

Cannabis Regulatory Program
Central Coast Regional Water Quality Control Board
Nitrogen Management Plan
 October 17, 2019 Version

County:		Cultivator Name:	
Site Name:		Site Address:	
APN(s):		WDID #:	
Tier:		Risk:	
Disturbed Area (ft²):		Cultivation Area (ft²):	
Cumulative Disturbed Area (ft²)*:		Cumulative Cultivation Area (ft²)*:	

**For sites with multiple enrollments on the same property, report the combined disturbed area and cultivation area of all cannabis cultivation on the property. If this does not apply, leave this section blank.*

Tier 2 dischargers that cultivate greater than one acre of cannabis are required to submit a Nitrogen Management Plan (NMP). This plan describes how nitrogen is stored, used, and applied to crops in a way that is protective of water quality. Refer to Attachment D of the General Order for further technical report guidance. If the sections below do not provide sufficient space, you may attach additional pages.

Fill out the form electronically, save as a PDF file, and email the completed and saved electronic form to CentralCoast.Cannabis@waterboards.ca.gov. Please do not submit forms that have been printed and scanned.

1. Facility Description

A. Location and Configuration
<p>i. Attach a site map that shows the following. (The map can be the same one used for the Site Management Plan as long as it includes the elements listed below.)</p> <ul style="list-style-type: none"> • Site location • Nearby waterbodies • Public and access roads • Topographic lines • Any other features called out in this plan <p>ii. Facility Plan- Attach a scaled drawing that shows the following:</p> <ul style="list-style-type: none"> • The facility • Disturbed areas • Cultivation areas • Buildings • Access roads • Greenhouses • Material storage areas • Sources of irrigation water including the location of wellheads if applicable • Water storage • Any other features called out in this plan

B. Growing Methods

i. What is the canopy area acreage at plant maturity?

Canopy Area = _____ Acres

ii. Where is cannabis grown?

- Fully outdoors Hoophouse Greenhouse with permeable floors
 Other (please describe):

iii. What method is used to grow cannabis?

- Soil Hydroponic Other (please describe):

iv. What type of medium/ container is cannabis grown in?

- In ground Raised beds Grow bags with soil Pots with soil
 Pots with hydroponic medium Trays with soil Trays with hydroponic medium
 Other: _____

v. Provide a description of the growing methods checked above, including how the crop is irrigated.

C. Recycled Water

If water is recycled, provide a description of the storage, treatment and reuse process.

2. Sources of Nitrogen

A. Bulk Materials

What bulk materials are used for cultivation? This includes materials used as growing medium or amendments such as potting soil, manure, biosolids, etc.

B. Dry Fertilizers

What dry fertilizers are used for cultivation? This includes materials added to a growing medium or mixed with irrigation water that provide nutrients to the crop. Examples include bone meal, feather meal, pelletized manure or biosolids, pelletized chemical fertilizer, etc.

C. Liquid Fertilizers

What liquid fertilizers are used for cultivation? This includes materials added to irrigation water and applied directly to the crop. Examples of liquid fertilizers include fish emulsion and chemical fertilizers.

3. Nitrogen Storage, Use, and Disposal Practices

A. Delivery and Storage

i. When are fertilizers delivered to the site? (e.g. as needed or at the beginning of the growing season)

ii. How will bulk, dry, and liquid fertilizers be stored? Describe the storage method, storage structure, and secondary containment.

B. Mixing or Processing

Where will nitrogen containing materials be mixed or processed? Describe the areas and indicate their location on the site map. Describe measures taken to limit spills and protocol in place to address spills when they occur.

C. Disposal

i. How will spent growing medium be dealt with? Check all that apply.

Used on site Removed from the site Other: _____

ii. Describe the method(s) checked above. If spent growing medium is used on site, describe how amendments are added to the existing medium to improve the nitrogen content. When does this process occur?

4. Nitrogen Application Rate

A. Monthly Applied Nitrogen

Complete the nitrogen management worksheet in Attachment A below that calculates the pounds of nitrogen applied on a month-by-month basis for the entirety of the growing season. Note that pounds of nitrogen applied is less than pounds of fertilizer applied.

See [Attachment D of the Cannabis General Order](#) for guidance on calculating nitrogen applied.

B. Nitrogen Limited Plants

If nitrogen is applied beyond the limit established in the General Order, a plant tissue sample analysis must be provided that demonstrates that the crop is nitrogen limited. The analysis must demonstrate that the crop has an uptake rate that is greater than the established application limit. If this applies, provide the name and contact information of the analytical or agricultural laboratory that will provide plant tissue analysis:

Lab Name: _____

Phone Number: _____

Email Address: _____

5. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I have read and accept the above terms.

Operator/Responsible Party _____ Date Prepared _____

Attachment A – Nitrogen Management Worksheet

Instructions

1. Section 1: Nitrogen in Source Water
 - a. Report the concentration of nitrogen in water used for irrigation of cannabis. This value should not include nitrogen added by the cultivator through fertilizer. The nitrogen concentration is used to calculate the amount of nitrogen applied with the irrigation water, reported in Section 2.
 - b. If irrigation water is treated prior to being applied to crops (e.g. by using reverse osmosis), report the concentration before and after treatment.
 - c. If no treatment is used prior to irrigation, use the value reported in A to calculate the amount of nitrogen applied with irrigation water for the tables in Section 2. If treatment is used, use the value reported in C.
2. Section 2: Nitrogen Applied
 - a. Review the definitions below for clarification on key terms.
 - b. Define the boundary of each cultivation area and report the acreage of this area above each table. This defined cultivation area must be consistent throughout the year. You may define multiple cultivation areas on a single property. In the dropdown next to “Cultivation Area,” select the cultivation area number (1, 2, 3, etc.).
 - c. Complete one table for each harvest on each defined cultivation area. Above each table, select a crop number (1, 2, 3, or 4) using the dropdown next to “Crop” and input the canopy acreage of the crop. Within the table, enter the pounds of nitrogen applied through bulk material, dry fertilizer, liquid fertilizer, and existing nitrogen in irrigation source water for each month applied.
 - d. The worksheet will calculate the total nitrogen you plan to apply on a month-by-month and annual basis.
 - e. To complete worksheets for additional cultivation areas, click the button at the beginning of Section 2.

Definitions

- Cultivation Area: For outdoor cultivation, the perimeter of the area planted. For indoor cultivation, the entire area of the structure where cultivation occurs, excluding any areas used solely for non-cultivation activities (e.g. office space).
- Canopy Area: The portion of the cultivation area covered with plant material at maximum plant height and width.
- Bulk: Nitrogen contained in materials either used as growing medium or as amendments to the growing medium (e.g. potting soil, manure, biosolids, etc.)
- Dry Fertilizers: Nitrogen contained in dry materials added to a growing medium or mixed with irrigation water (e.g. bone meal, feather meal, pelletized manure or biosolids, pelletized chemical fertilizer, etc.)
- Liquid Fertilizers: Nitrogen contained in liquid materials added to irrigation water (i.e., fertigation), or that are applied directly to the crop (e.g. fish emulsion, chemical fertilizers, etc.)
- Irrigation Water Nitrogen: Nitrogen present in the irrigation water that was not added by the cultivator. If water is treated prior to being used for irrigation (e.g. reverse osmosis), use the post-treatment nitrogen concentration in the tables.

Nitrogen Applied Calculators

These calculators can be used to assist in calculating nitrogen applied. For further guidance refer to Attachment D of the Cannabis General Order.

Bulk, Dry, and Liquid Products

Use the calculators below to calculate the pounds (lbs) of nitrogen applied to the crop from bulk, dry, and liquid fertilizers.

Bulk Materials

% Nitrogen	Fertilizer Weight Applied (lbs)	Nitrogen Applied (lbs)

Dry Fertilizers

% Nitrogen	Fertilizer Weight Applied (lbs)	Nitrogen Applied (lbs)

Liquid Fertilizers

% Nitrogen	Density (lbs/gallon)	Volume Applied (gallons)	Nitrogen Applied (lbs)

Irrigation Source Water

Use the calculators below to calculate the pounds (lbs) of nitrogen applied to the crop from irrigation source water. Nitrate concentration is typically reported using one of two conventions, either as nitrate (NO_3^-) or as nitrogen ($\text{NO}_3\text{-N}$, or N). Some laboratory methods may provide the nitrogen concentration as Total Nitrogen (Total N).

To calculate nitrogen applied based on nitrate (NO_3^-) concentration:

Volume of Irrigation Water Applied (gallons)	Concentration of Irrigation Water as NO_3^- (mg/L)	Nitrogen Applied (lbs)

To calculate nitrogen applied based on nitrogen ($\text{NO}_3\text{-N}$, N, or Total N) concentration:

Volume of Irrigation Water Applied (gallons)	Concentration of Irrigation Water as $\text{NO}_3\text{-N}$, N, or Total N (mg/L)	Nitrogen Applied (lbs)

Section 1. Nitrogen in Source Water

A. What is the nitrogen concentration of water used for irrigation prior to any treatment?

B. What type of treatment is used on irrigation water prior to application, if any?

Reverse Osmosis No treatment Other: _____

C. If treatment is used, what is the nitrogen concentration of irrigation water after treatment?

Section 2. Nitrogen Applied

To add additional tables, press this button. It may take a few moments:

Cultivation Area
Crop

Cultivation Area Acres:
Canopy Area Acres:

Nitrogen Applied (lbs)

Month	Bulk	Dry	Liquid	Irrigation Water	Monthly Subtotal
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Subtotal					

Total Annual Nitrogen Applied (lbs) =

Cultivation Area
Crop

Cultivation Area Acres:
Canopy Area Acres:

Nitrogen Applied (lbs)

Month	Bulk	Dry	Liquid	Irrigation Water	Monthly Subtotal
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Subtotal					

Total Annual Nitrogen Applied (lbs) =

Cultivation Area
Crop

Cultivation Area Acres:
Canopy Area Acres:

Nitrogen Applied (lbs)

Month	Bulk	Dry	Liquid	Irrigation Water	Monthly Subtotal
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Subtotal					

Total Annual Nitrogen Applied (lbs) =