



United States Department of Agriculture  
 Natural Resources Conservation Service  
 200 North High Street, Room 522  
 Columbus Ohio 43215

Prepared By:

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In Consultation with NRCS  
 Conservation Partners



## Ohio Water Quality and Energy Reduction System Waste Utilization (633)

**Payment Caps:**

Management Level I	Maximum over Life of Contract: \$ 34,900.00
Management Level II	Maximum over Life of Contract: \$ 100,300.00
Management Level III	Maximum over Life of Contract: \$ 118,900.00

Practices that work together to reduce energy consumption, maintain water quality, improve soil quality and provide fertility for crop production are to be planned and contracted together as listed below. The *Water Quality and Energy Reduction System Waste Utilization (633)* payment is NOT to be used in combination with any other *Air or Water Quality and Energy Reduction System* payment. Nor is it to be used in combination with any other federal program such as CSP or CRP on the same land. If manure is going to be applied to the contracted acres, use this conservation management system.

This system assumes adequate drainage. Practices may not be feasible without adequate subsurface drainage. If soils are not adequately drained, a systematic tile system should be considered prior to contracting this Conservation Management System.

**Base Level Activities:**

To qualify for any of these payments, the participant must be applying the following base level activities:

- 1) Must have current soil tests (no older than 3 yrs) representing all contracted acres.
- 2) Must have all gully erosion controlled.
- 3) All tile breaks will be repaired within one year of the contract being signed or prior to manure application.

**Payment Considerations:**

**(See the “Definitions and Payment Considerations” section for more specific payment considerations.)**

- 1) All supporting practices must be adopted prior to issuing the *Waste Utilization System* payment.
- 2) Manure application records must be presented to the District Conservationist (DC) for review.
- 3) If one of the *Residue and Tillage Management - Controlled Traffic* options is selected, a geo-referenced traffic map will be submitted to the DC for review prior to this payment being issued.
- 4) For *Waste Utilization System Levels II and III*, a copy of a Comprehensive Nutrient Management Plan (CNMP) developed for the entire operation receiving manure must be presented to the DC for review prior to issuing the *633 Waste Utilization* payment.
- 5) For *Waste Utilization System Level III*, a copy of the VRT nutrient management plan developed by a Certified Crop Advisor (CCA), or a Certified Professional Agronomist (CPA), including yield maps, grid or zone maps along with geo-referenced biennial soil reports will be submitted to the DC prior to issuing the *633 Waste Utilization* payment.
- 6) The participant must sign the self certification form verifying that supporting practices have been adopted and that the OH 633 Waste Utilization practice standard, the OH 590 Nutrient Management practice standard and the Comprehensive Nutrient Management Plan (CNMP) were followed on all contracted acres.

## Water Quality and Energy Reduction System, Waste Utilization Level I

### Base Level Activities:

To qualify for this system payment, the participant must be applying the following base level activities:

- 1) Must have current soil tests (no older than 3 yrs) representing all contracted acres.
- 2) Must have all gully erosion controlled.
- 3) All tile breaks will be repaired within one year of the contract being signed or prior to manure application.

**In addition to the Base Level Activities described above the following supporting practices must be applied:**

Practice payments can be contracted only if the participant has not previously adopted the practice.

See [Definitions and Payment Considerations](#) on pages 5-8 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
<b>328</b>	<b>Conservation Crop Rotation</b>	<b>AC</b>	<b>PR</b>	<b>\$7.00</b>	<b>\$1400.00</b>
	<ul style="list-style-type: none"> <li>• No back to back low residue crops without a cover crop (Wheat with stubble removed (&lt;8 inches) constitutes a low residue crop)</li> </ul>				
<b>345</b>	<b>Residue and Tillage Management, Mulch Tillage</b>	<b>AC</b>	<b>PR</b>	<b>N/A</b>	<b>N/A</b>
	<ul style="list-style-type: none"> <li>• Maintains crop residue (or utilizes cover crops) necessary to keep sheet and rill erosion rates at or below "T"</li> </ul>				
<b>590</b>	<b>Nutrient Management</b>	<b>AC</b>	<b>PR</b>	<b>N/A</b>	<b>N/A</b>
	Follow the OH 590 Nutrient Management practice standard				
<b>633</b>	<b>Waste Utilization System, Level I</b>	<b>AC</b>	<b>PR</b>	<b>\$15.00</b>	<b>\$3000.00</b>
	<p style="color: red; text-align: center;">This payment cannot be issued until all other supporting practices have been implemented. This is because this practice should account for the supporting practices of the conservation system.</p> <ul style="list-style-type: none"> <li>• Manure is applied according to the OH 633 Waste Utilization practice standard and OCES Bulletin 604</li> <li>• No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>• Manure samples will be taken and analyzed with each emptying cycle of a storage facility</li> <li>• Requires a current soil test (3 yrs or less) on all contracted fields prior to receiving manure</li> <li>• All appropriate setback distances from environmentally sensitive areas (<b>including areas of concentrated flow in the field</b>) as described on page 4 of OH 633 Waste Utilization practice standard will be observed; The DC will include an aerial photo delineating all setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>• Liquid manure is incorporated at time of application or within 24 hrs of application for solid manure (or maintains a cover of 50% or greater for surface application) (See 329 / 346 Definitions)</li> <li>• Maintains accurate application records for manure and commercial fertilizer per field on all contracted acres</li> </ul>				
<b>634</b>	<b>Waste Transfer</b>	<b>AC</b>	<b>PR</b>	<b>\$8-\$18</b>	<b>\$7200.00</b>
	<ul style="list-style-type: none"> <li>• Where phosphorous levels are above 300 lbs per acres (150ppm) manure will be transported to fields that can better utilize the nutrients. (&lt;1.9 mile = \$16.00 / ac) (2 - 4.9 miles = \$24.00 / ac) (&gt; 5 miles = \$36.00 / ac)</li> </ul>				

## Water Quality and Energy Reduction System, Waste Utilization Level II

**Base Level Activities:** To qualify for this system payment, the participant must be applying the following base level activities:

- 1) Must have current soil tests (no older than 3 yrs) representing all contracted acres.
- 2) Must have all gully erosion controlled.
- 3) All tile breaks will be repaired within one year of the contract being signed or prior to manure application.

**In addition to the Base Level Activities described above the following supporting practices must be applied:**

Practice payments can be contracted only if the participant has not previously adopted the practice.

See [Definitions and Payment Considerations](#) on pages 5-8 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
328	<b>Conservation Crop Rotation</b>	AC	PR	\$7.00	\$1400.00
	<ul style="list-style-type: none"> <li>No back to back low residue crops without a cover crop (Wheat with stubble removed (&lt;8 inches) constitutes a low residue crop)</li> </ul>				
345	<b>Option 1: Residue and Tillage Management, Mulch Tillage</b>	AC	PR	N/A	N/A
OR	<ul style="list-style-type: none"> <li>Maintains crop residue (or utilizes cover crops) necessary to keep sheet and rill erosion rates at or below "T"</li> </ul>				
329 / 346	<b>Option 2: Residue and Tillage Management</b>	AC	PR	\$15.00	\$3000.00
OR	<ul style="list-style-type: none"> <li>Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> </ul>				
329 / 346	<b>Option 3: Residue and Tillage Management with Controlled Traffic Level I</b>	AC	PR	\$40.00	\$8000.00
OR	<ul style="list-style-type: none"> <li>Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> <li>Utilizes RTK automatic steering technology for high load field traffic</li> </ul> <p>*With the exception of the small grain head (wheat and soybean) of the combine.</p>				
329 / 346	<b>Option 4: Residue and Tillage Management with Controlled Traffic Level II</b>	AC	PR	\$50.00	\$10000.00
	<ul style="list-style-type: none"> <li>Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> <li>Utilizes RTK automatic steering technology for high load field traffic</li> </ul> <p>* Includes the small grain head (wheat and soybean) of the combine.</p>				
340	<b>Cover Crops</b>	AC	PR	\$50- *\$70	\$7000.00
	<ul style="list-style-type: none"> <li>Utilizes Cover Crops (340) on a minimum of 30% of the contracted acres either                             <ul style="list-style-type: none"> <li>on yearly basis</li> <li>or over the life of the contract</li> </ul> </li> <li>Payment is based on acres of cover crops established.</li> </ul> <p>*NOTE: The \$70 per acre is only for cover crops established in corn (for grain) or soybeans prior to October 1 using aerial seeding or other method specifically designed to seed in a standing crop. Otherwise use \$50 per acre.</p>				
587	<b>Structure for Water Control (if needed)</b>	NUM	PR	\$792-\$1556	\$5000.00
	<ul style="list-style-type: none"> <li>Is recommended in all cases on tile outlets that will have manure applied</li> <li>Is required in cases where there has been a history of tile discharge of nutrients (includes inspection / pump out port with gate valve)</li> </ul>				
554	<b>Drainage Water Management (if needed)</b>	NUM	PR	\$100	\$500.00
	<ul style="list-style-type: none"> <li>Follow the OH 554 Drainage Water Management practice standard</li> </ul>				
590	<b>Nutrient Management</b>	AC	PR	N/A	N/A
	<ul style="list-style-type: none"> <li>Follow the OH 590 Nutrient Management practice standard</li> <li>A Comprehensive Nutrient Management Plan (CNMP) will be developed for acres receiving manure using MMP.</li> </ul>				
633	<b>Waste Utilization System, Level II</b>	AC	PR	\$30.00	\$6000.00
	<p style="text-align: center;">This payment cannot be issued until all other supporting practices have been implemented. This is because this practice should account for the supporting practices of the conservation system.</p> <ul style="list-style-type: none"> <li>Manure is applied according to the OH 633 Waste Utilization practice standard and OCES Bulletin 604</li> <li>No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>Manure samples will be taken and analyzed with each emptying cycle of a storage facility</li> <li>Requires a current soil test (3 yrs or less) on all contracted fields prior to receiving manure</li> <li>All appropriate setback distances from environmentally sensitive areas (<b>including areas of concentrated flow in the field</b>) as described on page 4 of OH 633 Waste Utilization practice standard will be observed; The CNMP will include an aerial photo delineating all setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>NO manure will be applied on frozen or snow covered ground</li> <li>Paths of preferential flow are disrupted prior to application of liquid manure. (See 329 / 346 Definitions)</li> <li>Liquid manure is incorporated into the top 3-5 inches of the soil at time of application or within 24 hrs of application for solid manure using an AerWay, Phoenix, or similar implement. (See 329 / 346 Definitions)</li> <li>Maintains accurate application records for manure and commercial fertilizer per field for all contracted acres</li> </ul>				
634	<b>Waste Transfer (If high P levels)</b>	AC	PR	\$16 -\$36	\$7200.00
	<ul style="list-style-type: none"> <li>Where phosphorous levels are above 300 lbs per acres (150ppm) manure will be transported to fields that can better utilize the nutrients. (&lt;1.9 mille = \$16.00 / ac) (2 - 4.9 = \$24.00 / ac) (&gt; 5 miles = \$36.00 / ac)</li> </ul>				

## Water Quality and Energy Reduction System, Waste Utilization Level III

**Base Level Activities:** To qualify for this system payment, the participant must be applying the following base level activities:

- 1) Must have current soil tests (no older than 3 yrs) representing all contracted acres.
- 2) Must have all gully erosion controlled.
- 3) All tile breaks will be repaired within one year of the contract being signed or prior to manure application.

**In addition to the Base Level Activities described above the following supporting practices must be applied:**

Practice payments can be contracted only if the participant has not previously adopted the practice.

See Definitions and Payment Considerations on pages 5-8 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
<b>328</b>	<b>Conservation Crop Rotation</b>	<b>AC</b>	<b>PR</b>	<b>\$7.00</b>	<b>\$1400.00</b>
	<ul style="list-style-type: none"> <li>• No back to back low residue crops without a cover crop (Wheat with stubble removed (&lt;8 inches) constitutes a low residue crop)</li> </ul>				
<b>345</b>	<b>Option 1: Residue and Tillage Management, Mulch Tillage</b>	<b>AC</b>	<b>PR</b>	<b>N/A</b>	<b>N/A</b>
<b>OR</b>	<ul style="list-style-type: none"> <li>• Maintains crop residue (or utilizes cover crops) necessary to keep sheet and rill erosion rates at or below "T"</li> </ul>				
<b>329 / 346</b>	<b>Option 2: Residue and Tillage Management</b>	<b>AC</b>	<b>PR</b>	<b>\$15.00</b>	<b>\$3000.00</b>
<b>OR</b>	<ul style="list-style-type: none"> <li>• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> </ul>				
<b>329 / 346</b>	<b>Option 3 Residue and Tillage Management with Controlled Traffic Level I</b>	<b>AC</b>	<b>PR</b>	<b>\$40.00</b>	<b>\$8000.00</b>
<b>OR</b>	<ul style="list-style-type: none"> <li>• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> <li>• Utilizes RTK automatic steering technology for high load field traffic</li> </ul> <p style="color: red; font-size: small;">*With the exception of the small grain head (wheat and soybean) of the combine.</p>				
<b>329 / 346</b>	<b>Option 4 Residue and Tillage Management with Controlled Traffic Level II</b>	<b>AC</b>	<b>PR</b>	<b>\$50.00</b>	<b>\$10000.00</b>
	<ul style="list-style-type: none"> <li>• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practice 329 or 346) every year of the contract</li> <li>• Utilizes RTK automatic steering technology for high load field traffic</li> </ul> <p style="color: red; font-size: small;">* Includes the small grain head (wheat and soybean) of the combine.</p>				
<b>340</b>	<b>Cover Crops</b>	<b>AC</b>	<b>PR</b>	<b>\$50-*\$70</b>	<b>\$7000.00</b>
	<ul style="list-style-type: none"> <li>• <b>Cover crops must be established using one of the following:</b> <ul style="list-style-type: none"> <li>○ All manure must be applied on a growing crop (includes cover crops)</li> <li>○ or a crop or cover crop is seeded within two weeks after the manure is applied</li> <li>○ or a slurry seeding meets this criteria</li> </ul> </li> <li>• Participant is responsible for assuring the cover crop is established</li> <li>• Payment is based on acres of cover crops established.</li> </ul> <p style="color: red; font-size: small;">*NOTE: The \$70 per acre is only for cover crops established in corn (for grain) or soybeans prior to October 1 using aerial seeding or other method specifically designed to seed in a standing crop. Otherwise use \$50 per acre.</p>				
<b>386 / 390 / 393</b>	<b>Field Border / Riparian Herbaceous Cover / Filter Strip</b>	<b>AC</b>	<b>PR</b>	<b>\$190-\$300</b>	<b>\$6000.00</b>
	See Definitions for details				
	<ul style="list-style-type: none"> <li>• A herbaceous buffer will be established along all waters of the state</li> </ul>				
<b>587</b>	<b>Structure for Water Control</b>	<b>NUM</b>	<b>PR</b>	<b>\$792-\$1556</b>	<b>\$5000.00</b>
	<ul style="list-style-type: none"> <li>• Required if technically feasible (includes inspection / pump out ports with gate valve)</li> <li>• Constructed Wetland standard (656) can be used as an alternative to (587)</li> </ul>				
<b>554</b>	<b>Drainage Water Management (Required if 587 is installed)</b>	<b>NUM</b>	<b>PR</b>	<b>\$100</b>	<b>\$500.00</b>
	<ul style="list-style-type: none"> <li>• Follow the OH 554 Drainage Water Management practice standard</li> </ul>				
<b>590</b>	<b>Nutrient Management</b>	<b>AC</b>	<b>PR</b>	<b>\$16.00</b>	<b>\$3200.00</b>
	<ul style="list-style-type: none"> <li>• Follow OH 590 Nutrient Management practice standard</li> <li>• A Comprehensive Nutrient Management Plan (CNMP) will be developed for entire operation receiving manure using MMP</li> <li>• A precision nutrient management plan using geo-referenced Variable Rate Technology grid or zone nutrient management plan will be developed by a CCA, CPA, CLM or TSP reflecting the other practices in the conservation management system above. Nutrients will be applied according to the VRT nutrient management plan. Requires biennial soil tests.</li> </ul>				
<b>633</b>	<b>Waste Utilization System, Level III</b>	<b>AC</b>	<b>PR</b>	<b>\$35.00</b>	<b>\$7000.00</b>
	<p style="color: red; font-weight: bold; font-size: small;">This payment cannot be issued until all other supporting practices have been implemented. This is because this practice should account for the supporting practices of the conservation system.</p> <ul style="list-style-type: none"> <li>• Manure is applied according to the OH 633 Waste Utilization practice standard and OCES Bulletin 604</li> <li>• No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>• Manure samples will be taken and analyzed with each emptying cycle of a storage facility</li> <li>• Requires a current soil test (3 yrs or less) on all contracted fields prior to receiving manure</li> <li>• All appropriate setback distances from environmentally sensitive areas (<b>including areas of concentrated flow in the field</b>) as described on page 4 of OH 633 Waste Utilization practice standard will be observed; The CNMP will include an aerial photo delineating setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>• NO manure will be applied on frozen or snow covered ground</li> <li>• All manure must be applied on a growing crop (includes cover crops) or not applied from Dec 1<sup>st</sup> to Mar 1<sup>st</sup>.</li> <li>• Maintains accurate application records for manure and commercial fertilizer per field for all contracted acres</li> </ul>				
<b>634</b>	<b>Waste Transfer (If high P levels)</b>	<b>AC</b>	<b>PR</b>	<b>\$16-\$36</b>	<b>\$7200.00</b>
	<ul style="list-style-type: none"> <li>• Where phosphorous levels are above 300 lbs per acres (150ppm) manure will be transported to fields that can better utilize the nutrients. (&lt;1.9 mille = \$16.00 / ac) (2 - 4.9 = \$24.00 / ac) (&gt; 5 miles = \$36.00 / ac)</li> </ul>				



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## Ohio Water Quality and Energy Reduction System Waste Utilization (633) Definitions and Payment Considerations

### 328 - Conservation Crop Rotation

**Definition:** Growing crops in a recurring sequence on the same field.

In order to receive a payment for this supporting practice, there needs to be a significant change from the rotation the producer is currently using. Examples of change would be 1) Changing from a corn-soybean rotation to a corn-soybean-wheat rotation 2) Substituting high residue crops for low residue crops 3) Utilizing cover crops after low residue crops such as soybeans. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer will self certify the fields and crops used each year of the contract. This is subject to spot checks.

### 329 / 346 - Residue and Tillage Management, NoTill, StripTill, RidgeTill

**Definition:** Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities to only those necessary to place nutrients, condition residue and plant crops.

The producer has options under this practice. The producer can utilize NoTill, StripTill, or RidgeTill as a stand alone practice, or can combine it with controlled traffic. If one of the controlled traffic options is chosen, a geo-referenced map of each field must be developed showing the traffic pattern for all high load traffic. RTK / GPS auto steer technology must be utilized throughout the life of the contract. RTK systems only will be considered. The producer must submit a copy of the bills to the DC showing purchase or rental of RTK equipment.

In order to receive a payment for this supporting practice, there needs to be a significant change from the type of tillage the producer is currently using. Examples would be 1) converting from a chisel / disk system to NoTill or 2) converting from rotational NoTill to continuous NoTill. To qualify for payment under this practice, the tillage system must be NoTill, StripTill, or RidgeTill every year for the life of the contract. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer will self certify that NoTill, StripTill, or RidgeTill was used each year of the contract. This is subject to spot checks.

**For the purposes of this Water Quality and Energy Reduction System:** Surface tillage using an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less), can be used to disrupt preferential flow prior to liquid manure application or to incorporate fertilizer. Soil structure below 3-5 inches should be left undisturbed. Full width tillage is not authorized for anything but disruption of preferential flow or nutrient incorporation. If surface tillage is used, the STIR value must be kept below 20.

## Definitions and Payment Considerations (Continued)

### 340 - Cover Crops

**Definition:** Crops including grasses and legumes for seasonal cover and other conservation purposes.

In order to receive a payment for this supporting practice, there needs to be a significant change from system the producer is currently using. If the producer has a history of utilizing cover crops successfully in a conservation system, then payment cannot be authorized. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. Cover Crops must be utilized on 30%-50% of the contracted acres either on yearly basis or over the life of the contract.

**NOTE:** The higher payment per acre is only for cover crops established in corn (for grain) or soybeans prior to October 1 using aerial seeding or other method specifically designed to seed in a standing crop. Otherwise use the lower rate per acre. Payment is based on acres of cover crops planted. The producer is responsible for making sure the cover crop is successfully established. The producer will self certify each year the location, acres and type of cover crops established. This is subject to spot checks.

### 386 / 390 / 393 - Field Border / Riparian Herbaceous Cover / Filter Strip

**Definition:** Grasses / legumes and / or forbs planted to improve water quality and wildlife habitat.

In order to receive payment for this supporting practice, an herbaceous buffer must be newly established as per the OH 386 - 390 or 393 practice standards along all waters of the state. See standards for width requirements. Payments cannot be made for existing buffers. This is a one time payment to establish the practice. As an alternative, these buffers can be enrolled in CRP; however the producer cannot receive payment under both CRP and EQIP for the same practice on the same land. Existing buffers are credited but cannot receive a payment for establishment.

### 587 - Structure for Water Control

**Definition:** A structure at the end of a tile or subsurface drain. It is utilized to control the water elevation or temporarily block water flow. It must have an inspection port for monitoring and pumping water if needed to maintain water quality.

These are installed if feasible as determined by an NRCS engineer. This *Water Quality and Energy Reduction System* was developed for up to five structures. Payment will vary depending on the size of the structure needed. This is a one time payment for installing the structure.

### 554 - Drainage Water Management

**Definition:** The process of managing water discharges from 587 Structures for Water Control subsurface agricultural drainage systems.

In order to receive a payment for this supporting practice, a 587 Structure for Water Control must have been newly installed as part of this same contract. If no structure was installed then payment is not authorized. Payment can be made for up to five structures. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer will self certify that the structure was managed as designated. This is subject to spot checks.

## Definitions and Payment Considerations (Continued)

### Nutrient Management Plan

**Definition:** A plan that documents the amount, source, placement, form and timing of the application of nutrients and soil amendments. The Ohio 590 Nutrient Management practice standard is the guidance to be used in developing the plan. The purposes of a nutrient management plan are: 1) To adequately supply nutrients for plant production. 2) To properly utilize manure or organic by-products as a plant nutrient source. 3) To minimize agricultural nonpoint source pollution of surface and ground water resources. 4) To maintain or improve the physical, chemical and biological condition of soil.

**NOTE:** The nutrient management plan should incorporate the supporting practices of this conservation system. Under Level III of this *Water Quality and Energy Reduction System*, a Variable Rate Technology (VRT) Grid or Zone nutrient management plan must be developed by a CCA, CPA, CLM or TSP. The Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer will self certify that the nutrient management plan was followed. This is subject to spot checks.

### Soil Testing

**Definition:** A soil test is the analysis of a soil sample to determine nutrient content, composition and other characteristics. Tests are usually performed to measure pH, fertility and indicate deficiencies that need to be remedied.

A **regular soil test** is a composite of 15-20 soil samples that are combined and mixed thoroughly. A sample is then sent for analysis. The report from the analysis is used to determine the rate of lime and nutrients based on the soil test values and the crop to be grown. The composite sample must represent 25 acres or less.

### Precision Nutrient Management Plan using VRT – or Variable Rate Technology

A **Grid Sampling** divides the field into square grids representing 2 - 6 acres. Several soil samples are pulled from each square in the grid and combined to form a composite sample representing that square. Fertilizer can then be varied across the grid applying just the nutrients needed in each square. The grids cannot represent more than 6 acres. **If a grid sampling method is utilized, the Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued.**

**Management Zones** is a system of dividing up the field to try and group similar soil characteristics as well as other factors of interest. For example, a common system of management zones overlays soils maps with crop yield maps. Polygons are then drawn around areas of the field that have similar soils and crop yield characteristics. Several soil samples are pulled from each zone and combined to form a composite sample representing that zone. Each zone must represent 12 acres or less. These zones are located using GPS technology. Fertilizer can then be varied across the zones applying just the nutrients needed in each zone. **If a management zone sampling is utilized, the Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued.**

## Definitions and Payment Considerations (Continued)

### CNMP - Comprehensive Nutrient Management Plan

**Definition:** Comprehensive Nutrient Management Plans (CNMPs) are conservation plans unique to livestock operations. These plans document practices and strategies adopted by livestock operations to address natural resource concerns related to soil erosion, water quality, livestock manure and land treatment practices. It is developed to include all sources of nutrients... manure as well as commercial fertilizer. Comprehensive Nutrient Management Plans should incorporate the supporting practices of this conservation system.

The development of a CNMP begins with a comprehensive engineering and conservation planning resource assessment of current site conditions by an NRCS engineer. Management options and structural alternatives are developed to address resource concerns identified during the assessment. In Ohio, the CNMP must be developed using the Purdue Manure Management Planner software (MMP). The CNMP includes the assessment of the headquarters by an NRCS engineer as well as land treatment and nutrient management practices.

The minimum requirements of a CNMP are contained in the Statement of Work found on the Ohio NRCS website [www.oh.nrcs.usda.gov](http://www.oh.nrcs.usda.gov) in eFOTG Section IV. Individuals who develop and/or approve CNMPs must be certified by Ohio NRCS or through the [TechReg](#) website.

### CNMPs are not required under the following "lower risk" circumstances:

1. Livestock heavy use pads installed under practice standard 561.
2. Pasture based operations with no manure storage structure or winter feeding area.
3. Livestock operations with "solid manure handling and storage" that meet all of the following criteria:
  - a. There is no settling basin with a constructed filter strip involved,
  - b. There is less than 350 tons of solid manure collected annually,
  - c. There is at least one acre available for application for each 4 tons of manure collected,
  - d. The farm headquarters and the land that will have manure applied are under a conservation management system.

Instead of a CNMP for these operations, an "operation and maintenance plan" for the planned practices (heavy use pads and manure storage structures) needs to be developed that outlines how the facility will be operated and guidelines on how and where the manure will be applied. A sample of a management plan is provided in the FOTG, Section I, Software and Plan Formats.

If the CNMP is developed by a TSP, a payment for CNMP development can be made under a separate contract.

### Tri-State Fertility Guide:

**Definition:** The Tri-State Fertility Guide (Extension Bulletin E-2567), is a publication developed by Ohio, Indiana, and Michigan. Among other things, it provides lime and fertilizer recommendations for corn, soybean, small grain, and meadow crops. The Tri-State Fertility Guide should be used to set the **maximum** rate of fertilizer to be used based on soil test values and crop removal rates.

### Controlled Traffic Farming (CTF):

**Definition:** Controlled traffic farming is confining all equipment in the farming system to a set of wheel tracks that are used year after year. The result limits compaction to the wheel tracks and reduces soil compaction outside of the tracks for crop growth. Studies have shown that in conventional farming, up to 85% of the field becomes compacted from heavy machinery. Compaction causes a decreased soil infiltration, a decrease air and water holding capacity in the soil, higher water runoff and soil erosion, and decreased yields.

Controlled Traffic Farming requires modifying equipment so that wheel widths match, allowing tires to run on the same permanent wheel tracks. Operators must commit to driving down the same tramlines for each field operation. The most effective way is to use a RTK satellite guided, or autosteer system that ensures accuracy.

**NOTE:** If a controlled traffic option is chosen as part of this Water Quality and Energy Reduction System, a GIS map showing the traffic pattern, as well as bills showing the rental or purchase of RTK autosteer equipment must be presented to the DC before payment will be issued. RTK / GPS auto steer technology must be utilized throughout the life of the contract. RTK systems only will be considered. The producer must submit a copy of the bills to the DC showing purchase or rental of RTK equipment. The producer will self certify that the controlled traffic plan was followed. This is subject to spot checks.

## Definitions and Payment Considerations (Continued)

### 633 - Waste Utilization

**Definition:** Using agricultural wastes such as manure and wastewater or other organic residues for the purposes of protecting water quality, maintaining air quality, providing nutrients for crop production, and improving or maintaining soil quality. **This payment cannot be issued until the supporting practices have been implemented. This is because this practice is dependant on the supporting practices of the conservation system.**

In order to receive a payment for this practice, the OH 633 Waste Utilization and the OH 590 Nutrient Management practice standards must be followed. In addition, there are other requirements under each level of Waste Utilization that must be followed as listed:

Management Level I	Management Level II	Management Level III
<ul style="list-style-type: none"> <li>No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>Manure samples will be taken and analyzed with each emptying cycle of a storage facility.</li> <li>Requires a current soil test (3 yrs or less) on all contracted fields prior to receiving manure</li> <li>All appropriate setback distances from environmentally sensitive areas <b>(including areas of concentrated flow in the field)</b> as described on page 5 of OH 633 Waste Utilization practice standard will be observed; NRCS will provide the participant with an aerial photo delineating all setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>Liquid manure is incorporated at time of application or within 24 hrs of application for solid manure (or maintains a cover of 50% or greater for surface application)</li> <li>Maintains accurate application records per field on all contracted acres</li> </ul>	<ul style="list-style-type: none"> <li>No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>Manure samples will be taken and analyzed with each emptying cycle of a storage facility.</li> <li>Requires a current soil test (3 yrs or less) on all contracted fields prior to receiving manure</li> <li>All appropriate setback distances from environmentally sensitive areas <b>(including areas of concentrated flow in the field)</b> as described on page 4 of OH 633 Waste Utilization practice standard will be observed; The CNMP will include an aerial photo delineating all setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>NO manure will be applied on frozen or snow covered ground</li> <li><b>Surface tillage using an AerWay, Phoenix or similar implement will be used to prevent preferential flow prior to liquid manure application.</b></li> <li><b>Liquid manure is incorporated into the top 3-5 inches of the soil at time of application or within 24 hrs of application for solid manure using an AerWay, Phoenix, or similar implement.</b> (See 329 / 346 Definitions)</li> <li>Maintains accurate application records per field for all contracted acres</li> <li><b>A Comprehensive Nutrient Management Plan (CNMP) will be developed for entire operation receiving manure using the Purdue MMP software. The supporting practices must be a component of the CNMP.</b></li> </ul>	<ul style="list-style-type: none"> <li>No additional phosphorous (manure or commercial fertilizer) will be applied on fields that have phosphorous soil test levels higher than 300 pounds per acre (150 ppm)</li> <li>Manure samples will be taken and analyzed with each emptying cycle of a storage facility.</li> <li>All appropriate setback distances from environmentally sensitive areas <b>(including areas of concentrated flow in the field)</b> as described on page 4 of OH 633 Waste Utilization practice standard will be observed; The CNMP will include an aerial photo delineating all setbacks for fields receiving manure. The participant will not apply manure to these setback areas.</li> <li>NO manure will be applied on frozen or snow covered ground</li> <li><b>All manure must be applied on a growing crop (includes cover crops) or not applied from Dec 1<sup>st</sup> to Mar 1<sup>st</sup>.</b></li> <li>Maintains accurate application records per field for all contracted acres</li> <li>A Comprehensive Nutrient Management Plan (CNMP) will be developed for entire operation receiving manure using the Purdue MMP software. The supporting practices must be a component of the CNMP.</li> <li><b>A geo-reference grid or zone nutrient management plan will be developed by a CCA, CPA, CLM or TSP for entire operation receiving manure.</b></li> <li><b>Geo-referenced biennial soil tests are taken and all nutrients are applied using Variable Rate Technology (VRT) according to the nutrient management plan above.</b></li> </ul>

**NOTE:** Under Level II and Level III of this *Water Quality and Energy Reduction System*, a Comprehensive Nutrient Management Plan (CNMP) will be developed for the entire operation receiving manure. Under Level III a geo-referenced grid or zone nutrient management plan will be developed by a CCA or CPA for the entire operation receiving manure. CNMPs as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 633 Waste Utilization payment being issued. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer will self certify that the CNMP was followed. This is subject to spot checks.