for a production batch of 101 to 500 units.

D. 8 units for a production batch of 501 to 1500 units.

E. 12 units for a production batch of 1501 to 3000 units.

F. 20 units for a production batch of 3001 to 10,000 units.

G. 30 units for a production batch of 10,001 units- 35,000 units.

H. 50 units for a production batch of 35,001 units – 150,000 units.

5.3.9 A licensed testing entity shall not do any of the following:

A. Desiccate samples;

B. Test compliance samples without homogenization where required by the rules in this part; or

C. Select only themost desirable material from a batch or sample for testing; or

D. Manipulate samples in any way that would alter the sample integrity or homogeneity of the sample. All sample increments must have the same genesis.

5.3.10 Only qualified employees/representatives of a licensed testing entity ~~sampling under these rules~~ may ~~take~~ collect and transport test samples and ~~must~~ shall follow the testing ~~facility~~ entity's accredited sampling and transportation policies and procedure when collecting samples for testing.

A. A licensed testing entity ~~must~~ shall prepare medical cannabis sampling policies and procedures that contain all of the information necessary for collecting and transporting samples from usable medical cannabis in a manner that does not endanger the integrity of the sample for any analysis required by this rule. These policies and procedures ~~must~~ shall be appropriate to the matrix being sampled.

B. Care ~~must~~ shall be taken to avoid contamination of the non-sampled material. Sample containers ~~must~~ shall be free of analytes of interest and appropriate for the analyses requested.

C. A sufficient sample size ~~must~~ shall be taken for analysis of all requested tests and the quality control performed by the testing laboratory for these tests.

D. A licensed testing entity ~~must~~ shall comply with any recording requirements for samples and subsamples in the policies and procedures and at a minimum:

1. Record the location of each sample and subsample taken.

2. Subsamples collected from the same batch ~~must~~ shall be combined into a single sample by a laboratory prior to testing.

3. Subsamples and samples collected from different batches may not be combined.

4. Field duplicates may not be combined with the primary samples.

5. Assign a field identification number for each sample, subsample and field duplicate that have an unequivocal link to the laboratory identification

number.

6. Assign a unique identification number for each test batch.

7. Have a documented system for uniquely identifying the samples to be tested to ensure there can be no confusion regarding the identity of such samples at any time. This system ~~must~~ shall include identification for all samples, subsamples, preservations, sample containers, tests, and subsequent extracts or digestates.

8. Place the ~~laboratory~~ licensed testing entity identification code as a durable mark on each sample container.

9. Enter a unique sample identification number into the laboratory records. This number ~~must~~ shall be the link that associates the sample with related laboratory activities such as sample preparation. In cases where the sample collector and analyst are the same individual, or the laboratory pre-assigns numbers to sample containers, the unique identification number may be the same as the field identification code.

E. The ~~cannabis must~~ test sample(s) shall be transported in one or more sealed containers and not be accessible while in transit.

F. The vehicle a testing facility employee uses to transport medical cannabis test samples ~~of cannabis product must~~ shall not bear markings or other indication that it is carrying cannabis or a cannabis ~~infused~~ product.

G. All test samples shall be transported by a qualified employee of a licensed testing facility and shall not be transported in the same vehicle as other products.

H. An employee of the medical cannabis establishment from which a test sample is being collected shall be physically present to observe the testing facility employee collect the test sample and ensure that the sample increments are taken from throughout the batch.

I. No employee of the medical cannabis establishment from which a test sample is being collected shall assist the testing facility employee nor touch the harvest and/or production batch package or sampling equipment while the testing facility employee is obtaining the test sample.

J. After test samples have been selected, both the employee of the medical cannabis establishment having the test samples collected and the employee of the testing facility shall sign and date the chain of custody form, attesting to the following sample information:

1. Product name;

2. Weight of product;

3. All products and test samples are correctly identified in the statewide seed-to-sale system; and,

4. If the test sample is obtained for a retest, the testing facility confirms that it is not accepting a test sample that is prohibited from being retested.

K. The medical cannabis establishment from which the test sample is collected shall enter in the statewide seed-to-sale system the test sample that is collected by a licensed testing facility, including the date and time the test sample is collected and transferred.

L. When a test sample is collected from a medical cannabis establishment for testing, that licensee shall quarantine the product that is undergoing the testing from any other product at the facility. The quarantined product may not be packaged, transferred, or sold until passing test results are entered into the statewide monitoring system.

M. Any cannabis or cannabis product collected for testing shall not be transferred or sold to any person or entity other than the licensee from whom the sample was collected. This provision does not apply to a testing facility that engages another testing facility to perform certain safety tests on a subcontracted basis.

N. A testing facility may collect additional sample material from the same licensee from which the original sample was collected for the purposes of completing the required safety tests as long as the requirements of this Rule are met.

5.3.11 An approved ~~laboratory~~ testing entity shall store each test sample under the appropriate conditions to protect the physical and chemical integrity of the sample.

A. Analyzed test samples consisting of cannabis or cannabis-derived product shall be appropriately segregated, controlled, and held in a controlled access area pending destruction or other disposal.

B. Any portion of a cannabis or cannabis-derived test sample that is not destroyed during analysis shall be:

1. Returned to the licensed producer who provided the sample under chain of custody; or

2. Destroyed in accordance with the ~~wastage~~ disposal requirements of this

~~Rule~~ Part.

5.3.12 A ~~laboratory~~ testing entity ~~must~~ shall maintain the documentation required in these rules for at least five years and ~~must~~ shall provide that information to the Department upon request.

5.4 Testing Requirements and Standards.

5.4.1 Testing Requirements for ~~Usable Medical~~ Cannabis and Cannabis Products.

A. All sample increments collected must be homogenized prior to sample analyses, notwithstanding foreign material testing.

B. ~~A cultivation facility or processing facility shall test e~~Every harvest batch of ~~usable medical~~ cannabis flower shall be tested for the following prior to sale or distribution to a qualified patient or caregiver~~, prior to selling or transferring the usable medical cannabis for the following~~:

1. Pesticides in accordance with Rule ~~1.7.4~~ 5.4.3 of this ~~Chapter~~ Part;
2. Water activity and moisture content in accordance with Rule ~~1.7.6~~ 5.4.5 of this ~~Chapter~~ Part;
3. THC and CBD concentration in accordance with Rule ~~1.7.7~~ 5.4.6 of this ~~Chapter~~ Part;
4. Heavy Metals in accordance with Rule ~~1.7.8~~ 5.4.7 of this ~~Chapter~~ Part;
5. Mycotoxins in accordance with Rule ~~1.7.9~~ 5.4.8 of this ~~Chapter~~ Part;
6. Microbiological contaminants in accordance with Rule ~~1.7.3~~ 5.4.2 of this ~~Chapter~~ Part;
7. Terpenes, if performed, in accordance with Rule ~~1.7.10~~ 5.4.9 of this ~~Chapter~~ Part;
8. Foreign material in accordance with Rule ~~1.7.11~~ 5.4.10 of this ~~Chapter~~ Part.

C. Every production batch of raw pre-rolls shall be tested in ~~it's~~ the final form intended for sale or distribution to a qualified patient or caregiver~~,~~ for the following prior to ~~selling~~ sale or transfer~~ring the usable medical cannabis for the following~~:

1. Pesticides in accordance with Rule ~~1.7.4~~ 5.4.3 of this ~~Chapter~~ Part;

2. Water activity and moisture content in accordance with Rule ~~1.7.6~~ 5.4.5 of this ~~Chapter~~ Part;

3. THC and CBD concentration in accordance with Rule ~~1.7.7~~ 5.4.6 of this ~~Chapter~~ Part;

4. Heavy Metals in accordance with Rule ~~1.7.8~~ 5.4.7 of this ~~Chapter~~ Part;

5. Mycotoxins in accordance with Rule ~~1.7.9~~ 5.4.8 of this ~~Chapter~~ Part;

6. Microbiological contaminants in accordance with Rule ~~1.7.3~~ 5.4.2 of this ~~Chapter~~ Part;

7. Terpenes, if performed, in accordance with Rule ~~1.7.10~~ 5.4.9 of this ~~Chapter~~ Part;

8. Foreign material in accordance with Rule ~~1.7.11~~ 5.4.10 of this ~~Chapter~~ Part.

~~Testing Requirements for Concentrates, Extracts, and Edibles.~~

D. ~~A cultivation facility or processing facility shall test e~~Every ~~process lot~~ production batch of cannabinoid concentrate~~,~~ and extract ~~or edible for sale or distribution to a qualified patient prior to selling or transferring the cannabinoid concentrate, extract or edible~~ shall be tested in ~~it's~~ the final form intended for sale or distribution to a qualified patient or caregiver for the following prior to sale or transfer:

1. Pesticides in accordance with Rule ~~1.7.4~~ 5.4.3 of this ~~Chapter~~ Part;

2. Water activity and moisture content in accordance with Rule ~~1.7.6~~ 5.4.5 of this ~~Chapter~~ Part;

3. THC and CBD concentration in accordance with Rule ~~1.7.7~~ 5.4.6 of this ~~Chapter~~ Part;

4. Heavy Metals in accordance with Rule ~~1.7.8~~ 5.4.7 of this ~~Chapter~~ Part;

5. Mycotoxins in accordance with Rule ~~1.7.9~~ 5.4.8 of this ~~Chapter~~ Part;

6. Microbiological contaminants in accordance with Rule ~~1.7.3~~ 5.4.2 of this ~~Chapter~~ Part;

7. Terpenes, if performed, in accordance with Rule ~~1.7.10~~ 5.4.9 of this ~~Chapter~~ Part;

8. Foreign material in accordance with Rule ~~1.7.11~~ 5.4.10 of this ~~Chapter~~ Part.

9. A ~~cultivation facility or~~ processing ~~facility~~ entity is exempt from testing concentrates for solvents under this Rule if the ~~cultivation facility or~~ processing ~~facility~~ entity:

    a. Did not use any solvent listed in Appendix A, Table ~~2~~ 1; and,

    b. Solvents in Used a mechanical extraction process to separate cannabinoids from the cannabis; or

    c. Used only water, animal fat or vegetable oil as a solvent to separate the cannabinoids from the cannabis.

E. Every production batch of infused cannabis products shall be tested in ~~it's~~ the final form intended for sale or distribution to a qualified patient or caregiver for the following prior to sale or transfer:

1. Pesticides in accordance with Rule 5.4.3 of this Part;
2. Water activity and moisture content in accordance with Rule 5.4.5 of this Part;
3. THC and CBD concentration in accordance with Rule 5.4.6 of this Part;
4. Heavy Metals in accordance with Rule 5.4.7 of this Part;
5. Mycotoxins in accordance with Rule 5.4.8 of this Part;
6. Microbiological contaminants in accordance with Rule 5.4.2 of this Part;
7. Terpenes, if performed, in accordance with Rule 5.4.9 of this Part;
8. Foreign material in accordance with Rule 5.4.10 of this Part; and
9. Homogeneity.
10. Final form edible cannabis products shall meet the following additional requirements:

    a. Produced and sold with a standardized concentration of cannabinoids not to exceed ten milligrams (10 mg) of total tetrahydrocannabinol (THC) per serving with an allowable variance of ±10% when testing.

    b. Must demonstrate uniform disbursement of cannabinoids throughout the product when sampled and tested.

11. Infused non-edible products and beverages are exempt from water activity and moisture content testing.

F. Every production batch of Kief shall be tested in the final form intended for sale or distribution to a qualified patient or caregiver for the following prior to sale or transfer:

1. Pesticides in accordance with Rule 5.4.3 of this Part;
2. Water activity and moisture content in accordance with Rule 5.4.5 of this Part;
3. THC and CBD concentration in accordance with Rule 5.4.6 of this Part;
4. Heavy Metals in accordance with Rule 5.4.7 of this Part;
5. Mycotoxins in accordance with Rule 5.4.8 of this Part;
6. Microbiological contaminants in accordance with Rule 5.4.2 of this Part;
7. Terpenes, if performed, in accordance with Rule 5.4.9 of this Part; and
8. Foreign material in accordance with Rule 5.4.10 of this Part; and

G. Every production batch of infused pre-rolls and inhalable compound concentrate products shall be tested in the final form intended for sale or distribution to a qualified patient or caregiver for the following prior to sale or transfer:

1. Pesticides in accordance with Rule 5.4.3 of this Part;
2. Water activity and moisture content in accordance with Rule 5.4.5 of this Part;
3. THC and CBD concentration in accordance with Rule 5.4.6 of this Part;
4. Heavy Metals in accordance with Rule 5.4.7 of this Part;
5. Mycotoxins in accordance with Rule 5.4.8 of this Part;
6. Microbiological contaminants in accordance with Rule 5.4.2 of this Part;
7. Terpenes, if performed, in accordance with Rule 5.4.9 of this Part; and
8. Foreign material in accordance with Rule 5.4.10 of this Part.

H. Testing Standards: All compliance testing requirements by product type are summarized in Appendix D and all compliance testing requirements by final packaging are summarized in Appendix E.

5.4.2 Standards for Testing Microbiological Contaminants.

A. ~~Usable~~ Medical cannabis and medical cannabis products required to be tested for microbiological contaminants shall be sampled using appropriate aseptic technique and tested by a Mississippi licensed and registered cannabis testing ~~facility~~ entity for microbial impurities.

B. The cannabis testing ~~facility~~ entity shall report the result of the microbial

impurities testing by indicating "pass" or "fail" on the Certificate of Analysis.

C. All cannabis products shall be deemed to have passed the microbial impurities testing if all of the following conditions are met:

1. Total ~~*Escherichia coli*~~ coliform is not detected above 100 colony forming units/gram.
2. Shiga toxin–producing Escherichia coli is not detected in 1 gram;
3. Salmonella spp. is not detected in 1 gram; and
4. Pathogenic Aspergillus species *A. fumigatus*, *A. flavus*, *A. niger*, and *A. terreus* are not detected in 1 gram.
5. Total Yeast and Mold is not detected above 10,000 colony-forming units/gram.

D. Microbial impurities testing shall include an optimized incubation period for all plating-based methods used to report total coliform and total yeast and mold results.

~~The sample of non-inhalable cannabis and cannabis products shall be deemed to have passed the microbial impurities testing if both the following conditions are met:~~

~~a. Total *Escherichia coli* is not detected above 100 colony forming units/gram.~~

~~b. Shiga toxin–producing Escherichia coli is not detected in 1 gram, and~~

~~c. Salmonella spp. is not detected in 1 gram.~~

E. If the sample fails microbial impurities testing, the batch from which the sample was collected fails microbial impurities testing and shall not be released for retail sale.

F. The testing entity shall follow the protocol or product instructions provided by the equipment manufacturer, including any enrichment steps. If enrichment is recommended but not required, the enrichment shall be performed.

G. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.3 Standards for Testing Pesticides

A. ~~Usable~~ Medical cannabis and medical cannabis products required to be tested for pesticides shall be tested by a Mississippi licensed, and registered

cannabis testing ~~facility~~ entity approved for the analytes listed in Appendix A, Table 1.

B. The cannabis testing ~~facility~~ entity shall report whether any Residual Pesticides are detected above the limit of detection (LOD) and shall report the result of the testing in ppms on the Certificate of Analysis. The cannabis testing facility shall indicate "pass" or "fail" on the Certificate of Analysis.

C. A batch fails pesticide testing if a cannabis testing ~~facility~~ entity detects the presence of a pesticide above the action levels listed in Appendix A, Table 1 in a sample:

1. During an initial test where no reanalysis is requested; o
2. Upon reanalysis as described in Rule ~~1.6.7~~ 5.5.1of this ~~Chapter~~ Part.

D. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.4 Standards for Testing Solvents.

A. ~~Usable~~ M~~m~~edical cannabis products required to be tested for solvents shall be tested by a Mississippi licensed, and registered cannabis testing ~~facility~~ entity approved for the analytes listed in Appendix A, Table ~~2~~ 1.

B. The cannabis testing ~~facility~~ entity shall report the result of the residual solvents testing in ppm on the Certificate of Analysis and indicate "pass" or "fail" on the Certificate of Analysis.

C. A batch fails solvent testing if a cannabis testing ~~facility~~ entity, during an initial test where no reanalysis is requested or upon reanalysis as described in ~~subchapter 6~~ section 5.5 of this ~~Chapter~~ Part:

1. Detects the presence of a solvent above the action level listed in Appendix A, Table ~~2~~ 1; or
2. Calculates a RPD of more than twenty percent (20%) between the field primary result of the sample and the field duplicate result.

D. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.5 Standards for Testing Water Activity and Moisture Content.

~~A. Usable~~ Medical cannabis and medical cannabis products required to be tested for water activity and moisture content shall be tested by a currently

Mississippi licensed and registered cannabis testing ~~facility~~ entity. ~~for:~~

~~1. Water activity; and~~

~~2. Moisture content.~~

B. If a sample has a water activity rate of more than 0.65 a_w the sample fails except for an edible infused cannabis product.

C. An edible cannabis-infused product fails water activity testing if the water activity rate of more than 0.85 a_w.

D. Non-edible infused products are not subject to water activity testing.

E. The cannabis testing ~~facility~~ entity shall report the result of the water activity test on the COA and indicate "pass" or "fail" on the COA.

F. If sample has a moisture content of more than fifteen percent (15%), the sample fails. The cannabis testing ~~facility~~ entity shall report the result of the moisture content on the COA and indicate "pass" or "fail" on the COA.

G. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.6 Standards for Potency (THC and CBD) Testing.

A. In the preparation of samples intended for potency analysis, the testing entity may not adulterate or attempt to manipulate the total potency of the sample by any means, including by the addition of trichomes that were removed during the grinding and homogenization process.

B. All flower material used for potency testing shall be representative of the product used by the end consumer and homogenized in such a way that it is representative of the way a consumer would be using the product. Kief shall not be reintroduced to the flower sample during the homogenization process.

C. A ~~Mississippi~~ licensed ~~and registered~~ cannabis testing ~~facility~~ entity shall test for the following at a minimum when testing ~~usable~~ medical cannabis and medical cannabis products for potency without any corrective factor taken for moisture content:

1. Delta-8- tetrahydrocannabinol;
2. Delta-8- tetrahydrocannabinolic acid;
3. Delta-9-tetrahydrocannabinol;
4. Delta-9-tetrahydrocannabinolic acid;

5. Cannabidiol (CBD);
6. Cannabidiolic acid (CBDA);
7. THC content;
8. Cannabinol (CBN); and
9. Any other cannabinoid determined by the department.

E. A cannabis testing ~~facility~~ entity shall establish a limit of quantitation of 1.0 mg/g or lower for all cannabinoids analyzed and reported.

F. A cannabis testing ~~facility~~ entity shall report the result of the cannabinoid testing on the Certificate of Analysis, including, at minimum:

1. A percentage for THC, THCA, CBD, and CBDA. The dry-weight percent shall be calculated using the below equation: Dry-weight percent cannabinoid = wet-weight percent cannabinoid/(1 − percent moisture/100);
2. A percentage for Total THC and Total CBD, if applicable;
3. Milligrams per gram (mg/g) if by dry-weight or milligrams per milliliter (mg/mL) if by volume for THC, THCA, CBD, and CBDA;
4. Milligrams per gram (mg/g) if by dry-weight or milligrams per milliliter (mg/mL) if by volume for Total THC and Total CBD, if applicable;
5. Total cannabinoid concentration shall be calculated for concentration expressed in weight: Total cannabinoid concentration (mg/g) = (cannabinoid acid form concentration (mg/g) x 0.877) + cannabinoid concentration (mg/g);
6. Milligrams per package for THC and CBD;
7. Milligrams per package for Total THC and Total CBD, if applicable;
8. Milligrams per serving for THC and CBD, if any;
9. Milligrams per serving for Total THC and Total CBD, if any and if applicable;
10. For edible cannabis products, the cannabis testing entity shall also report, the concentration in milligrams per serving (mg/serving) and milligrams per package (mg/package).
11. The results of all other cannabinoids analyzed on the COA both as a percentage and in either milligrams per gram (mg/g) if by weight or milligrams per milliliter (mg/mL) if by volume.
12. The sample shall be deemed to have passed the cannabinoid testing if the

amount of THC does not exceed the limits below:

a. Cannabis flower or trim potency ≤ 30% total THC;

b. Cannabis tinctures, oils or concentrates ≤ 60% total THC.

F. A cannabis testing ~~facility~~ entity shall report the test results and indicate an overall "pass" or "fail" for the cannabinoid testing on the Certificate of Analysis.

G. Total THC, and/or Total CBD claimed to be present on a label shall not be considered inaccurate if the difference in percentage on the certificate of analysis is plus or minus 10.0%.

H. A ~~process lot~~ production batch of cannabinoid concentrate or extract fails potency testing if, based on an initial test where no reanalysis is requested or upon reanalysis, the amount of THC, as calculated pursuant to Rule ~~1.7.7~~ 5.4.6 of this ~~chapter~~ Part, between samples taken from the batch exceeds ~~thirty~~ twenty percent (~~3~~20%) RSD.

I. The testing facility shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.7 Standards for Testing for Heavy Metals.

A. ~~Usable~~ Medical cannabis and medical cannabis products shall be tested by a current Mississippi licensed and registered cannabis testing ~~facility~~ entity for the metals listed in Appendix A.

B. A cannabis testing ~~facility~~ entity shall report the result of the heavy metals test on the Certificate of Analysis and indicate "pass" or "fail" on the COA.

C. A batch fails metals testing if a cannabis testing ~~facility~~ entity, during an initial test where no reanalysis is requested or upon reanalysis as described in ~~subchapter 6~~ section 5.5 of this ~~Chapter~~ Part detects the presence of metals above the action level listed in Appendix A, Table ~~3~~ 1.

D. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.8 Standards for Mycotoxin Testing.

A. ~~Usable~~ Medical cannabis and medical cannabis products shall be tested by a Mississippi licensed and registered cannabis testing ~~facility~~ entity for the following mycotoxins: Aflatoxin B1, B2, G1, and G2 Ochratoxin A ~~listed~~.

B. A batch shall be deemed to have passed mycotoxin testing if both the following conditions are met:

1. Total of aflatoxin B1, B2, G1, and G2 does not exceed 20 µg/kg of substance, and

2. Ochratoxin A does not exceed 20 µg/kg of substance.

C. A cannabis testing ~~facility~~ entity shall report the result of the mycotoxin testing on the Certificate of Analysis and indicate "pass" or "fail" on the COA.

D. A batch fails mycotoxin testing if a cannabis testing ~~facility~~ entity, during an initial test where no reanalysis is requested or upon reanalysis as described in ~~subchapter 6~~ section 5.5 of this ~~Chapter~~ Part detects the presence of mycotoxins above the action level listed in Appendix A, Table 1.

E. The testing facility shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.9 Standards for Terpenoid Testing.

A. Terpene analysis is not required. However, if terpene content is listed on product packaging or label, a terpene analysis from a Mississippi licensed and registered cannabis testing ~~facility~~ entity ~~must~~ shall be performed to confirm the product label.

B. A cannabis testing facility shall report the result of the terpenoid testing on the COA both as a percentage and in either milligrams per gram (mg/g) if by weight or milligrams per milliliter (mg/mL) if by volume.

C. The terpenoid testing results on the label of any one terpenoid claimed to be present shall not be considered inaccurate if the difference in percentage on the COA is plus or minus 10.0%.

E. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.10 Standards for Foreign Material Testing.

A. ~~Usable~~ Medical cannabis and medical cannabis products shall be tested by a Mississippi licensed and registered cannabis testing ~~facility~~ entity to determine whether foreign material is present.

B. A cannabis testing ~~facility~~ entity shall report the result of the foreign material

test by indicating “pass” or “fail” on the COA.

C. A cannabis testing ~~facility~~ entity shall perform foreign material testing on the total representative sample prior to sample homogenization.

D. When the licensed ~~laboratory~~ testing entity performs foreign material testing, at minimum, ~~the laboratory~~ it shall do all of the following:

1. Examine both the exterior and interior of the dried flower sample, and;
2. Examine the exterior of the cannabis product sample.

E. The sample shall be deemed to have passed the foreign material testing if the presence of foreign material does not exceed:

1. One-fourth (1/4) of the total sample area covered by sand, soil, cinders, or dirt;
2. One-fourth (1/4) of the total sample area covered by mold;
3. One (1) insect fragment, 1 hair, or 1 count mammalian excreta per 3.0 grams; or
4. One-fourth (1/4) of the total sample area covered by an imbedded foreign material.

F. If the sample fails foreign material testing, the batch from which the sample was collected fails foreign material testing and shall not be released for retail sale.

G. The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

5.4.11 Standards for Homogeneity Testing.

A. Infused cannabis products must be homogenous, with the THC and CBD content evenly distributed throughout.

B. Infused cannabis products shall only be considered homogenous if the concentration of total THC and/or CBD in milligrams per serving for three (3) units from the batch is +/- 15% of the stated THC/CBD per serving.

C. Each type of infused product shall be tested every six (6) months and any time the manufacturing process or ingredient(s) change.

D. An infused cannabis product that fails homogeneity testing shall not be released for retail sale. All subsequent production batches of the failed item type shall undergo homogeneity testing until three (3) consecutive batches pass.

E. ~~H.~~ The testing entity shall enter all test results into the seed-to-sale system within three (3) business days of test completion.

F. ~~I.~~ The processor shall maintain copies of the test results for each product type for at least one (1) year after the specific item is discontinued.

5.4.12 If a testing ~~facility~~ entity is not accredited for the full scope of state-required tests, the testing facility will need to subcontract with another Department-licensed testing facility for the relevant tests needed. All subcontracted testing ~~must~~ shall be documented in the seed-to-sale system and be transferred using appropriate transport processes and chain of custody.

5.4.13 If a testing entity performs research and development testing, the laboratory shall comply with these rules.

A. Punitive action shall not be taken against a licensed medical cannabis establishment for conducting research and development testing when permitted.

B. The Department may publish guidance for research and development testing that shall be followed by all licensed medical cannabis establishments.

C. Research and development testing is only permitted BEFORE compliance testing for all analytes except Terpenes, which shall always be ordered as an R&D test.

D. All research and development testing shall be fully completed and reported into the seed-to-sale system by the testing entity BEFORE the final compliance testing can be ordered by the licensee.

E. Research and development testing shall not replace the Department's required safety compliance testing.

5.4.14 The ~~agency~~ Department shall take immediate disciplinary action, including sanctions, fines, or both, against any ~~laboratory~~ testing entity that falsifies records or ~~does not~~ fails to comply with the provisions of this ~~rule~~ Part.

5.4.15 A ~~laboratory~~ testing entity shall comply with random compliance checks at the request of the ~~agency~~ Department. The ~~agency~~ Department or its authorized agents may collect a random sample of a medical cannabis product from a testing ~~facility~~ entity or designate another testing ~~facility~~ entity to collect a

random sample of a medical cannabis product in a secure manner to test that sample for compliance pursuant to these Rules.

5.5 Failed Test Samples.

5.5.1 If a sample fails any initial test, the cannabis testing ~~facility~~ entity that did the testing may reanalyze the sample. If the sample passes, another cannabis testing ~~facility~~ entity ~~must~~ shall resample the batch and confirm that result in order for the batch to pass testing.

5.5.2 If a sample fails a test or a reanalysis under Rule ~~1.6.1~~ 5.5.1of this Chapter, the batch:

A. May be remediated or sterilized in accordance with this subchapter; or

B. If it is not or cannot be remediated or sterilized under this rule, it ~~must~~ shall be destroyed in a manner specified by the Department.

5.5.3 If a ~~C~~cultivation ~~facility~~ entity ~~or dispensary~~ is permitted under this ~~subchapter~~ Part to sell or transfer a harvest batch that has failed a test, the ~~C~~cultivation ~~facility~~ entity ~~or dispensary~~ ~~must~~ shall notify the processing entity ~~Cultivation facility or dispensary~~ to whom the harvest batch is sold or transferred of the failed test within twenty-four (24) hours of receipt of the COA.

5.5.4 Failed Microbiological Contaminant Testing.

A. If a sample from a batch of usable medical cannabis fails microbiological contaminant testing, the batch may be used to make a cannabinoid concentrate or extract if the processing method effectively sterilizes the batch, such as a method using a hydrocarbon-based solvent, or a CO_2 closed loop system.

B. If a sample from a batch of a cannabinoid concentrate or extract fails microbiological contaminant testing, the batch may be further processed, if the processing method effectively sterilizes the batch, such as a method using a hydrocarbon-based solvent, or a CO_2 closed loop system.

C. A batch that is sterilized in accordance with subsection (A) or (B) of this rule ~~must~~ shall be sampled and tested in accordance with this Chapter and must be tested, if not otherwise required for that product, for microbiological contaminants, solvents and pesticides.

D. A batch that fails microbiological contaminant testing after undergoing a sterilization process in accordance with subsection (A) or (B) of this rule ~~must~~ shall be destroyed in a manner specified by the Department.

5.5.5 Failed Solvent Testing.

A. If a sample from a batch fails solvent testing, the batch may be remediated using procedures that would reduce the concentration of solvents to less than the action level.

B. A batch that is remediated in accordance with subsection (A) of this rule ~~must~~ shall be sampled and tested in accordance with this Chapter and ~~must~~ shall be tested if not otherwise required for that product under this Chapter, for solvents and pesticides.

C. A batch that fails solvent testing that is not remediated or that if remediated fails testing ~~must~~ shall be destroyed in a manner specified by the Department.

5.5.6 Failed Water Activity Testing and Moisture Testing.

A. If a sample from a batch of usable medical cannabis fails for water activity or moisture activity, the batch from which the sample was taken may:

1. Be used to make a cannabinoid concentrate or extract; or

2. Continue to dry or cure.

B. A batch that undergoes additional drying or curing as described in subsection (A) of this rule ~~must~~ shall be sampled and tested in accordance with this ~~Chapter~~ Part.

5.5.7 Failed pesticide testing. If a sample from a batch fails pesticide testing, the batch may not be remediated and ~~must~~ shall be destroyed in a manner permitted under this Part and/or approved by the Department ~~and identified on the Department's website~~.

5.5.8 Failed Potency Testing.

A. Usable medical cannabis that fails potency testing under Rule ~~1.5.7~~ 5.4.7 of this ~~Chapter~~ Part may be repackaged in a manner that enables the item to meet the standard in Rule ~~1.5.7~~ 5.4.7 of this ~~Chapter~~ Part.

B. Usable medical cannabis that is repackaged in accordance with this section

~~must~~ shall be sampled and tested in accordance with these Rules.

5.5.9 Failed Heavy Metals Testing.

If a sample from a batch fails heavy metals testing, the batch may not be remediated and shall be destroyed in a manner permitted under this Part and/or approved by the Department.

5.5.10 Failed Mycotoxins Testing

If a sample from a batch fails mycotoxins testing, the batch may not be remediated and shall be destroyed in a manner permitted under this Part and/or approved by the Department.

5.5.11 ~~5.5.9~~ Failed Remediation.

A. If a sample fails a test after undergoing remediation or sterilization as permitted under this rule, the batch ~~must~~ shall be destroyed in a manner approved by the Department.

B. A cultivation ~~facility~~ or processing ~~facility~~ entity ~~must~~ shall inform a cannabis testing facility prior to samples being taken that the batch has failed a test and is being retested after undergoing remediation or sterilization.

C. A cultivation ~~facility~~ or processing ~~facility~~ entity ~~must~~ shall, as applicable:

1. Have detailed procedures for sterilization processes to remove microbiological contaminants and for reducing the concentration of solvents.

2. Document all sampling, testing, sterilization, remediation and destruction that are a result of failing a test under these rules.

D. A cannabis or cannabis product batch may only be remediated twice. If the batch fails after a second remediation attempt and the second retesting, the entire batch shall be destroyed in a manner approved by the Department.

E. Within one (1) business day of completing the required analyses of a representative sample obtained from a remediated cannabis or cannabis product batch, the cannabis testing ~~facility~~ entity shall upload the COA information into the seed-to-sale system.

5.6 Tentative Identification of Compounds.

5.6.1 Tentatively Identified Compounds (TICs) are compounds detected in a sample using gas chromatography mass spectrometry that are not among the target analytes for the residual solvent analysis.

5.6.2 The Department may initiate an investigation of a cultivation ~~facility~~ or processing ~~facility~~ entity upon receipt of a TICs report from a cannabis testing ~~facility~~ entity and may require a cultivation ~~facility~~ or processing ~~facility~~ entity to submit samples for additional testing, including testing for analytes that are not required by these rules, at the cultivation ~~facility~~ or processing ~~facility~~ entity's expense.

5.7 Certificate of Analysis (COA).

5.7.1 The cannabis testing ~~facility~~ entity shall generate a Certificate of Analysis for each representative sample that the cannabis testing ~~facility~~ entity analyzes.

5.7.2 The cannabis testing ~~facility~~ entity shall ensure that the COA contains the results of all required analyses performed for the representative sample.

5.7.3 The cannabis testing ~~facility~~ entity shall, within three (3) business day of completing all analyses of a sample, upload the COA into the seed-to-sale system. Passed test results ~~must~~ shall be in the Department's seed-to-sale system for a batch to be released for immediate processing, packaging, and labeling for transfer or sale in accordance with these Rules.

5.7.4 The cannabis testing ~~facility~~ entity shall not release to any person any cumulative or individual test results prior to completing all analyses and providing the COA to the Department.

5.7.5 The COA shall contain, at minimum, the following information:

A. The term "Regulatory Compliance Testing" in font no smaller than 14-point, which shall appear in the upper-right corner of each page of the COA. No text or images shall appear above the term "Regulatory Compliance Testing" on any page of the COA.

B. The cannabis testing ~~facility~~ entity's name, premises address, and license number; ~~dispensary's authorized to engage in distribution's name, premises address, and license number~~; cultivator's, or processor's name, premises address, and license number;

C. Batch number of the batch from which the sample was obtained. For cannabis and cannabis products that are already packaged at the time of sampling, the labeled batch number on the packaged cannabis and cannabis products shall match the batch number on the COA;

D. Sample identifying information, including matrix type and unique sample identifiers;

E. Sample history, including the date collected, the date received by the cannabis testing ~~facility~~ entity, and the date(s) of sample analyses and corresponding testing results;

F. A picture of the sample of cannabis and cannabis products. If the sample is pre-packaged, the picture ~~must~~ shall include an unobstructed image of the packaging;

G. For dried flower samples, the total weight of the batch in grams and the total weight of the representative sample in grams;

H. For cannabis product or pre-rolls samples, the total unit count of both the representative sample and the total batch size;

I. Measured of the cannabis and cannabis products;

J. The analytical methods, analytical instrumentation used, and corresponding Limits of Detection ("LOD)" and Limits of Quantitation ("LOQ");

K. An attestation on the COA from the cannabis testing ~~facility~~ entity supervisory or management employee that all LQC samples required by this ~~Chapter~~ Part were performed and met the acceptance criteria; and

L. Analytes detected during the analyses of the sample that are unknown, unidentified, or injurious to human health if consumed, if any.

5.7.6 The cannabis testing ~~facility~~ entity shall report test results for each representative sample on the COA as follows: Indicate an overall "pass" or "fail" for the entire batch;

A. When reporting qualitative results for each analyte, the cannabis testing

~~facility~~ entity shall indicate "pass" or "fail";

B. When reporting quantitative results for each analyte, the cannabis testing ~~facility~~ entity shall use the appropriate units of measurement as required under this ~~chapter~~ Part;

C. When reporting results for each test method, the cannabis testing ~~facility~~ entity shall indicate "pass" or "fail";

D. When reporting results for any analytes that were detected below the analytical method LOQ, indicate "<LOQ", notwithstanding cannabinoid results;

E. When reporting results for any analytes that were not detected or detected below the LOD, indicate "ND"; and

F. ~~M.~~ Indicate "NT" for any test that the cannabis testing ~~facility~~ entity did not perform.

5.7.7 The cannabis testing ~~facility~~ entity supervisory or management employee shall validate the accuracy of the information contained on the COA and sign and date the COA.

5.7.8 The cannabis testing ~~facility~~ entity supervisory or management employee may request to amend a COA to correct minor errors and upload into the seed-to-sale system.

5.8 Post-Testing Sample Requirements.

5.8.1 The cannabis testing ~~facility~~ entity shall retain the reserve sample, consisting of any portion of a sample that was not used in the testing process. The reserve sample shall be kept at minimum, for 45 business days after the analyses, after which time it may be destroyed and denatured to the point the material is rendered unrecognizable and unusable.

5.8.2 The cannabis testing ~~facility~~ entity shall securely store the reserve sample in a manner that prohibits sample degradation, contamination, and tampering.

5.8.3 The cannabis testing ~~facility~~ entity shall provide the reserve sample to the Department upon request.

5.9 Transportation of Samples.

5.9.1 Qualified ~~E~~employees~~/ agents~~ of a licensed cannabis testing ~~facility~~ entity are responsible for the collection and transportation of testing samples. Only qualified employees of a licensed cannabis testing entity shall collect and transport medical cannabis test samples.

Medical cannabis test samples shall not be transported in the same vehicle with any other usable cannabis or cannabis products.

5.9.2 Licensed cannabis testing entities that transport medical cannabis test samples shall also comply with all applicable rules and regulations set forth in subpart 7 of this Part.

5.9.3 Qualified ~~E~~employees/~~ agents~~ representatives of a licensed cannabis testing ~~facility~~ entity ~~must~~ shall utilize an electronic inventory management system to create and maintain transportation manifests documenting all transport of medical ~~marijuana~~ cannabis and medical ~~marijuana~~ cannabis products throughout the State of Mississippi.

5.9.4 When transporting medical cannabis ~~or medical cannabis products~~ test samples, all cannabis testing ~~facilities~~ entities and their employees/~~ agents~~ representatives shall provide copies of the inventory manifests to each originating and receiving medical cannabis establishment at the time the product changes possession.

5.9.5 The copy of the inventory manifest to be left with the originating medical cannabis establishment shall include, at a minimum:

A. The license number, business name, address, and contact information of the originating medical cannabis establishment;

B. A complete inventory of the medical cannabis ~~and medical cannabis products~~ test samples to be transported, including the quantities by weight or unit of each type of medical cannabis and medical cannabis products and the batch number(s);

C. The date of transportation and the approximate time of departure;

D. Printed names, signatures, and identification card numbers of testing entity

personnel accompanying the transport;

E. The license number(s), business name(s), address(es), and contact information for all end point recipients.

5.9.6 The copy of the inventory manifest to be left with the receiving medical cannabis establishment shall include, at a minimum:

A. The license number, business name, address, and contact information for the receiving medical cannabis establishment;

B. The license number, business name, address, and contact information of the originating medical cannabis establishment;

C. A complete inventory of the medical cannabis ~~and medical cannabis products~~ test samples delivered to the receiving medical cannabis establishment, including the quantities by weight or unit of each type of medical cannabis ~~and medical cannabis products~~ test sample and the batch number(s);

D. The date and estimated time of arrival;

E. The printed names, signatures, and identification card numbers of the personnel accompanying the transport; and

F. The printed names, titles, and signatures of any personnel accepting delivery on behalf of the receiving medical cannabis establishment.

5.9.7 Transportation manifests should reflect a complete chain of custody of all medical cannabis ~~and medical cannabis products~~ test samples being transported, including all instances in which the medical cannabis ~~and medical cannabis products~~ test samples are stored.

5.9.8 Originating and receiving licensed entities shall maintain copies of transportation manifests and inventory records logging the quantity of medical cannabis ~~or medical cannabis products~~ test samples received for at least three (3) years from the date of receipt.

5.9.9 A transportation manifest ~~must~~ shall not be altered after departing from the originating medical cannabis establishment's premises, except for the addition of the printed names, titles, and signatures of any personnel accepting delivery on behalf of the receiving cannabis testing ~~facility~~ entity.

5.10 Quality Assurance Measures for Cannabis Testing ~~Facility~~ Entities.

5.10.1 The cannabis testing ~~facility~~ entity shall develop and implement a Quality Assurance (QA) program to assure the reliability and validity of the analytical data produced by the cannabis testing ~~facility~~ entity. The QA program shall, at minimum, include a written QA manual that addresses the following:

A. Quality control procedures;

B. Cannabis testing ~~facility~~ entity organization and employee training and responsibilities, including good laboratory practice (GLP);

C. QA objectives for measurement data;

D. Traceability of data and analytical results;

E. Instrument maintenance, calibration procedures, and frequency;

F. Performance and system audits,

G. Corrective action procedures;

H. Steps to change processes when necessary;

I. Record retention and document control;

J. Test procedure standardization; and

K. Method validation;

L. Chain of custody protocols;

M. Premise and sample security;

N. Sample handling, including sample receipt, identification, rejection, storage and destruction;

O. Contingency plans for data that is not within control limits, or is otherwise unacceptable for analysis; and

P. Disposal of ~~marijuana~~ cannabis and laboratory waste.

5.10.2 The supervisory or management cannabis testing ~~facility~~ entity employee shall annually review, amend if necessary, and approve the QA program and manual both when they are created and when there is a change in methods, testing ~~facility~~ entity equipment, or the supervisory or management testing ~~facility~~ entity employee.

5.10.3 The cannabis testing ~~facilities~~ entity's standard operating procedures for testing methods shall include the following:

A. The name of the testing method;

B. A list of all analytes used in the testing method;

C. The applicable matrix or matrices;

D. Sample receipt and acceptance;

E. Method sensitivity;

F. Potential interferences;

G. Analytical instrument and equipment used;

H. Consumable supplies, reagents, and standards;

I. Sample preservation and hold time;

J. Type, frequency, and acceptable criteria for quality control samples;

K. Type, frequency, and acceptable criteria for calibration standards;

L. Procedures for analyzing batch samples;

M. Data quality assessment and acceptance criteria;

N. Calibration of results; and

O. Reagent solution and reference material preparation.

P. Current step-by-step instructions with sufficient detail to perform the assay to include equipment operation and any abbreviated versions used by a testing analyst.

5.10.4 Each cannabis testing entity shall maintain a consumables log or inventory for all reagents, reference standards and media purchased and received. All reagents and reference standards, including any working standards, must be:

A. Labeled to indicate identity, batch number, date received or prepared, expiration date, and where applicable, concentration or purity, and date opened;

B. Stored under appropriate conditions to minimize degradation or deterioration of the material;

C. Within their expiration or re-qualification dates at the time of use; and

D. Documented on records for each analysis.

5.10.5 Each cannabis testing entity shall calibrate and maintain its equipment as specified below, and the calibration, verification and/or check and maintenance must be documented.

A. Trend testing space temperatures and humidity daily using NIST-certified temperature devices. Record corrective action if temperatures are out-of-range.

B. Check autoclaves performance with bioindicator monthly and use heat-indicating tape with each cycle.

C. Check automatic Pipettes or Micropipettors and Pipette Tips dispensing accuracy and precision quarterly and calibrate annually.

D. Check balances daily with a documented zero before use and service and recalibrate annually.

E. Inspect Biosafety cabinet airflow with each use and have certified annually.

F. Clean blenders as required by manufacturer after each homogenization of submitted cannabis or cannabis products.

G. Verify centrifuge speeds and temperatures daily and have certified annually.

H. Calibrate conductivity monthly.

I. Trend freezer and refrigerator temperatures daily using NIST-certified temperature devices. Record corrective action if temperatures are out-of-range.

J. Inspect glassware for chemistry cannabis testing entity with each use for cleanliness, chips, and etching with each use. Use class A when specified by the approved method and keep certificate of conformance per each piece of class A glassware. If class B or class A without a certificate of conformance, perform verification check upon purchase or prior to first use.

K. Inspect glassware for microbiological cannabis testing entity with each use for cleanliness, chips, and etching.

L. Trend incubator temperatures daily using NIST-certified temperature devices. Record corrective action if temperatures are out-of-range.

M. Trend water bath temperatures daily using NIST-certified temperature devices. Record corrective action if temperatures are out-of-range.

N. Trend Laminar Flow Hoods daily and service annually.

O. Clean Microscope optics and stage daily and check alignment with each use. Service annually.

P. Follow Microwave digestors manufacturer's instructions.

Q. Check Muffle furnaces temperature accuracy at least annually.

R. Standardize pH meters with at least 2 buffer solutions daily before use.

S. Check Spectrophotometers wavelength.

T. Check Timers and stop watches at least annually.

U. Certify reference weights annually.

V. Follow Analytical Instrumentation manufacturer's instructions for cleaning and maintenance and document all cleaning, calibrations, maintenance, and repairs.

W. Maintain all service records for the life of equipment.

5.10.6 The cannabis testing ~~facilities~~ entities shall develop, implement, and validate test methods for the analyses of samples as follows:

A. To the extent practicable, methods shall compart with the following guidelines:

B. The Bacteriological Analytical Manual (BAM), 2019, which is incorporated by reference, includes no future editions or amendments, and is available at https://www.fda.gov/food/laboratory-methods-food/bacteriological-analytical-manualbam;

C. AOAC Official Methods of Analysis, 21st Edition, 2019, which is incorporated by reference, includes no future editions or amendments, and is available at https://www.aoac.org/official-methods-of-analysis-21st-edition-2019; and

D. To the extent practicable, methods shall be validated in accordance with the following guidelines:

1. AOAC - Appendix J: Guidelines for Validation of Microbiological Methods for Food and Environmental Surfaces, 2012, which is incorporated by reference, includes no future editions or amendments, and is available at http://www.eoma.aoac.org/app_j.pdf;

2. AOAC - Appendix K: Guidelines for Dietary Supplements and Botanicals, 2013, which is incorporated by reference, includes no future editions or amendments, and is available at

http://www.eoma.aoac.org/app_k.pdf;

3. ICH – Validation of Analytical Procedures: Text and Methodology Q2(R1) 2005, which is incorporated by reference, includes no future editions or amendments, and is available at https://database.ich.org/sites/default/files/Q2_R1__Guideline.pdf or Unofficial version of the Rules in 9 A.A.C. 17, effective September 8, 2022 Page 115 https://www.fda.gov/regulatory-information/search-fda-guidance-documents/q2-r1- validation-analytical-procedures-text-and-methodology.

E. Method validation should, at a minimum, verify accuracy, precision, analytical sensitivity, analytical specificity, limit of detection, limit of quantification, reportable range and the identification of interfering substances.

F. Methods adopted from a matrix specific standard method, inclusivity and exclusivity do not require a comprehensive reassessment, provided that there were no modifications to the methods, including, but not limited to, all of the following:

1. Referenced media.
2. Primers.
3. Probes.
4. Antibodies.
5. Critical chemistries that were not modified.
6. Microbial methods ~~must~~ shall include environmental monitoring and quality control of all buffers, media, primers, and incubators.

G. The licensed laboratory shall generate a validation report for each test method. Each validation report shall include the following information:

1. Instrument calibration data, if any;
2. Raw data, including instrument raw data scanned as a PDF, for each test method, if any;
3. Cannabis reference materials or certified reference material results;
4. Data and calculations pertaining to LOD and LOQ determinations, if any;
5. Quality Control Sample report;
6. Worksheets, forms, pictures, or copies of laboratory notebook pages

H. The laboratory director shall review, approve, sign, and date the validation report for each test method.

I. Validations ~~must~~ shall be submitted to the agency for approval with an acceptable and graded external proficiency test by a third party, where all required analytes are shown to have passed.

J. Upon new test methods or altered test methods being used in the laboratory, the new validation report shall be submitted to the Department within 5 business days.

5.11 Cannabis Testing ~~Facility~~ Entity Quality Control Samples.

5.11.1 The cannabis testing ~~facility~~ entity shall use Quality Control samples (QC) and adhere to good, approved laboratory practice ("GLP") in the performance of each analysis according to the specifications of this ~~Chapter~~ Part.

5.11.2 The cannabis testing ~~facility~~ entity shall analyze QC samples in the same manner as the cannabis testing ~~facility~~ entity analyzes cannabis and cannabis products samples.

5.11.3 The cannabis testing ~~facility~~ entity shall use at least one negative control, one positive control, and one cannabis testing ~~facility~~ entity replicate sample in each analytical batch for each target organism during microbial testing. If one of the controls produces unexpected results, the samples shall be re- prepped and reanalyzed with a new set of controls.

5.11.4 If the result of the microbial analyses is outside the specified acceptance criteria in ~~the following~~ Appendix A, Table 2, the cannabis testing ~~facility~~ entity shall determine the cause and take steps to remedy the problem until the result is within the specified acceptance criteria.

Microbiology

Culture Methods – Qualitative and Quantitative

The quality control (QC) samples that are required for culturing of cannabis and cannabis products using qualitative and quantitative methods are included in Appendix A, Table 2.

Molecular Assays/Methods

The QC samples that are required for molecular (i.e., polymerase chain reaction (PCR), gel electrophoresis and probe-based qPCR with or without melting curve analyses) analysis of cannabis and cannabis products are listed in Appendix A, Table 3.

PCR positive DNA controls are used to verify that the PCR master mix and reagents were prepared correctly to produce amplification of the target nucleic acid. This type of positive control is analyzed with each PCR run.

A PCR run is defined as a group of samples that are analyzed at the same time under the same amplification conditions, using the same PCR master mix, and in the same thermocycler. A PCR run may contain more than one extracted sample batches.

A PCR run with multiple assays must have a DNA positive control for each assay.

Inhibition controls are used to verify that interfering constituents from a cannabis form, which may be carried over during isolation of nucleic acids or organisms during sample processing, do not inhibit the PCR. Because cannabis forms are constantly changing, inhibition positive controls must be performed in every extracted sample.

PCR DNA negative controls are used to verify that the PCR master mix and reagents were prepared correctly to produce amplification of the target nucleic acid. This type of negative control is analyzed with each PCR run. A PCR run is defined as a group of samples that are analyzed at the same time under the same amplification conditions, using the same PCR master mix, and in the same thermocycler. A PCR run may contain more than one extracted sample batches. A PCR run with multiple assays must have a DNA negative control for each assay to verify that the amplification conditions are working properly.

No template controls are used to verify no contaminating nucleic acid has been introduced into the master mix. These controls are prepared when template is added to the master mix. They are prepared as separate PCR reactions to which aliquots of molecular-grade water or buffer are added to the master mix in place of target nucleic acid or sample. A negative result with this control indicates that the master mix and final processing reagents are not contaminated. This type of negative control is analyzed with each PCR run. A PCR run is defined as a group of samples that are analyzed at the same time under the same amplification conditions, using the same PCR master mix, and in the same thermocycler. A PCR run may contain more than one extracted sample batch. A PCR run with multiple assays must have no ~~not~~ template controls for each assay to verify ~~that~~ ~~the~~ sterility of the assays.

One duplicate sample is required per run. A duplicate sample is subjected to all of the same steps as the original sample. For qualitative analyses, if the duplicate sample does not equal the sample result, the sample and its duplicate must be reanalyzed. Consideration should also be given to possibility of re-preparing and reanalyzing all associated samples. For quantitative analyses, if the RPD of the sample and duplicate is greater than 20% ~~100~~, the parent sample and duplicate sample must be reanalyzed. Consideration should also be given to possibility of re-preparing and reanalyzing all associated samples. When data are accepted, the result for the sample portion designated as the "original sample" is reported.

5.11.5 Chemistry – Analytical, Organic and Inorganic (Metals).

Quality control must be performed for each analytical, organic and metal chemistry method.

Each cannabis testing entity shall maintain sufficient raw data records to ensure the QC was performed at the frequency specified.

'Bracketing' of QC samples, rotating from across the calibration curve range, is required.

QC samples must follow the first twenty (20) samples after an initial calibration, every twenty (20) samples thereafter, and at the end of testing samples. This would also apply to a continuing calibration.

Initial Calibration

A. Samples results must be associated with an acceptable initial calibration. If the initial calibration is not acceptable, corrective actions must be performed and all associated samples re-analyzed.

B. No sample results are to be reported nor data qualified for a failed initial calibration.

C. Samples must be analyzed under an initial calibration that was performed no more than one month prior.

D. The following items are required elements of an initial calibration:

   1. The details of the initial calibration procedures including calculations, integrations, acceptance criteria, and associated statistics must be included or referenced in the method SOP. When initial calibration procedures are referenced in the method SOP, then the referenced material must be retained by the cannabis testing entity and be available for review;

2. Sufficient raw data records must be retained to permit reconstruction of the initial calibration (e.g., calibration date, method, instrument, analysis date, each analyte name, and analyst or technician's initials or signature; concentration and response, calibration curve or response factor; or unique equation or coefficient used to reduce instrument responses to concentration);

3. The cannabis testing entity must use the most recent initial calibration analyzed prior to the analytical batch;

4. Standards used for calibration must be traceable to an international or national standard, when commercially available; and

5. The cannabis testing entity must have a written procedure addressing removal and replacement of calibration standards.

E. The lowest calibration standard must be at or below the lowest concentration for which quantitative data are to be reported without qualification.

F. The highest calibration standard shall be at or above the highest concentration for quantitative data are to be reported without qualification.

G. Sample results must be quantitated from the initial calibration and may not be quantitated from any continuing calibration verification.

H. Criteria for the acceptance of an initial calibration must be established including any calculations (e.g., relative error, relative standard deviation).

1. $R2 \geq 0.990$, and

2. Curve recovery of ±20% (and ±30% for the lowest point) for all points must be maintained.

I. The cannabis testing entity must use and document a measure of relative error in the calibration as specified in the method SOP.

Initial Calibration Verification

A. All initial calibrations must be verified with a standard obtained from a second manufacturer or a separate lot prepared independently by the same manufacturer.

B. Initial calibration verification is performed by analyzing a test solution of known analyte concentration(s) after initial calibration and prior to sample analysis.

C. The following acceptance criteria must be used:

1. For potency testing, 80 to 120% recovery of true value;

2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value;
3. For heavy metal testing, 80-120% recovery of true value;
4. For terpenoid testing, 80-120% recovery of true value.

~~In general, the check must be ± 20% (± 30% for the lowest point) of the known value. Some individual methods may require tighter tolerances (±10% of the known value).~~

Continuing Calibration Verification

A. The validity of the initial calibration must be verified prior to sample analyses by a continuing calibration verification with each analytical batch.

B. A CCV is performed by analyzing a test solution of known analyte concentration(s) prior to sample testing on each testing day and continued periodically during the analytical batch run, no less frequently than once after each set of 20 samples, and at the end of each run.

C. The CCV must be a standard that is from the same vendor/lot that is used for the calibration curve.

D. The following acceptance criteria must be used:

1. For potency testing, 80 to 120% recovery of true value;
2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value;
3. For heavy metal testing, 80-120% recovery of true value;
4. For terpenoid testing, 80-120% recovery of true value.

~~In general, the check must be ± 20% (and ± 30% for the lowest point) of the known value.~~

E. Calibration must be verified for each compound, element, or other discrete chemical analyte, except for multi-component analytes where a representative chemical, related substance or mixture can be used.

F. Instrument continuing calibration verification must be performed at the beginning and end of each analytical batch, and at the frequency defined in the method.

G. Sufficient raw data records must be retained to permit reconstruction of the continuing instrument calibration verification (e.g., method, instrument, analysis date, each analyte name, concentration and response, calibration

curve or response factor, or unique equations or coefficients used to convert instrument responses into concentrations).

H. Continuing calibration verification records must explicitly connect the continuing calibration verification data to the initial calibration.

I. If the continuing instrument calibration verification results obtained are outside the established acceptance criteria, the following steps must be taken:

1. If a cause for the calibration verification failure is identified that impacts only the calibration verification sample (e.g., a missed autosampler injection), then analysis may proceed if a second calibration verification sample is analyzed immediately and the result is within acceptance criteria. Samples analyzed previously must be considered valid if bracketed by a passing calibration verification sample. The cause for the failure of the first calibration verification result must be documented; and

2. If the cause for the calibration verification failure is not identifiable or has impacted other samples, then corrective action must be performed and documented. Prior to analyzing samples, the cannabis testing entity must demonstrate acceptable performance after corrective action with calibration verification or a new initial calibration must be performed. Samples analyzed prior to the calibration verification failure must be reanalyzed.

J. Data associated with an unacceptable calibration verification must not be reported with a qualifier. Qualifying the data is not an acceptable approach.

~~*Low Level Continuing Calibration Verification*~~

~~A. A LLCCV will be run at the end of each analytical batch.~~

~~B. The measured value must be within ± 30 % of the prepared value.~~

~~C. The cannabis testing facility entity shall prepare and analyze at least one of each of the following QC samples for each analytical batch:~~

Required Quality Control samples:

A. ~~1.~~ Negative Control, Method Blank or Laboratory Reagent Blank; and

B. ~~2.~~ Positive Control, Laboratory Control Sample (LCS);

~~3. Matrix spike sample;~~

~~4. Duplicate matrix spike sample; and~~

C. ~~5.~~ Duplicate sample.

D. The required QC is summarized in Appendix A ~~2~~, Table 4.

Negative Control – Method Blank (MB)

A. A method blank must be analyzed at a minimum of one (1) per preparation batch.

B. The MB must be processed along with and under the same conditions as the associated samples to include all steps of the preparation and analytical procedure.

C. The MB is used to assess the samples in the preparation batch for possible contamination during the preparation and processing steps.

D. The measured concentration of each analyte in the MB or LRB must be < LOQ or MRL.

E. Procedures must be in place to determine if a MB or LRB is contaminated. While the goal is to have no detectable contaminants, each method blank must be critically evaluated as to the nature of the interference and the effect on the analysis of each sample within the batch.

F. The source of contamination must be investigated and measures taken to minimize or eliminate the problem and affected samples reprocessed if the concentration of a targeted analyte in the blank is at or above the LOQ, if the blank contamination otherwise affects the sample results as per the method requirements or the individual project data quality objectives, and a blank is determined to be contaminated. Samples associated with a contaminated blank must be evaluated as to the best corrective action for the samples (e.g., reprocessing or data qualifying codes). In all cases, the corrective action must be documented.

G. Any affected samples associated with a contaminated MB or LRB must be reprocessed for analysis.

Positive Control – Laboratory Control Sample (LCS)

A. The LCS is used to evaluate the performance of the total analytical system, including all preparation and analysis steps.

B. The LCS must be carried through the entire sample preparation process and analyzed.

C. The LCS must be spiked with all target analytes at a mid-level concentration in the curve.

D. The LCS must be analyzed at a minimum of one (1) per preparation batch.

E. The LCS is a quality system matrix, known to be free of analytes of interest, spiked with known concentrations of analytes that are within the calibration range.

1. A laboratory control sample (LCS) may be used in place of a continuing calibration verification (CCV) (but not as a replacement for a failing CCV) for methods where the calibration goes through the same process as the LCS. Note that the more stringent acceptance criteria must be met.

~~2.The matrix spike may be used in place of this control as long as the acceptance criteria are as stringent as for the LCS.~~

2. ~~3.~~ The lab may use commercially available or pre-prepared standards (separate from calibrators) for QC.

F. All analyte concentrations must be within the calibration range of the methods.

G. The following acceptance criteria must be used:

1. For potency testing, 80 to 120% recovery of true value;
2. For testing for pesticides, mycotoxins or residual solvents, 70-130% recovery of true value;
3. For heavy metal testing, 80-120% recovery of true value;
4. For terpenoid testing, 80-120% recovery of true value.

~~The individual LCS must be compared to the acceptance criteria stated in the standard operating procedure. The results of the individual batch LCS are calculated in percent recovery or other appropriate statistical technique that allows comparison to established acceptance criteria.~~ The cannabis testing entity must document the calculation.

H. When the acceptance criteria for the positive control are exceeded, those sample results must be investigated, and a corrective action implemented.

~~*Matrix Spikes and Matrix Spike Duplicates*~~

~~A. Analyze an actual sample with a known amount of standard added (matrix spike. MS). A second portion of the actual sample used to prepare the MS that is spiked and processed in the same manner as the MS (matrix spike duplicate, MSD).~~

~~1. For potency testing, a "representative matrix" may be used to prepare the MS/MSD.~~

~~2. MS/ MSD shall be spiked at a midlevel concentration with the target~~

~~analytes.~~

~~B. Calculate the relative percent difference (RPD) between first sample and replicate. The calculations must be documented, and the target value must be close to the first value and have a RPD of less than 20%.~~

~~C. Matrix-specific QC samples indicate the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. The information from these controls is sample/matrix specific and would not normally be used to determine the validity of the entire batch.~~

~~D. For methods that include one (1) to twenty (20) targets, spike all components.~~

~~E. For methods with more than twenty (20) targets, randomly spike at least sixteen (16) components.~~

Sample Duplicate

A. Analyze the same sample twice, using two separate preparations. The sample should be chosen at random and run together on the same analytical run.

B. Calculate the relative percent difference (RPD) between first sample and replicate. Calculations must be documented, and the target value must be close to the first value and have a RPD of less than twenty percent (20%).

Variability may be introduced during sample preparation. To account for this, if more than one staff member is prepping samples, each staff must also prepare and analyze a sample matrix duplicate for each set of prepared samples.

5.11.6 Physical Chemistry.

Water Activity:

A. ~~Sample Duplicates. Analyze the same sample twice, using two separate preparations. The sample should be chosen at random and run together on the same analytical run. Calculate the relative percent difference (RPD) between first sample and replicate. Calculations must be documented, and the target value must be close to the first value and have a RPD of less than twenty percent (20%). Variability may be introduced during sample preparation. To account for this, if more than one staff member is prepping samples, each staff must also prepare and analyze a sample matrix duplicate for each set of prepared samples.~~ Calibration and verification. ~~If the aw instrument is being used in a single location at the same temperature (61°C) and humidity (65% relative humidity), calibrate if it has been more than seven consecutive days since the last calibration. If the aw instrument is physically moved from one~~

~~location to another, calibrate immediately following the move and prior to analyzing samples. If the aw instrument has been cleaned, then calibrate immediately following the cleaning.~~ Follow ~~any other calibration procedures listed in a consensus method and~~ manufacturer's instructional manual for calibration and verification procedures.

B. ~~C.~~ Monitor temperature and humidity daily or on day of use, and keep a record of the check.

Moisture Content:

. Calibration and verification. Follow manufacturer's instructional manual for calibration and verification procedures.

A. Monitor temperature and humidity daily or on day of use, and keep a record of the check.

5.12 Required Formulas.

~~5.12.1 The cannabis testing facility entity shall prepare and analyze at least one of each of the following QC samples for each analytical batch:~~

~~A. Method Blank; and~~

~~B. Laboratory control sample (LCS); and~~

~~C. Matrix spike sample; and~~

~~D. Duplicate matrix spike sample.~~

~~5.12.2 The cannabis testing facility entity shall analyze, at minimum, a continuing calibration verification ("CCV") sample prior to sample testing on each testing day and continued periodically during the analytical batch run no less frequently than once after each set of twenty (20) samples and at the end of each run. The CCV must shall be a standard that is not from the same vendor/lot that is used for the calibration curve.~~

~~5.12.3 If the result of the chemical analyses is outside the specified minimum acceptance criteria in the following Appendix A, Table 3, the cannabis testing facility entity shall determine the cause and take steps to remedy the problem until the result is within the specified acceptance criteria.~~

5.12.~~4~~1 A cannabis testing ~~facility~~ entity shall use the following calculation for determining Relative Percentage Difference (RPD):

RPD = (|Num1-Num2|/((Num1+Num2)/2)) x 100

Where:

Num1= Original Number

Num2= Second Number

5.12.~~5~~2 A cannabis testing ~~facility~~ entity shall use the following calculation for determining Relative Standard Deviation (RSD):

$$SD = \sqrt{\frac{(sample1 - mean)^2 + (sample2 - mean)^2, \dots, (sample10 - mean)^2}{total\ number\ of\ samples - 1}}$$

$$RSD = \frac{SD}{mean} x\ 100$$

5.12.~~6~~3 For calculating both RPD and RSD if any results are less than the LOQ, the absolute value of the LOQ is used in the equation.

5.12.~~7~~4 If any analyte is detected above any action level, as described in this ~~chapter~~ Part, the sample shall be re-prepped and reanalyzed in replicate within another analytical batch.

5.12.~~8~~5 For quantitative analyses, the re-prepped sample and its associated replicate shall meet the acceptance criteria of RPD ≤~~3~~20%.

5.12.~~9~~6 For qualitative analyses, the re-prepped sample and its associated replicate results ~~must~~ shall concur.

5.12.~~10~~7 If any quality control sample produces a result outside of the acceptance criteria, the cannabis testing ~~facility~~ entity cannot report the result and the entire batch cannot be released for retail sale. The cannabis testing ~~facility~~ entity shall

determine the cause and take steps to remedy the problem until the result is within the specified acceptance criteria.

5.12.~~11~~8 If the cannabis testing ~~facility~~ entity determines that the result is a false-positive or a false- negative, the Department may ask for the cannabis testing ~~facility~~ entity to re- sample or re-test.

5.12.~~12~~9 The cannabis testing ~~facility~~ entity shall compile and generate one LQC sample report for each analytical batch that includes LQC acceptance criteria, measurements, analysis date, and matrix.

5.13 Limits of Detection (LOD) and Limits of Quantitation (LOQ) for Quantitative Analyses.

5.13.1 The cannabis testing ~~facility~~ entity shall calculate the LOD for chemical method analyses according to any of the following methods:

A. Signal-to-noise ratio of between 3:1 and 2:1;

B. Standard deviation of the response and the slope of calibration curve using a minimum of seven (7) spiked blank samples calculated as follows:

LOD = (3.3 x standard deviation of the response)/slope of the calibration curve; or

C. A method published by the United States Food and Drug Administration (USFDA) or the United States Environmental Protection Agency (USEPA).

5.13.2 The cannabis testing ~~facility~~ entity shall calculate the LOQ for chemical method analyses according to any of the following methods:

A. Signal-to-noise ratio of 10:1, at minimum;

B. Standard deviation of the response and the slope using a minimum of seven (7) spiked Blank samples calculated as follows:

LOQ = (10 × standard deviation of the response)/slope of the calibration curve; or

C. A method published by the USFDA or the USEPA.

5.14 Cannabis Testing ~~Facility~~ Entity Data Package.

5.14.1 The cannabis testing ~~facility~~ entity shall compile and generate one data package for each representative sample that the cannabis testing facility analyzes.

A. All data generated during the testing of a test sample, except data generated by automated data collection systems, is recorded directly, promptly, and legibly in ink. All data shall be annotated with the date of entry and signed or initialed by the person recording the data. Any change in entries shall be made so as not to obscure the original entry, shall indicate the reason for such change, and shall be dated and signed or initialed at the time of the change.

B. In automated data collection systems, the individual responsible for direct data input shall be identified at the time of data input. Any change in an entry shall be made so as not to obscure the original entry, shall indicate the reason for such change, and shall be dated and signed or initialed at the time of the change. A corrective action report shall accompany such change and shall be made available to the department, a non-profit producer, and a manufacturer upon their request for up to two years after the analysis is completed.

C. For each final result reported, an approved ~~laboratory~~ testing entity shall verify that:

1. Any calculations or other data processing steps were performed correctly;
2. The data meet any data quality requirements such as for accuracy, precision, linearity, etc.;
3. Any reference standards used were of the appropriate purity and within their expiration or requalification dates;
4. Any volumetric solutions were properly standardized before use; and,
5. Any test or measuring equipment used has been properly tested, verified, and calibrated, and is within its verification or calibration period.

5.14.2 The cannabis testing ~~facility~~ entity shall provide requested data packages to the Department immediately upon request.

5.15 Required Proficiency Testing.

5.15.1 A cannabis testing ~~facility~~ entity shall participate in a proficiency testing program for all methods available from an organization that operates in conformance with the requirements of ISO/IEC 17043 at least once a year ~~every six (6) months~~.

5.15.2 The cannabis testing ~~facility~~ entity shall annually, successfully participate in a proficiency testing program for each test method performed for the below:

A. Cannabinoids;

B. Heavy metals;

C. Microbial impurities ;

D. Mycotoxins;

E. Residual pesticides;

F. Residual solvents and processing chemicals;

G. Foreign Material; and

H. Terpenoids, if performed.

5.15.3 The cannabis testing ~~facility~~ entity shall report all analytes available by the proficiency testing program provider and for which the licensee is required to test ~~as required~~ under the rules in this ~~chapter~~ Part.

5.15.4 The cannabis testing ~~facility~~ entity shall participate in the proficiency testing program by following the cannabis testing ~~facility~~ entity's existing SOPs for testing cannabis and cannabis products.

5.15.5 The cannabis testing ~~facility~~ entity shall rotate the proficiency testing program among the cannabis testing ~~facility~~ entity employees who perform the test methods.

5.15.6 Cannabis testing ~~facility~~ entity employees who participate in a proficiency testing program shall sign the corresponding analytical reports or attestation statements to certify that the proficiency testing program was conducted in the same manner as the cannabis testing ~~facility~~ entity tests of cannabis and cannabis products.

5.15.7 A supervisory or management cannabis testing ~~facility~~ entity employee shall review and verify the accuracy of results reported for all proficiency testing program samples analyzed.

5.15.8 The cannabis testing ~~facility~~ entity shall request the proficiency testing program provider to send results concurrently to the Department, if available, or the cannabis testing ~~facility~~ entity shall provide the proficiency testing program results to the Department within three (3) business days after the cannabis testing ~~facility~~ entity receives notification of their test results from the proficiency testing program provider.

5.15.9 A cannabis testing entity shall analyze Matrix Spike Sample(s) and Matrix Spike Duplicate Sample(s) at least once every six (6) months as directed by The Department.

5.16 Proficiency Testing Performance.

5.16.1 The cannabis testing ~~facility~~ entity shall be deemed to have successfully participated in a proficiency testing program for an analyte tested in a specific method if the test results demonstrate a "satisfactory" or otherwise proficient performance determination by the proficiency testing program provider.

5.16.2 The cannabis testing ~~facility~~ entity may not report test results for analytes that are deemed by the proficiency testing program provider as "unacceptable," "questionable," "unsatisfactory", or otherwise deficient. Testing with the deficient method ~~must~~ shall stop immediately upon receiving deficient proficiency testing results.

5.16.3 The cannabis testing ~~facility~~ entity may resume reporting test results for analytes that were deemed "unacceptable," "questionable," "unsatisfactory", or otherwise deficient, only if both of the following conditions are met:

A. The cannabis testing ~~facility~~ entity satisfactorily remedies the cause of the failure for each analyte; and

B. The cannabis testing ~~facility~~ entity submits to the Department a written corrective action report demonstrating how the cannabis testing ~~facility~~ entity has fixed the cause of the failure.

5.16.4 The cannabis testing entity shall immediately perform a follow-up proficiency test on any method associated with a deficient report until the testing entity obtains an acceptable result for all analytes.

5.16.5 The Department shall take immediate disciplinary action against any cannabis testing entity that is unable to successfully participate in a proficiency program for any available method/analyte every six (6) months.

5.17 Cannabis Testing ~~Facility~~ Entity Audits.

5.17.1 The cannabis testing ~~facility~~ entity shall conduct an internal audit at least once per year or in accordance with the ISO/IEC 17025 accrediting body's requirement, whichever is more frequent.

5.17.2 The internal audit shall include all the components required by the ISO/IEC 17025 internal-audit standards.

5.17.3 Within three (3) business days of completing the internal audit, the cannabis testing ~~facility~~ entity shall submit the results of the internal audit to the Department.

5.17.4 A cannabis testing ~~facility~~ entity shall contract with an independent, third-party auditor certified to conduct on-site audits at least annually or in accordance with ISO/IEC 17025 accrediting body's requirements standards.

5.17.5 Within three (3) business days of receiving the accrediting body on-site audit findings, the cannabis testing facility shall submit the report to the Department.

5.17.6 The Department reserves the rights to perform additional audits as needed and without advance notice.

5.18 Recalls.

5.18.1 The Department may issue public notice of a medical cannabis recall if, in its judgment, any particular cannabis and/or cannabis product presents a threat to the health and safety of qualifying patients. All medical cannabis establishments are responsible for complying with recall notices. Recalled items ~~must~~ shall be immediately pulled from production or inventory and held

until such time as the Department determines the item is safe, may be remediated, or ~~must~~ shall be destroyed.

The Department may issue public notice of a medical cannabis recall if, in its judgment, any particular cannabis and/or cannabis product presents a threat to the health and safety of qualifying patients. All medical cannabis establishments are responsible for complying with recall notices. Recalled items ~~must~~ shall be immediately pulled from production or inventory and held until such time as the Department determines the item is safe, may be remediated, or ~~must~~ shall be destroyed.

Source: Miss. Code Ann. §§ 41-137-1 – 41-137-67.

APPENDIX A

Table 1

Key to Table 1:

- **CAS Number = Chemical Abstract Services Registry number**
- **CFU = Colony-forming unit, a method to estimate the number of viable bacteria or fungal cells in a sample.**

A. Microbial Contaminants		
Analyte	**Maximum Allowable Contaminants**	**Required Action**
~~*Total Escherichia coli*~~	~~100 CFU/g~~	~~Remediate and retest, or Destroy~~
Total coliform	100 CFU/g	Use to make a concentrate or extract if the processing method effectively sterilizes the batch and retested or destroy
Shiga toxin- producing Escherichia coli	Detectable in 1 gram	~~Remediate and retest, or~~ Destroy
Salmonella spp.	Detectable in 1 gram	Destroy
Aspergillus flavus, Aspergillus fumigatus, Aspergillus niger, and *Aspergillus terreus*	Inhalable: Detectable in 1 gram	~~Remediate and retest, Remediate and use for preparing an extract or a concentrate, or destroy~~ Use to make a concentrate or extract if the processing method effectively sterilizes the batch and retest or destroy
Mycotoxins: Aflatoxin B1, B2, G1, and G2 Ochratoxin A	~~Marijuana~~ Cannabis product, except a ~~marijuana~~ cannabis product intended for topical application, prepared from an extract or concentrate of medical ~~marijuana:~~cannabis 20 µg/kg (pbb) of total aflatoxins 20 µg/kg (pbb) of ochratoxin	Destroy
Total Mold and Yeast	10,000 CFU/g	Use to make a concentrate or extract if the processing method effectively sterilizes the batch and retest or destroy

B. Heavy Metals				
Analyte	Maximum Allowable Concentration (ppm)			Required Action
	Inhaled Flower	Inhaled Concentrates	Other	
Arsenic	0.4	0.2	1.5	~~Remediate and retest, or~~ Destroy *Copper is required for vaping products only
Cadmium	0.4	0.2	0.5	
Lead	1.0	0.5	0.5	
Mercury	0.2	0.1	3.0	
Total Chromium	1.2	0.6	2.0	
Nickel	1.0	0.5	N/A	
Copper	N/A	3.0*	N/A	

C. Residual Solvents			
Analyte	CAS Number	Maximum Allowable Concentration	Required Action
Acetone	67-64-1	1,000 ppm	Remediate and retest, or Destroy
Acetonitrile	75-05-8	410 ppm	
Benzene	71-43-2	2 ppm	
Butanes (measured as the cumulative residue of n-butane and isobutane) respectively	106-97-8 and 75-28-5,	5,000 ppm	
Chloroform	67-66-3	60 ppm	
Dichloromethane	75-09-2	600 ppm	
Ethanol	64-17-5	5,000 ppm	
Ethyl Acetate	141-78-6	5,000 ppm	
Ethyl Ether	60-29-7	5,000 ppm	
Heptane	142-82-5	5,000 ppm	
Hexanes (measured as the cumulative residue of n-hexane, 2-methylpentane, 3-methylpentane, 2,2-dimethylbutane, and 2,3-dimethylbutane)	110-54-3, 107-83-5, and 79-29-8	290 ppm	
Isopropyl Acetate	108-21-4	5,000 ppm	
Methanol	67-56-1	3,000 ppm	

Pentanes (measured as the cumulative residue of n-pentane, iso- pentane, and neo- pentane)	109-66-0, 78-78-4, and 463-82-1	5,000 ppm	
2-Propanol (IPA)	67-63-0	5,000 ppm	
Propane	74-98-6	5,000 ppm	
Toluene	108-88-3	890 ppm	
Xylenes (measured as the cumulative residue of 1,2-dimethylbenzene, 1,3-dimethylbenzene, and 1,4-dimethylbenzene, And the non-xylene, ethyl benzene)	1330-20-7 (95-47-6,108-38-3, and 106-42-3, and 100-41-4)	2,170 ppm	
~~Dimethylbenzene, and 1,4-dimethylbenzene, and the non-xylene, ethyl benzene)~~			

D. Pesticides, Fungicides, Growth Regulators			
Analyte	**CAS Number**	**Maximum Allowable Concentration**	**Required Action**
Abamectin	71751-41-2	0.5 ppm	Destroy
Acephate	30560-19-1	0.4 ppm	
Acequinocyl	57960-19-7	2.0 ppm	
Acetamiprid	135410-20-7	0.2 ppm	
Aldicarb	116-06-3	0.4 ppm	
Azoxystrobin	131860-33-8	0.2 ppm	
Bifenazate	149877-41-8	0.2 ppm	
Bifenthrin	82657-04-3	0.2 ppm	
Boscalid	188425-85-6	0.4 ppm	
Carbaryl	63-25-2	0.2 ppm	
Carbofuran	1563-66-2	0.2 ppm	
Chlorantraniliprole	500008-45-7	0.2 ppm	
Chlorfenapyr	122453-73-0	1.0 ppm	
Chlormequat chloride	7003-89-6	0.2 ppm	
Chlorpyrifos	2921-88-2	0.2 ppm	
Clofentezine	74115-24-5	0.2 ppm	
Cyfluthrin	68359-37-5	1.0 ppm	
Cypermethrin	52315-07-8	1.0 ppm	
Daminozide	1596-84-5	1.0 ppm	
DDVP (Dichlorvos)	62-73-7	0.1 ppm	

Diazinon	333-41-5	0.2 ppm	
Dimethoate	60-51-5	0.2 ppm	
Ethoprophos	13194-48-4	0.2 ppm	
Etofenprox	80844-07-1	0.4 ppm	
Etoxazole	153233-91-1	0.2 ppm	
Fenoxycarb	72490-01-8	0.2 ppm	
Fenpyroximate	134098-61-6	0.4 ppm	
Fipronil	120068-37-3	0.4 ppm	
Flonicamid	158062-67-0	1.0 ppm	
Fludioxonil	131341-86-1	0.4 ppm	
Hexythiazox	78587-05-0	1.0 ppm	
Imazalil	35554-44-0	0.2 ppm	
Imidacloprid	138261-41-3	0.4 ppm	
Kresoxim-methyl	143390-89-0	0.4 ppm	
Malathion	121-75-5	0.2 ppm	
Metalaxyl	57837-19-1	0.2 ppm	
Methiocarb	2032-65-7	0.2 ppm	
Methomyl	16752-77-5	0.4 ppm	
Methyl parathion	298 -00 - 0	0.2 ppm	
Myclobutanil	88671-89-0	0.2 ppm	
Naled	300-76-5	0.5 ppm	
Oxamyl	23135-22-0	1.0 ppm	
Paclobutrazol	76738-62-0	0.4 ppm	
Permethrins (measured as the cumulative residue of cis- and trans-isomers)	52645-53-1(54774-45-7 and 51877-74-8)	0.2 ppm	
Phosmet	732-11-6	0.2 ppm	
Piperonyl_butoxide	51-03-6	2.0 ppm	
Prallethrin	23031-36-9	0.2 ppm	
Propiconazole	60207-90-1	0.4 ppm	
Propoxur	114-26-1	0.2 ppm	
Pyrethrins (measured as the cumulative residue of pyrethrin 1, cinerin 1 and jasmolin 1)	8003-34-7(121-21-1, 25402-06-6, and 4466-14-2)	1.0 ppm	
Pyridaben	96489-71-3	0.2 ppm	
Spinosad	168316-95-8	0.2 ppm	
Spiromesifen	283594-90-1	0.2 ppm	

Destroy

Spirotetramat	203313-25-1	0.2 ppm	
Spiroxamine	118134-30-8	0.4 ppm	
Tebuconazole	107534-96-3	0.4 ppm	
Thiacloprid	111988-49-9	0.2 ppm	
Thiamethoxam	153719-23-4	0.2 ppm	
Trifloxystrobin	141517-21-7	0.2 ppm	

E. Potency

Analyte	Labeling	Required Action
Tetrahydro-cannabinolic acid (THC-A)	Label claim is not within ±120 % of tested value	Revise label as necessary
Delta-9- tetrahydrocannabinol (Δ9-THC)		
Cannabidiolic acid (CBD-A)		
Cannabidiol (CBD)		
Terpenoids (primary and secondary)	Label claim is not within ±10 % of tested value	Revise label as necessary

F. Moisture Content and Water Activity Testing

Measurement	Product Type	Maximum Allowable Measurement	Required Action
Water activity	Bud/Flower, Shake/Trim or Raw Pre-roll	~~>~~ 0.65 A_w	Remediate and retest ~~Destroy~~
	Infused Edible	0.85 A_w	Remediate and retest
Moisture content	Bud/Flower, Shake/Trim or Raw Pre-roll	~~> than~~ 15%	Remediate and retest

Table 2

Quality Control Sample	Acceptance Criteria	Frequency
Positive control	Produces expected result, positive result	Per Batch
Negative control	Produces expected result, negative result	Per Batch
Duplicate sample	Results shall concur	~~Per Run~~ Per Batch
Analyst or technician Quantitative Performance Plate count comparisons monthly	Within 10% for all analysts	Monthly

Table 3

Quality Control Sample	Acceptance Criteria	Frequency	Corrective Action
Positive control	Produces expected result, positive result	Per run, for each assay	Re-prep and reanalyze the entire analytical batch, once. If problem persists, locate and remedy the source of unexpected result, then re-prep samples and reanalyze with a new set of controls.
Inhibition positive control	Produces expected result, positive result	Every extracted sample	Re-prep and reanalyze the sample, once. If problem persists, locate and remedy the source of unexpected result, then re-prep sample and reanalyze with a new set of controls.
No template control	Produces expected result, negative result	Per run	Re-prep and reanalyze the entire analytical batch, once. If problem persists, locate and remedy the source of unexpected result, then re-prep samples and reanalyze with a new set of controls.
Negative control	Produces expected result, negative result	Per run	Re-prep and reanalyze the entire analytical batch, once. If problem persists, locate and remedy the source of unexpected result, then re-prep samples and reanalyze with a new set of controls.

Duplicate sample ~~Laboratory replicate sample~~	Sample results ~~must~~ shall concur		Reanalyze sample and associated replicate sample once. If problem persists, re-prep samples and reanalyze.

Table 4

Quality Control Sample	Method	Acceptance Criteria	Corrective Action
Method Blank Sample	Potency, Heavy Metals, Terpenoids, Pesticides, Mycotoxins, Residual Solvents	Not to exceed LOQ	Reanalyze entire analytical batch once. If method blank is still greater than the LOQ for any analyte, locate the source of contamination then re-prep samples and reanalyze.
Laboratory Control Sample	Potency, Heavy Metals, Terpenoids	80-120% recovery ~~RPD ≤20%~~	Reanalyze the entire analytical batch, once. If problem persists, re-prep samples and reanalyze or re-run the initial calibration curve.
	Pesticides, Mycotoxins, Residual Solvents	70-130% recovery	
Duplicate Sample	Potency, Heavy Metals, Terpenoids, Pesticides, Mycotoxins, Residual Solvents	RPD ≤20%	Reanalyze sample and associated replicate sample once. If problem persists, re-prep samples and reanalyze.
~~Laboratory Control Sample~~	~~Percent recovery 70% to 130%~~		~~Reanalyze the entire analytical batch, once. If problem persists, re-prep samples and reanalyze or re-run the initial calibration curve.~~
~~Laboratory replicate samples~~	~~RPD ≤30%~~		~~Reanalyze sample and associated replicate sample once. If problem persists, re-prep samples and reanalyze.~~
~~Matrix Spike Sample~~/~~Matrix Spike Duplicate~~	~~Percent recovery 70% to 130%~~ ~~RPD ≤20%~~		~~Reanalyze sample and associated matrix spike sample once. If problem persists, re-prep samples and reanalyze.~~

ICV	Potency, Heavy Metals, Terpenoids	80-120% recovery	Reanalyze sample. If ICV still fails, re-run the initial calibration curve.
	Pesticides, Mycotoxins, Residual Solvents	70-130% recovery	
CCV	Potency, Heavy Metals, Terpenoids	80-120% recovery ~~Percent recovery 70% to 130% RPD ≤20% except for lowest point, which can be ±30%~~	Samples analyzed prior to the CCV failure must be reanalyzed. ~~Reanalyze all samples that followed the last CCV that met the acceptance criteria.~~ If CCV still fails, re-run the initial calibration curve and all samples in the analytical sequence.
	Pesticides, Mycotoxins, Residual Solvents	70-130% recovery	

APPENDIX B

SCHEDULE OF DISCIPLINARY ACTIONS

Violation	Penalty~~Offense~~	Unit of Measurement
Failure of an employee to possess an active work permit	$5,000	Each employee found without an active work permit.
Employment of ~~someone~~person under the age of 21	$5,000	Each employee found under the age of 21.
Failure to assist Department during recall of product	$5,000	Each directive from the Department regarding recall.
Failure to comply with security requirements	$5,000	Each security deficiency related to Rules in this Part.
On-site use of cannabis by employee(s) of medical cannabis establishment	$5,000	Each employee ~~found~~ using cannabis on premises of the medical cannabis establishment.
Failure to sufficiently maintain records	$10,000	Each deficiency/finding related to recordkeeping to Rules in this Part.
Unlawful acquisition, transfer, purchase or sale of cannabis and/or cannabis product(s) ~~unless otherwise listed~~	$10,000	Each instance of acquisition, transfer, purchase or sale.
Failure to accurately track inventory	$10,000 and/or one-week suspension and/or destruction of product	Each untagged plant, package and/or batch at the time of the Department's finding.
Falsification of records	$10,000 and/or one week suspension	Each instance of falsification of records required under~~related to recordkeeping to~~ Rules in this Part.
Refusal to permit access by Department staff as required by law	Two-week suspension	Instance/Occurrence documented at the time of requested access.
Threat against law enforcement and/or Department staff	Two-week suspension	Instance/Occurrence documented at the time of the threat.
Cultivation activities during a license suspension period	Revocation	Cultivation activities that would include (but not limited to) any planting, drying, harvesting, and/or packaging during the dates of suspension and any administrative appeal.

Processing activities during a license suspension period	Revocation	Activities related to processing during the dates of suspension and any administrative appeals.
Transportation activities during a license suspension period	Revocation	Transportation activities that would include during the dates of suspension and any administrative appeal.
Disposal/Destruction activities during a license suspension period	Revocation	Any disposal activities during the dates of suspension and any administrative appeal.
General ~~P~~penalty ~~if~~ for any violation/infraction not specifically listed in this Table	$5,000	Each instance and/or finding to be specifically identified by the Department.

APPENDIX C

RULES AND PROCEDURES FOR ADMINISTRATIVE HEARINGS

1. Hearing Officer: The Hearing Officer shall be appointed by the State Health Officer or his/her designee. The Hearing Officer shall preside at the hearing, shall be charged with maintaining order at the hearing, and shall rule on all questions of evidence and procedure in accordance with the provisions of these rules.

2. Appearance by Licensee/Aggrieved party: The licensee/aggrieved party shall appear at the date and time set for the hearing, and failure to do so without reasonable notice to the Department may result in admission of the charges and adverse action taken against the licensee.

3. Representation by Counsel: The licensee/aggrieved party may, but is not required to be, represented by counsel at the hearing at his/her own expense and shall have the right to cross-examine all witnesses, present evidence, written or oral, on his/her own behalf, and to refute any testimony or evidence presented by the Department.

4. Confidentiality of Hearings: Administrative hearings before a Hearing Officer are considered confidential and are not open to the public.

5. Rules of Evidence and Discovery: Formal rules of evidence and procedure, including Discovery, do not apply in administrative hearings; however, the rules of evidence may be used as a guide during the hearing. A record of the hearing shall be made by a court reporter.

6. Attendance of Witnesses: The licensee/aggrieved party or counsel for the Department may make a written request to the Hearing Officer at least ten (10) days prior to the hearing to ensure the attendance of a witness or the production of documents through the issuance of an administrative subpoena. The issuance of the subpoena shall be at the discretion of the Hearing Officer.

7. Order of Proceedings: The Department shall present its case first, followed by the licensee/aggrieved party, and any rebuttal evidence by either party. At the request of either party, all prospective witnesses shall be excluded from the proceedings except while actually testifying.

8. Standard of Proof: In order for the Department's decision to be ~~upheld~~ overturned, the Hearing Officer ~~must~~ shall find that the regulatory violation ~~has been proved by clear and convincing evidence~~ and/or ~~that the~~ disciplinary action ~~is supported by substantial evidence~~ is (a) arbitrary or capricious; (b) unsupported by substantial evidence; (c) beyond the power of the administrative agency to make; or (d) violated some statutory or constitutional right of the aggrieved party.

9. Recommendation and Final Decision/Final Order: Within thirty (30) days of the hearing, or such period as determined at the hearing considering the amount of testimony and evidence and the complexity of the issues, the Hearing Officer shall submit his/her "Findings of Fact, Conclusions of Law and Recommendation" to the State Health Officer, outlining the proof

presented and containing his/her recommendation to the State Health Officer as to the appropriate action to be taken. The State Health Officer shall issue his/her Final Order adopting, modifying, or rejecting the Recommendation within fourteen (14) days of receipt of the recommendation. This Final Order becomes the final appealable order of the Mississippi State Department of Health as to those proceedings.

10. Appeal of the Department's Final Order shall be accomplished as provided by the appropriate statute.
11. Any person or entity who disagrees with or is aggrieved by the Final Decision or Final Order of the Department concerning the imposition of fine(s) and/or other sanction(s). suspension, or revocation of a license may appeal same in the circuit court of the county in which he/she resides. If the aggrieved party is a nonresident of this state, he/she may appeal to the Circuit Court of the First Judicial District of Hinds County, Mississippi. The appeal shall be filed no later than twenty (20) calendar days after the issuance of the Final Decision or Order by the Department.
12. Any person or entity aggrieved by the decision of the circuit court may appeal to the Mississippi Supreme Court.
13. If the licensee/aggrieved party fails to appeal the Final Order within the prescribed time, the decision becomes final and cannot be further appealed.

Source: Miss. Code Ann. §§ 41-137-1 – 41-137-67.

APPENDIX D

Medical Cannabis Testing Requirements by Product Type

Product Type	Potency	Pesticides &Chemical Residue	Residual Solvents	Heavy Metals	Microbiological Impurities	Water Activity	Moisture Content	Foreign Matter	Homogeneity
Bud/Flower, Shake/Trim or Raw Pre-roll	✓	✓		✓	✓	✓	✓	✓	
Non-Solvent Concentrate*	✓	✓		✓	✓			✓	
Concentrate or Kief	✓	✓	✓	✓	✓			✓	
Infused Beverages	✓	✓	✓	✓	✓			✓	✓
Infused Non-Edible Solids	✓	✓	✓	✓	✓	✓		✓	✓
Infused Edible	✓	✓	✓	✓	✓	✓		✓	✓
Inhalable Concentrates, Infused Pre-Roll or Other Compound Concentrate Products***	✓	✓	✓	✓	✓	✓		✓	

* Extraction using ice water, rosin press or dry ice

** Moonrock, Caviar joint, tarantula, etc.

APPENDIX E

Product Type	Description	Test Sample Packaging
Cannabis Flower	Loose cannabis flower whole or ground.	Batch can be packaged after passing compliance testing.
Raw and Infused Pre-roll products	Cannabis flower loaded, rolled and ready for consumption.	Samples must be in final form. Pre-roll lots in their entirety must be rolled prior to testing and shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.
Oil for Vaporization	Pre-filled vape cartridges and prefilled disposable pens.	Samples shall be in the cartridge or container. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.
Topicals	All products intended for topical use. Some examples are balms, lotions, and body oils.	Samples shall be in final form. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.
Wax, Shatter, Resin	Concentrated cannabis extracted using a solvent. Some examples are budder, crumble, sauce, shatter, crystals, and crumble.	Samples shall be in final form. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.

Product Type	Description	Test Sample Packaging
Gel-based foods, Water- Soluble Edibles, Tablets, Capsules, Solid Chocolates, and Lozenges	Includes: • Any cannabis edible product that is intended to be chewed and relies upon a gelling agent such as, but not limited to, gelatin, agar, or pectin to maintain its shape or texture. Some examples are fruit chews, gummies, and chewable gel capsules. • Tablets, capsules, and lozenges. • Edible products which are intended to be dissolved in water before consumption. Some examples are dissolving powders and effervescent tablets.	Samples shall be in final form. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.
Oral Liquids	Homogeneous oral liquids including tinctures, oral solutions, syrups, and oral emulsions.	Samples shall be in final form. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.
Beverages	All beverages and syrups.	Samples shall be in final form. Remainder of the batch shall be stored in a manner to ensure general sanitary practices and product stability. Remainder of the batch can be packaged after passing compliance testing.