

**Water Quality Enhancement Activity – WQL07 – Split nitrogen applications, 50% after crop emergence or pasture green up**



**Enhancement Description**

Apply no more than 50% of total crop nitrogen needs within 30 days prior to planting or in the case of pasture or hay after green up of the dormant grasses. Apply the remaining 50% or more of the total nitrogen needs after crop emergence or pasture green up.

**Land Use Applicability**

Crop, Pasture

**Benefits**

Timing of nitrogen application can be used to ensure adequate amounts of N are available during critical growth stages. Application rates can also be adjusted based on crop forage conditions to refine yield goals. Split application of 50% or more of the total N needs allows for more efficient nutrient utilization resulting in a reduced potential for N loss through leaching and/or greenhouse gases to the environment (e.g. nitrous oxide).

**Conditions Where Enhancement Applies**

This enhancement applies to all crop or pasture land use acres.

**Criteria**

Implementation of this enhancement requires:

1. Regardless of form or application method (fertilizer, manure or any other organic byproducts), apply no more than 50% of crop N needs within 30 days prior to planting and 50% or more of the N needs after crop emergence or in the case of pasture or hay after green up of the dormant grasses.
2. Post emergence N application rates can be reduced based on crop scouting reports that would suggest lower yield potential. Scouting reports shall be provided.
3. Participant must have annual manure analysis (if organic nutrient sources are used)
4. Nutrient application rates must be within the “Land Grant University (LGU) recommendations based on soil testing and established yield goals and considering all nutrient sources.
5. Minimize soil surface disturbance to stay within the site’s residue management goals.

**Adoption Requirements**

This enhancement is considered adopted when all of the relevant criteria above have been implemented on the land use acre.



United States Department of Agriculture  
Natural Resources Conservation Service

2014 Ranking Period 1

### **Documentation Requirements**

1. Written documentation for each treatment area (field) and year of this enhancement describing these items:
  - a. Acres,
  - b. Planned crop,
  - c. Planting date and crop planted,
  - d. Dates of crop emergence,
  - e. Annual manure analysis results (if organic nutrient sources are used),
  - f. Crop yields (both yield goals and measured yield),
  - g. Nutrient application rates/amounts and application dates for each treatment area, and
  - h. Scouting reports.
2. A map showing where the activities are applied.

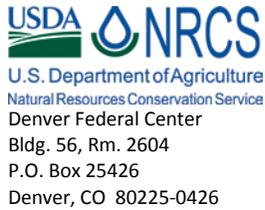
Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

### **References**

Follett, R.F. 2001. Nitrogen transformation and transport processes. *In* Nitrogen in the environment; sources, problems, and solutions, (eds.) R.F. Follett and J. Hatfield, pp. 17-44.

International Plant Nutrition Institute (IPNI). 2012. 4R Plant Nutrition – A Manual for Improving the Management of Plant Nutrition (North American Version). IPNI, Norcross, GA.

Randall, G., J.A. Delgado, J.S. Schepers. 2008. Nitrogen management to protect water resources. p. 911-945. In Schepers and Raun (eds) Nitrogen in Agricultural Systems. SSSA Monograph. 49. Madison, WI.



## Colorado Supplement

to

National CSP 2014 Enhancement Activity Job Sheet: WQL07

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### Criterion #3

Annual soil and manure sampling and analysis is required for systems that receive organic nutrient applications.

Soil tests for mineral systems that do not receive organic nutrients must be less than three years old.

Acceptable soil test labs are those that meet the requirements of the [North American Proficiency Testing Program – Performance Assessment Program](#) (NAPT-PAP).

Acceptable manure testing labs are those that meet the requirements of the [Minnesota Department of Agriculture, Certified Manure Testing Labs Program](#).

### Criterion #4

Complete a Colorado [Nutrient Management 590 Job Sheet](#) to document planned and applied nutrient applications.

Completion of a [Colorado Nitrogen Leaching Index Risk Assessment](#) is required for each field and soil test cycle unless the Preliminary Nitrogen Leaching Risk Screening Tool indicates that a risk assessment is not necessary.

Completion of a [Colorado Phosphorus Index Risk Assessment](#) is required for each field and soil test cycle when any of the following conditions apply.

- The planned phosphorus ( $P_2O_5$ ) application rate exceeds CSU fertility rate guidelines for the planned crop, or
- The site is located within a phosphorus- impaired watershed (contributes to 303d-listed water bodies), or
- The Preliminary Phosphorus Risk Screening Tool directs the planner to complete a Phosphorus Index Risk Assessment.

**Additional Documentation Requirements**

Provide copies of the completed Colorado Nutrient Management 590 Job Sheet and applicable soil and organic nutrient analyses to certify practice application.