NRCS

Natural Resources Conservation Service

WASHINGTON

WQL09 – Apply phosphorus fertilizer below the soil surface

CSP Enhancement Washington State Supplement

Land Use Applicability: Cropland

January 2014

Client/Operating Unit:		Tract Number:	
Farm/Ranch Location:		Farm Number:	
Specifications Date:		Field Number(s):	
Planned Installation Date:		Proposed Treatment Acres:	

Enhancement Description:

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This enhancement is for the application of all phosphorus fertilizer at least 3 inches deep, including manure, or as a 2X2 row starter. Note: the use of this enhancement may require a revised Highly Erodible Land Conservation (HELC) plan.

Benefits

Nutrient management encompasses managing the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments. Nutrient management effectively utilizes available nutrient resources to supply crops with nutrients required to efficiently produce food, forage, fiber, and cover while minimizing environmental degradation. Nutrient management enhancement activities help agricultural production and the environment.

Increased management activities will protect and enhance water quality and the biotic community that depends upon clean lakes and rivers. Nutrient application placement is critical in order for nutrients to be available during critical crop growth stages and to meet crop yield goals. By applying phosphorus either 3 inches deep or as a 2x2 row starter, it is less vulnerable to loss in surface runoff, both in solution and attached to soil particles, therefore reducing the potential loss of nutrients to the environment.

Conditions Where Enhancement Applies

This enhancement applies to all annually planted crop land use acres.

Criteria for applying phosphorus fertilizer below the soil surface

Implementation of this enhancement requires:

1. All phosphorus fertilizer, regardless of form, will be injected at least 3 inches deep below the soil surface, and/or phosphorus applied as a starter fertilizer during the planting operation will be placed in a band 2 inches to the side and 2 inches below the crop seed (commonly referred to as"2x2" placement).

2. Producer must have a current soil test (no more than 3 years old)

3. The amount of phosphorus fertilizer applied as a starter in the 2x2 placement shall not exceed the rate recommended by the Land Grant University (LGU).

4. The total amount of phosphorus applied shall not exceed the rate recommended by the "Land Grant University" (LGU) based on soil testing and established yield goals.

5. Soil surface disturbance must be minimized during phosphorus injection.

Layout Sketch & Drawing (Provide sketch, drawings, maps, and/or aerial photographs.)

- Geo-referenced field map with all delineated treatment areas where CSP Enhancement WQL09 is to be applied.

Adoption Requirements

This enhancement is considered adopted when all phosphorus is subsurface applied as either a 2X2 starter application or > 3 inches below the soil surface.

Documentation Requirements

1. Documentation for each treatment area (field) and year of this enhancement describing the following:
   a. Treatment acres,
   b. Target (planned) crop,
   c. Soil test results,
   d. Crop yields (both yield goals and measured yield),
   e. Phosphorus application rates/amounts and application dates for each treatment area, and
   f. Method used to inject or incorporate phosphorus.
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*:

Sims, J.T. (ed.) 2005. Phosphorus: Agriculture and the Environment. Agronomy Monograph 46. ASA, CSSA, and SSSA, Madison, WI.

Field Office Technical Guide:

eFOTG, http://www.nrcs.usda.gov/technical/efotg/

*** Some online documents may take several minutes to download.**

Sims, J.T. (ed.) 2005. Phosphorus: Agriculture and the Environment. Agronomy Monograph 46. ASA, CSSA, and SSSA, Madison, WI.

State Supplemental Information

None.

Documentation Form

Producer: _____ **Date:** _____

Tracts: _____ **County:** _____

1. Documentation for each treatment area (field) and year of this enhancement describing the following:

- **a. Treatment acres,**
- **b. Target (planned) crop,**
- **c. Soil test results,**
- **d. Crop yields (both yield goals and measured yield),**
- **e. Phosphorus application rates/amounts and application dates for each treatment area, and**
- **f. Method used to inject or incorporate phosphorus.**

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.

Field Number(s):					
Target (Planned) Crop:					
Planned Planting Date:					
Yield Goal:					
Treatment Acres:					
Actual Crop:					
Actual Planting Date:					
Crop Emergence Date:					
Measured Crop Yield:					
Phosphorus Fertilizer Applied for each treatment area:					
Application Rate of P_2O_5:					
Application Dates:					
Application Methods: (injected at least 3 inches deep or 2X2 row starter)					
Measured Yield:					

Required Documentation:

1. Map Showing where Activities are Applied
2. Soil Test Results

WSU Analytical Laboratories Database:

http://www.puyallup.wsu.edu/analyticallabs/

Commercial and Agricultural Resources:

http://extension.wsu.edu/wsprs/Pages/AgResources.aspx

Client's Acknowledgement (To be signed before the Enhancement is applied.)

By signing below, I acknowledge that I:

- **have reviewed and understand the site specific design, installation specifications and operation/maintenance requirements in this State Supplemental Sheet and have an understanding of the purpose(s) of this Enhancement;**
- **will install, operate, and maintain this Enhancement in accordance with the National Sheet, the Washington State Supplemental Sheet and the site specific specifications.**
- **will make no changes to the planned design and installation without prior written approval of the Natural Resources Conservation Service.**
- **will obtain all necessary permits and/or rights, and comply with all ordinances and laws pertaining to the installation, operation, and maintenance of this Enhancement, prior to the start of installation; and**
- **will assume responsibility for notifying all Utilities affected by the installation, operation and maintenance of this Enhancement.**

Signature	**Date**

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