

MARYLAND AGRICULTURAL NUTRIENT MANAGEMENT REGULATIONS

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MARYLAND NUTRIENT MANAGEMENT PROGRAM TIMELINE

1989 – Initiation of Program

1992 – Certification & Licensing

1998 - Water Quality Improvement Act Passage

2000 – Regulations Finalized

2003 – Making Nutrient Management Work

2004 – Nutrient Management Law Amended

2005 – Nutrient Management Regulations Revised

Dec. 2009 – MDE General Permit for AFO Took Effect

2011 Fertilizer Use Act of Revised the Urban NM Program

Oct. 2012 – Nutrient Application Requirements/Setbacks Took Effect

June 2015 – Phosphorus Management Tool Took effect

January 2017 – Nutrient Application Requirements Amended

2019 - Nutrient Management Law Amended-AIR, Fines & Reporting

2020 - Nutrient Management Law Amended Urban NM Program

January 2023 – Nutrient Application Requirements Amended

April 2024 Food Processing Utilization Permits Law Passage



The Water Quality Improvement Act of 1998

- **This legislation required all farm Operator's that met certain criteria to have a mandated Nutrient Management Plan for their Agricultural Operation.**
- **The Nutrient Management Law is Agriculture Article 8-801 – 8.807**



AGRICULTURE CHAPTERS

COMAR = Code of Maryland Regulations

- **COMAR 15.20.04 - Certification & Licensing**
- **COMAR 15.20.05 - Manure Transportation Project**
- **COMAR 15.20.06 - Fertilizer Application Requirements**
- **COMAR 15.20.07 - Agricultural Operation NM Plan Requirements**
- **COMAR 15.20.08 - NM Plan Content & Criteria**
- **COMAR 15.20.10 - Turfgrass Regulations Non - Ag**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.01 SCOPE

- **Applies to individuals or businesses that prepare farm nutrient management plans**
- **Management of essential primary nutrients (N-P-K)**
 - Optimum crop production
 - Water quality protection
- **Plans Contain Nutrient Recommendations**
 - Expected Crop Yield
 - Existing nutrient levels in the soil
 - Organic residuals
 - Optimum Nutrient Application Timing & Placement
 - Other BMP's (liming, tillage, crop rotation, etc)



COMAR 15.20.04 – CERTIFICATION & LICENSING

.02 DEFINITIONS

- **Please refer to the regulations for definition of terms.**

i.e. “Crop Nutrient Needs” means the primary nutrient requirements of a crop determined as pounds of ...



COMAR 15.20.04 – CERTIFICATION & LICENSING

.03 Certification & License Requirement

- **Individual may not act as certified consultant unless certified by the Department**
- **A person may not engage in the business of writing plans unless licensed by the Department**
 - Certified Operators can write their own plans
 - No license Required



COMAR 15.20.04 – CERTIFICATION & LICENSING

.04 Certification Application & Examination Requirement

- **Submit Application Form to MDA – 15 days before the exam**
- **Proof of Education and Experience**
 - Degree in agricultural related field
 - One year practical experience acceptable to MDA
 - Or combination of both
- **Appropriate fee - \$50**
 - Except for govt. agency
 - One time payment for farmers
- **Timely Application Required**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.05 Examination

- **Once a year, announced 30 days before the exam**
- **May provide required training or a list of study materials**
- **Allow for retake**
 - Re-submit application 15 days before the exam
 - Pays appropriate fee
- **Offer required training & certification for farm operators for specific type of operations at least once a year**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.06 Certification

- **Certify as Nutrient Management Consultant or Certified farm Operator**
 - Meets chapter requirements
 - Satisfy MDA education and experience
 - Training requirements
 - Passes MDA approved examination



COMAR 15.20.04 – CERTIFICATION & LICENSING

.07 Employment Requirement

- **Consultant must be licensed or employed by other licensed company/person if engage in the business of writing plans**
- **Certified consultants (operators/farmers) writing plans **ONLY** for their own operation**
 - No need for a BUSINESS license



COMAR 15.20.04 – CERTIFICATION & LICENSING

.08 Certification Renewal

- **Initially issued for one year and renewed every three years**
 - Submit MDA renewal application form
 - Renewal fee \$150 (except for govt. agency consultants and farmers)
 - 12 hours of CEU every 3 years completed for consultants
 - 6 hours of CEU every 3 years for certified farm operators
 - Comply with all the requirements on the preparation of NMP
 - Comply with all other requirements such as reporting and record keeping
- **Failure to renew on time... may require you to re-take the exam**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.09 New License Application

- **Submit MDA Application form**
- **Pay appropriate fee, except for govt. agency**
 - \$100 for corporation/company
 - \$50 for individual
- **Have at least one certified consultant**
- **Agree to comply with chapter requirements**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.10 License Renewal

- **Issued for one year (initial)**
- **Renewal every three years**
- **Pay appropriate fee**
 - \$150 for 3 year period
- **Maintain at least one active consultant**
- **Comply with requirements of the chapter**



COMAR 15.20.04 – CERTIFICATION & LICENSING

.11 Record Keeping and Reporting Requirements

- **License Holder shall file Annual Activity Report by September 30th of each year (July 1 – June 30 of previous year)**
- **Record Keeping Copies of NM Plans**
 - 5 years of records and made available to MDA upon request



COMAR 15.20.04 – CERTIFICATION & LICENSING

.12 Denial, Suspension or Revocation

- **Opportunity for a hearing**
- **Violations**
 - Providing misleading information when applying for certificate, license
 - Misleading, false or fraudulent reporting
 - Offering or preparing plans w/o certificate and license
 - Preparing plans not meeting state's criteria
 - No certified consultant working
 - Failure to report or allow MDA access for inspection
 - Failure to meet continuing education requirements



COMAR 15.20.04 – CERTIFICATION & LICENSING

.13 Reinstatement of Certificate or License after Disciplinary Action

- **Denied, Suspended or revoked certificate may be required to retake the certification examination**



COMAR 15.20.06 – NUTRIENT & COMMERCIAL FERTILIZER APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND

.01 SCOPE

- **Applies to >10 acres of agricultural-land owned or managed**
 - Have an applicator voucher (good for 3 years)
 - Be a certified consultant or certified farm operator
 - Hire a certified consultant



COMAR 15.20.06 – NUTRIENT & COMMERCIAL FERTILIZER APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND

.03 to .04 Commercial Application of Nutrients – For Hire

- **Agricultural-Land**
 - Certified consultant or work under the supervision of certified consultant
 - Must apply nutrients according to the plan



COMAR 15.20.06 – NUTRIENT & COMMERCIAL FERTILIZER APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND

.05 Record Keeping & Reporting Requirements

- **Ag-land Commercial Applicator**
 - Records of being certified or working under the supervision
 - Keep 3 yrs. Application Records
 - Type & amount of nutrients applied
 - Crop acreage receiving nutrients
 - Location & timing of application
 - Analysis of nutrients applied



COMAR 15.20.06 – NUTRIENT & COMMERCIAL FERTILIZER APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND

.06 Denial, Suspension or Revocation of Certificate or Voucher

● **Subject for denial, suspension & revocations**

- Providing misleading, false, or fraudulent information
- Failure to meet educational and continuing education requirements
- Failure to apply, or to supervise nutrient applications as required

● **Appeal process**

- Opportunity for a hearing with MDA Secretary before denial, suspension or revocation



COMAR 15.20.07 – AGRICULTURAL OPERATION NMP REQUIREMENTS

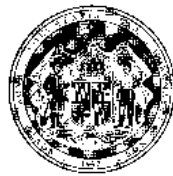
.01 SCOPE

- **Applies to a farm or agricultural operator and requires the operator to develop and implement N-based and P-based NMP for ag operation by certain deadlines**
- **"Agricultural operation" means a business or activity that:**
 - Tills, crops, keeps, pastures, or produces an agricultural product, including livestock, poultry, plants, trees, sod, food, feed, or fiber by in-ground, out-of-ground, container, or other culture
 - Has a gross annual income of \$2,500 or more, or has eight or more animal units.



COMAR 15.20.07 – AGRICULTURAL OPERATION NMP REQUIREMENTS

.02 Incorporation by Reference & .03 Definitions



Maryland Nutrient Management Manual



- **Nutrient Recommendations**
- **Technical Standards & Criteria**
- **Laws and Regulations**

Maryland Department of Agriculture
Nutrient Management Program
50 Harry S. Truman Parkway
Annapolis, Maryland 21401
410-841 5959
www.mda.maryland.gov



COMAR 15.20.07 – AGRICULTURAL OPERATION NMP REQUIREMENTS

.04 & Plan Development and Implementation Deadlines

- **Chemical Fertilizers**

- N & P based by December 31, 2001
- Implement by December 31, 2002

- **Biosolids or Animal Manure**

- N based by December 31, 2001
- Implement by December 31, 2002
- N & P based by July 1, 2004
- Implement by July 1, 2005



COMAR 15.20.07 – AGRICULTURAL OPERATION NMP REQUIREMENTS

.05 Plan Development and Implementation Deadlines

- **Plan must be prepared by a Certified Consultant**
 - To meet implementation Deadlines (already mentioned)
 - Must address all aspects of the operation
 - Must address and identify management and disposition of all primary nutrients
 - Produced, Imported, and exported
 - Must address manure management for the entire operation
- **Plan shall be developed based on COMAR 15.20.08**
- **Plan Updates**
 - Crop or Crop Rotation has changed
 - Soil test results indicate a change in recommendation (3 year)
 - Acreage Managed changes 10% or 30 acres whichever is less
 - Animal Units change 10% or greater



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

.04 Required Plan Content

- **Plan Identification (Initial Plan Reporting Form)**
 - Farmer/Operator Information
 - Farm Information (location)
 - Plan Information (type of operation)
 - Consultant's information
- **Map or Aerial Photograph**
 - Location and boundaries, acreage, clearly recognizable
- **Soil Test Results**
 - Not more than 3 years old
- **Summary of Nutrient Recommendations**
 - Compilation of individual field or management unit specific information



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

.04 Required Plan Content Cont.

- **Field or Management Unit Specific Info.**

- Date recommendations prepared, Account ID's, Watershed code, Mgt. Unit identifier & acreage, soil analysis, expected crop yield goal, crop rotation, primary nutrient requirements, account of N residuals, nutrient applications, lime, nutrient application method and timing and tillage information

- **Plan Maintenance Information**

- Length of time the plan is effective
- Circumstances or changes in operation
 - introduction of new crop or change in rotation
 - Change in area, 10% or 30 acres
 - 10% or more change in animal units
- BMP Recommendations for achieving optimal fertility range



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

.05 Required Plan Recommendations

- **Nutrient Rates**

- Consistent with MDA technical standards and criteria
- Nutrient Rates are based on UM Crop Nutrient Rec. or alternative standards acceptable to the Department

- **Expected Crop Yield or Production Goal**

- Ave. of 3 highest yields from latest 5 consecutive yrs.
- If yield info is >5 years, use average of 60% of highest yielding years
- If yield records are not available, use soil productivity info.(Web Soil Survey) ,or yields from similar nearby fields or mgt. units



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

Required Plan Recommendations Cont...

- **Soil Analysis Result**
 - For each management unit
 - Based on standard soils lab acceptable to MDA
 - Valid for 3 years with some exceptions and justifications
- **Determination of Limiting Nutrient**
 - If soil fertility, $P < 150$ FIV, use N-based (plant needs)
 - $P > 150$ (FIV), use PMT



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

Required Plan Recommendations Cont...

◦ **Natural Organic Fertilizer**

- Must have nutrient analysis at least once a year using acceptable sampling method
- Analysis must be done as close to nutrient application as possible
- Baseline or book value can be used

◦ **Method of Nutrients Application**

- Minimize N & P losses
- Techniques for accurate and uniform application
- Split application of N for soils with high leaching potential

◦ **Nutrient Application Requirements**

- As close to plant nutrient uptake to maximize efficiency, minimize movement
- Consistent with Maryland's Nutrient Management Manual. (Turn to Section I-D)
- Nutrient Application Setbacks (Setbacks Handout)
- Temporary Stockpiling of organic nutrients

◦ **Manure Management if applicable**

- Account of current management measures, i.e. stockpiling, handling & storage to improve nutrient use



SETBACKS FOR NUTRIENT APPLICATION

"Nutrient Application Setback" means:

- A **vegetated area** of a prescribed width **where nutrient containing material may not be applied.**
- as measured from the edge of surface water, including **perennial and intermittent streams.**
 - An intermittent stream means a stream or the reach of a stream that is below the local water table for at least some part of the year, and obtains its flow from both surface runoff and ground water discharge.



SETBACKS FOR NUTRIENT APPLICATION

Surface water does not include:

- **Ephemeral streams**
defined as streams which flow only in direct response to precipitation in the immediate watershed and which have a channel bottom that is always above the local water table;
- **Irrigation and treatment ditches**
- **Field ditches**, which, for purposes of this exception, are defined as channelized waterways that, as provided in the USDA-NRCS National Cooperative Soil Survey, are not within:
 - A floodplain soil mapping unit;
 - A hydric soil unit and mapped as a narrow, elongated feature in a fluvial/floodplain position; or
 - A soil mapping unit that has a “B” slope class or steeper



SETBACKS FOR NUTRIENT APPLICATION (con't)

Effective January 1, 2014, a person who uses nutrients shall implement the following nutrient application setback requirements:

- An application using a **broadcast method** (e.g., spinners, splashers) either with or without incorporation requires a **35-foot setback**.
- A **directed spray application or injection** of crop nutrients requires a **10-foot setback**.
- Excepting perennial forage crops grown for hay or pasture, **vegetation in the 10-foot setback area may not include crop plants**.
- **Pastures and hayfields are subject to a 10-foot setback**.



SETBACKS FOR NUTRIENT APPLICATION (con't)

- Nutrients may not be applied mechanically within the setback. Except as provided in subsection II.B.6, **livestock shall be excluded from the setback to prevent direct deposition of nutrients within the setback.**
- As an alternative to fencing livestock from the setback area, a person shall work with the soil conservation district to develop and implement a Soil Conservation and Water Quality Plan with (BMPs) such as stream crossings, alternative watering facilities, pasture management or other MDA-approved BMPs.
- As an alternative to a nutrient application setback, MDA may approve other BMPs that it finds equally protective of water quality and stream health. USDA-NRCS, University of Maryland or other land grant university establishing the effectiveness of these practices.
- Sacrifice lots (less than 75% grass or grass legume mix) shall maintain a 35-foot set back.

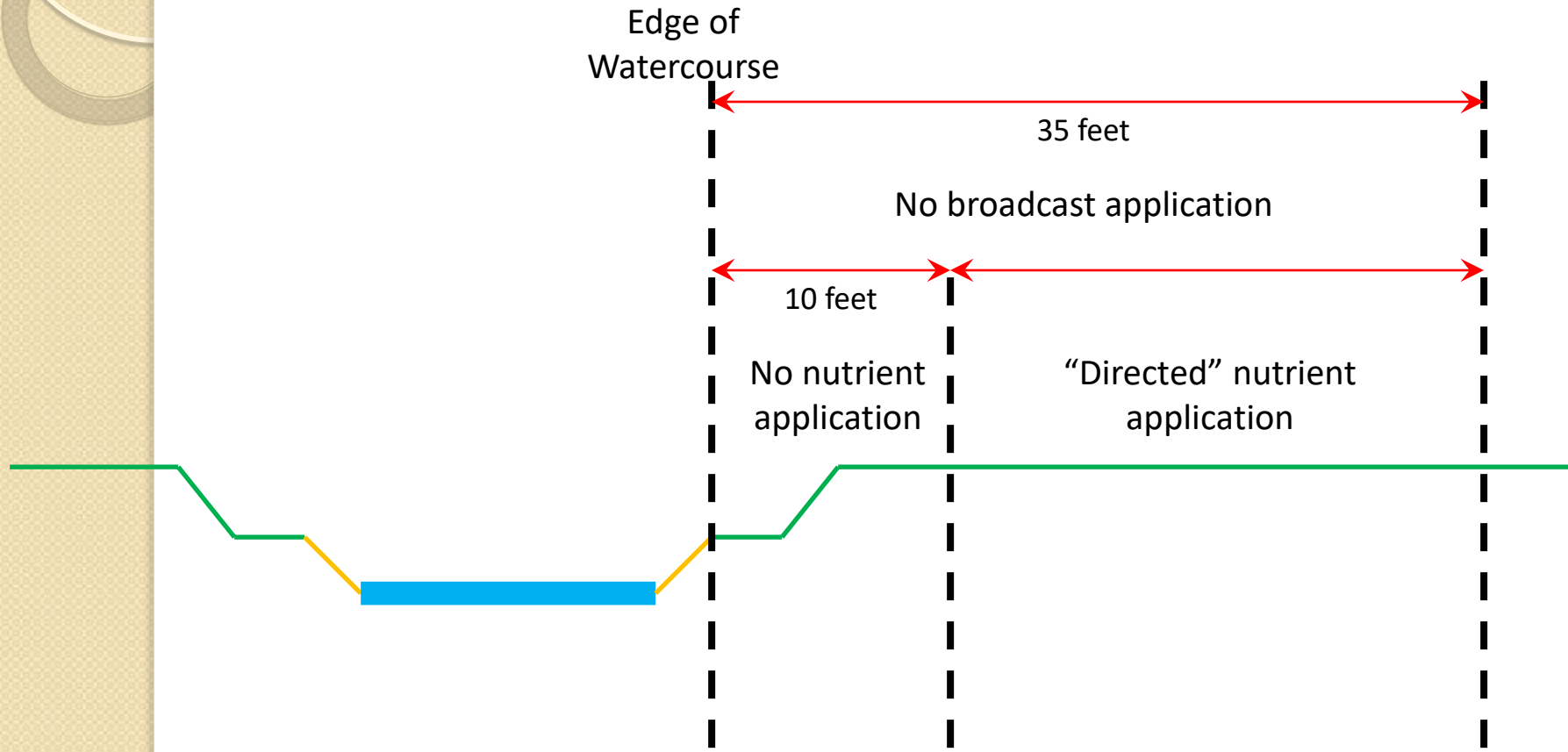


Nutrient Application Setbacks

If the watercourse is:	It is defined as a:	For crop and pasture land adjacent to the watercourse, the setbacks requirements:
Natural <u>and</u> either perennial or intermittent	Stream	Apply
Channelized <u>and</u> perennial <u>and</u> ; A. Lies within a floodplain soil map unit, or B. Lies within a hydric soil map unit “mapped as a narrow, elongated feature in a fluvial (stream-like)/floodplain position, or C. Lies within a “B” slope or greater soil	Stream	Apply
Channelized and intermittent	Ditch	Do Not Apply
Ephemeral (natural or channelized)	Ditch	Do Not Apply



Nutrient Application Setbacks



Nutrient Application Timing

Spring/Summer Application-(Mar 1– Sept 9)

Chemical / organic fertilizers allowed for existing crop or crops to be planted:

- Application must be in accordance with Maryland Nutrient Management Manual
- Organic fertilizers shall be injected or incorporated within 48 hours EXCEPT:
 - direct deposit of livestock manure
 - permanent pastures, hay production
 - “HEL” as defined by USDA-NRCS
 - Operators who choose to use No-Till farming practices
 - land with crops receiving spray irrigation



Nutrient Application Timing

Fall Application- (Sep 10 - Dec 15)

Organic Fertilizers:

- **Allowed for existing crop or crops to be planted in the fall or the following spring**
- **Application must be in accordance with Maryland Nutrient Management Manual**
- **Must be injected or incorporated within 48 hours EXCEPT:**
 - Same as Spring exception to incorporation
- **Applications may be applied to fallow land but cover crop shall be planted as soon as possible after application.**
 - Planting shall occur no later than Nov 15
 - Application must be in accordance with Maryland Nutrient Management Manual



Nutrient Application Timing

Fall Application- (Sep 10 - Dec 15), cont'd...

- **Nutrient application rate shall be determined based on *Maryland Nutrient Management Manual* by either N or P-based criteria**
- **For P-Based**
 - Fall crops shall be based on P recommendations
 - For spring crops not to exceed one year P-Removal rate
 - Follow PMT provisions
 - Not to exceed 50 lbs of PAN/acre



Nutrient Application Timing

Fall Application (Sep 10 - Dec 15), cont'd...

- **For N-Based**

- Follow *Maryland Nutrient Management Manual* N recommendations for fall crops
- For spring crops may not to exceed 50 lbs of PAN/acre

- **EMERGENCY SITUATIONS**

- Consult MDA regional representative for guidance



Nutrient Application Timing

Winter Application (Dec 16 – last day of February)

- **No winter application of a chemical fertilizer to cropland, except :**
 - N for green-up when tillering begins for small grains & perennial forage crops outlined in *Maryland Nutrient Management Manual* section I-B
 - Certain nutrients for greenhouse production, vegetable and small fruit crops listed in the *Maryland Nutrient Management Manual* Section I-B
 - K or liming materials



Nutrient Application Timing

Winter Application (Dec 16 – last day of February), cont'd...

- **Organic fertilizer application to cropland provided:**
 - Inadequate storage (capacity will be exceeded before March 1)
 - Non-stackable
 - No other reasonable option to manage it
- **Application in accordance with Section I-B of the *Maryland Nutrient Management Manual***



Nutrient Application Timing

Winter Application (Dec 16 - Feb 28), cont'd...

- **Restrictions for winter application:**
 - Stackable (equal or less than 75% moisture content) or adequate storage is available
 - Saturated soil, snow covered ground >1", or hard-frozen ground >2".
 - Slope greater than 7%
 - Rates of application minimized and available acreage used to the greatest extent practical. Rate per acre cannot exceed the one-year P removal rate, or 50# of PAN for the next harvested crop, Any winter applied nutrients will be deducted from the next harvested crop.
 - A setback of at least 100 feet from all surface waters shall be maintained, unless best management practices providing water quality protection equivalent to such a setback are in place.



Nutrient Application Timing

Prohibition against winter application:

- **Prohibition does not apply to:**
 - K, liming materials, or manure deposited directly by livestock
 - Certain nutrients for greenhouse production, certain vegetable crops, small fruit crops, small grain crops, and cool season grass sod production listed in the *Maryland Nutrient Management Manual* Section I-B



TEMPORARY FIELD STOCKPILING FOR ORGANIC NUTRIENT SOURCES

General Provisions (Abbreviated Version)

- **When other immediate use options and alternatives are not available, temporary field stockpiling (staging) of organic nutrient sources is allowed.**
- **Temporary field stockpiling (staging) provides greater environmental protection than a fall or winter application of nutrients or applying nutrients too far ahead of normal planting time and crop uptake.**
- **Existing storage shall be fully used prior to stockpiling material in the field.**
- **Any material staged in field stockpile shall be land applied in the first spring season following the placement of the stockpile.**
- **Materials shall be field stockpiled (staged) temporarily in a manner that prevents nutrient runoff.**



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

Additional Required Plan Content for Container or Out-of-Ground Ag. Production

- **Summary of Plant Production**
 - Listing of plants, # of plants grown by categories and sizes
 - Total growing area
- **Summary of Nutrient Recommendations**
 - Listing of all nutrient sources and quantities to be applied
 - Description of application methods
- **Environmental Risk Assessment**
- **General Management Recommendations**
 - Equipment calibration, timing and other management to reduce nutrient losses



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA
Additional Required Plan Content for Container or
Out-of-Ground Ag. Production Cont...

- **Specific Management Recommendations**
 - Grouping plants, monitoring water & nutrient needs, reduce runoff/leachate, and water containment
- **Program for Monitoring Runoff (if risk >0)**
- **Plan Maintenance**
 - Length of time the plan is effective
 - Change in area > 20% or 5 acres
 - Substantial change in production method



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

NM Plan Recommendations for Container or Out-of-Ground Ag. Production

- **Basis of Nutrient Recommendations**

- Label recommendations on fertilizer use
- UM recommendations
- Recommendations from other state univ.
- Research data from other accredited univ.
- General nutrition guidelines for similar plants
- Any other general growing practice on similar growing conditions



COMAR 15.20.08 – NM PLAN CONTENT AND CRITERIA

NM Plan Recommendations for Container or Out-of-Ground Ag. Production Cont...

- **Management Recommendations**
 - Environmental Risk Assessment for out of ground (NM Manual II-D)
 - Maintain zero or low risk
- **Specific BMP's to reduce risk**
 - Appropriate nutrient application methods and timing
 - Operators are required to attend training on minimizing nutrient losses
- **Recommendations for Monitoring Runoff, if risk >0**
 - Time period and frequency of sampling
 - Low risk, twice tests during growing season
 - Medium or High risk, monitor monthly
 - Sampling location - immediately next to growing areas or where runoff enters into any conduits to water bodies
 - calibrated EC meters or nutrient meters
 - 2 samples per year



EXAM DATE: August 2, 2024
Annapolis

9:00 – 11:00 A.M.

GOOD LUCK!

