

Environmental Quality Incentives Program
Fiscal Year 2013 Edge-of-Field Water Quality Monitoring
Practice Payment Schedule

Conservation Crop Rotation

Code: 328

Reporting Unit: Acre

Definition:

Growing crops in a recurring sequence on the same field.

Purpose:

This practice may be applied as part of a conservation management system to support one or more of the following:

- Reduce sheet and rill erosion
- Reduce soil erosion from wind
- Maintain or improve soil organic matter content
- Manage the balance of plant nutrients
- Improve water use efficiency
- Manage saline seeps
- Manage plant pests (weeds, insects, and diseases)
- Provide food for domestic livestock
- Provide food and cover for wildlife

Conditions Where Practice Applies:

This practice applies to all land where crops are grown, except this standard does not apply to pastureland, hayland, or other land uses where crops are grown occasionally only to facilitate renovation or re-establishment of perennial vegetation.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
Standard Rotation This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 160-acre cropland farm. Crops in benchmark rotation will normally include wheat, sorghum, sunflowers, etc. and may include a fallow period. No foregone income is included. Cost represents typical situations for conventional (non-organic) producers. A minimum of one crop will be added to the benchmark rotation, and a minimum of 3 crops in rotation are required.	Ac	\$10.42	\$12.50
Standard Rotation, high value crop This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation on a typical 160-acre cropland farm. Foregone income is included due to lost crop yield and income by adding an additional crop into the rotation. Crops in benchmark rotation will normally include corn and/or soybeans. Cost represents typical situations for conventional (non-organic) producers. A minimum of one crop will be added to the benchmark rotation, and a minimum of 3 crops in rotation are required.	Ac	\$24.47	\$24.47

Limitations:

1. Monitoring will focus on rotations with a minimum of three different crops and/or at least 2 years in perennial/multi-year species.
2. Practice payment will be limited to the conservation practice payment cap (\$2,500), up to the maximum number of payments per policy.

Documentation:

Producer self-certification permitted.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Constructed Wetland

Code: 656

Reporting Unit: Acre

Definition:

An artificial ecosystem with hydrophytic vegetation for water treatment.

Purpose:

For treatment of wastewater and contaminated runoff from agricultural processing, livestock, and aquaculture facilities, or for improving the quality of storm water runoff or other water flows lacking specific water quality discharge criteria.

Conditions Where Practice Applies:

Constructed wetlands for the purpose of wastewater treatment apply where a constructed wetland is a component of an agricultural wastewater management system. Constructed wetlands for the purpose of water quality improvement apply where wetland effluent is not required to meet specific water quality discharge criteria. This standard should not be used in lieu of NRCS CPs 657, Wetland Restoration; 658, Wetland Creation; or 659, Wetland Enhancement, when the main purpose is to restore, create, or enhance wetland functions other than wastewater treatment or water quality improvement.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Large (i.e., > 0.5 ac)	Installation of a large constructed wetland, greater than 0.5 acre in size, to filter the wastewater from a confined animal operation. The installation includes the earthwork; native and/or organic wetland vegetation establishment; and soil, water, and plant tissue sampling as required by the operation plan. The area for payment will be the acres of wetland constructed as designed.	Ac	\$7,895.83	\$9,474.99
Large > 1.0 ac	Installation of a large constructed wetland, greater than 1.0 acre in size, to filter the runoff from cropland. The installation includes the earthwork and native and/or organic wetland vegetation establishment. The area for payment will be the acres of wetland constructed as designed.	Ac	\$6,191.89	\$7,430.27
Medium (i.e., 0.1 to 0.5 ac)	Installation of a constructed wetland, 0.1 to 0.5 acre in size, to filter the wastewater from a confined animal operation. The installation includes the earthwork; native and/or organic wetland vegetation establishment; and soil, water, and plant tissue sampling as required by the operation plan. The area for payment will be the acres of wetland constructed as designed.	Ac	\$11,299.77	\$13,559.72
Small (i.e., < 0.1 ac)	Installation of a small constructed wetland, less than 0.1 acre in size, to filter the wastewater from a confined animal operation. The installation includes the earthwork; native and/or organic wetland vegetation establishment; and soil, water, and plant tissue sampling as required by the operation plan. The area for payment will be the square feet of wetland constructed as designed.	SqFt	\$0.50	\$0.60

Limitations:

- Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).

Documentation:

The area used in design of wetland and completed table of quantities on as-built plan.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.

Cover Crop

Code: 340

Reporting Unit: Acre

Definition:

Grasses, legumes, forbs, or other herbaceous plants established for seasonal cover and conservation purposes.

Purpose:

- Reduce erosion from wind and water
- Sequester carbon in plant biomass and soils to increase soil organic matter content
- Capture and recycle excess nutrients in the soil profile
- Promote biological nitrogen fixation
- Increase biodiversity
- Weed suppression
- Provide supplemental forage
- Soil moisture management
- Reduce particulate emissions into the atmosphere

Conditions Where Practice Applies:

On all lands requiring vegetative cover for natural resource protection.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
Cover Crop—Multiple Species Typically a small grain or small grain/legume mix (may also use forage sorghum, radishes, turnips, buckwheat, etc.) will be planted as a cover crop immediately after harvest of a row crop and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved chemical or mechanical method a minimum of 3 weeks prior to planting the subsequent crop.	Ac	\$73.88	\$88.65
Cover Crop—Single Species Typically a cool season small grain such as rye or wheat will be planted as a cover crop immediately after harvest of a row crop and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using an approved chemical or mechanical method a minimum of 3 weeks prior to planting the subsequent crop. This scenario shall also be used for cover crops planted prior to permanent cover being established.	Ac	\$58.97	\$70.76
Legume—N Fixation A legume will be planted as a cover crop immediately after harvest of a row crop and will be followed by a row crop that will utilize fixed nitrogen and cover crop biomass as a mulch. This scenario assumes that seed will be planted with a no-till drill. Legume seeds must be inoculated with the proper inoculant prior to planting. The cover crop should be allowed to reach early- to mid-bloom before it is terminated using an approved chemical or mechanical method in order to maximize nitrogen fixation. The legume will promote biological nitrogen fixation and reduce energy use by reducing the need for commercial nitrogen fertilizer in following crops.	Ac	\$47.72	\$57.26

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500), up to the maximum number of payments per policy.

Documentation:

Form KS-ECS-4, Grass Seeding.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Diversion

Code: 362

Reporting Unit: Feet

Definition:

A channel constructed across the slope generally with a supporting ridge on the lower side.

Purpose:

This practice may be applied as part of a resource management system to support one or more of the following purposes:

Break up concentrations of water on long slopes, on undulating land surfaces, and on land that is generally considered too flat or irregular for terracing.

Divert water away from farmsteads, agricultural waste systems, and other improvements.

Collect or direct water for water-spreading or water-harvesting systems.

Increase or decrease the drainage area above ponds.

Protect terrace systems by diverting water from the top terrace where topography, land use, or land ownership prevents terracing the land above.

Intercept surface and shallow subsurface flow.

Reduce runoff damages from upland runoff.

Reduce erosion and runoff on urban or developing areas and at construction or mining sites.

Divert water away from active gullies or critically eroding areas.

Supplement water management on conservation cropping or stripcropping systems.

Conditions Where Practice Applies:

This practice applies to all cropland and other land uses where surface runoff water control and or management is needed.

It also applies where soils and topography are such that the diversion can be constructed and a suitable outlet is available or can be provided.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
Diversion A diversion installed with a ridge and channel to divert runoff away from farmsteads, gullies, critical erosion areas, construction areas or other sensitive areas. The volume for payment is the cubic yards of earthfill in the installed diversion.	CuYd	\$2.26	\$2.71
Diversion—WSF A diversion installed to divert a stream around an existing animal feeding operation. The volume for payment is the cubic yards of excavation in the installed diversion.	CuYd	\$2.81	\$3.37

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500)

Documentation:

Forms KS-ENG-8, Diversion - 362 (Gradient) and KS-ENG-36, Diversion - 362 (Level); checkout notes; completed table of quantities on as-built plans

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Edge-of-Field Water Quality Monitoring - Data Collection and Evaluation

Code: 201

Reporting Unit: Each

Definition:

Water quality monitoring and evaluation under this conservation activity standard are the actions and activities, using acceptable tools and protocols, by which a producer will measure the effectiveness of conservation practices and systems. Evaluation of conservation practice effectiveness through edge-of-field monitoring will lead to a better understanding of constituent loading and will assist NRCS and participants in adapting or validating the application of conservation measures.

Purpose:

- Evaluate the effectiveness of a practice or system of practices in reducing concentrations and/or loads of targeted constituents.
- Use evaluation techniques to acquire insight about existing land management and where applicable, institute change to achieve a future desired condition.
- Collect site specific edge-of-field water quality data to calibrate, validate, and verify predictive models.

Conditions Where Practice Applies:

This conservation activity applies to all land uses where conservation practices are or will be addressing surface and subsurface drainage water quality, and there is a need to determine the effects and performance of applied conservation practices. The pollutant(s) to be measured at the edge-of-field must be tied to a water quality constituent of concern for the associated receiving stream or water body. This ties the resource concern back to the planning process and promotes a systems approach to conservation.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Data Collect Surface Year 1-QAPP	This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site with an average of 20 samples per year per station. The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$16,701.82	\$20,042.19
Data Collect Surface Year 2+	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 20 per year for surface systems. The data will be transferred through semi-annual submittal and annual report which include some preliminary annual analysis. This scenario will normally be used in year 2 to next to the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$11,708.17	\$14,049.81

Data Collect Surface Last Year	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and one treatment site with an average of 20 samples per year per station. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$14,028.97	\$16,834.77
Data Collect Tile Year 1- QAPP	This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and one treatment site with an average of 40 samples per year per station. The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$26,669.40	\$32,003.28
Data Collect Tile Year 2+	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and one treatment site. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 40 per year for subsurface systems. The data will be transferred through semi-annual submittal and annual report, which include some preliminary annual analysis. This scenario will normally be used in year 2 to next to the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$21,675.75	\$26,010.90
Data Collect Tile Last Year	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and one treatment site with an average of 40 samples per year per station. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submitall and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$23,996.55	\$28,795.86

Data Collect Surface Year 1-QAPP with two treatment Sites	This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites with an average of 20 samples per year per station. The scenario requires the creation of a survey to site a monitoring station, preparation of monitoring plan and a quality assurance project plan to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$22,909.24	\$27,491.09
Data Collect Surface Year 2+ with two treatment sites	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 20 per year for each surface system. The data will be transferred through semi-annual submittal and annual report, which include some preliminary annual analysis. This scenario will normally be used in year 2 to next to the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$16,579.17	\$19,895.00
Data Collect Surface Last Year with two treatment sites	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for surface run-off for one control and two treatment sites with an average of 20 samples per year per station. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$20,060.37	\$24,072.44
Data Collect Tile Year 1 with two treatment sites and QAPP	This practice scenario provides for the design and use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and two treatment sites with an average of 40 samples per year per station. The scenario requires the creation of a survey to site monitoring stations, preparation of monitoring plan and a quality assurance project plan (QAPP) to detail how data will be collected, handled and analyzed, provides for the data collection, analysis, semiannual report, and annual report. This scenario will normally be used in year 1 of the contract when a monitoring plan and QAPP need to be prepared prior to installation under Edge-of-Field Water Quality Monitoring - System Installation (202). THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$36,877.52	\$44,253.02

Data Collect Tile Year 2+ with two treatment sites	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and two treatment sites. The scenario requires the collection and analysis of edge-of-field water quality data with an average sample collection of 40 per year for each subsurface system. The data will be transferred through semi-annual submittal and annual report, which include some preliminary annual analysis. This scenario will normally be used in year 2 to next to the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$30,547.44	\$36,656.93
Data Collect Tile Last Year with two treatment sites	This practice scenario provides for the use of an edge-of-field WQ monitoring station(s) for tile or subsurface drainage run-off for one control and two treatment sites with an average of 40 samples per year per station. The scenario requires the collection and analysis of edge-of-field water quality data along with a comprehensive report to statistically prove relationship between select conservation practices and water quality. The data will be transferred through semi-annual submittal and annual report and a comprehensive report of practice effectiveness. This scenario will be used in the last year of monitoring. THIS IS PLACED IN A PAIRED SITUATION IF THE CONTROL AND TREATMENT ARE ON DIFFERENT LANDOWNERS FIELDS THEN A JOINT CONTRACT WILL BE NECESSARY.	Ea	\$34,028.64	\$40,834.37

Limitations:

Documentation:

Follow all requirements as identified in the standards document titled NATURAL RESOURCES CONSERVATION SERVICE EDGE-OF-FIELD WATER QUALITY MONITORING DATA COLLECTION AND EVALUATION CONSERVATION ACTIVITY (Code 201). The document is in Section I - Water Quality Monitoring Activities of the electronic Field Office Technical Guide (FOTG) for Kansas.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Edge-of-Field Water Quality Monitoring - System Installation

Code: 202

Reporting Unit: Each

Definition:

This conservation activity standard addresses the system installation associated with edge-of-field water quality monitoring.

Purpose:

Provide criteria for the installation of water quality monitoring system necessary to collect data for:

- o Evaluating conservation practice effectiveness
- o Field scale model validation
- o On-farm adaptive management

Conditions Where Practice Applies:

This conservation activity applies to all land uses where conservation practices are or will be addressing surface and subsurface drainage water quality, and there is a need to determine the effects and performance of applied conservation practices. The pollutant(s) to be measured at the edge-of-field must be tied to a water quality constituent of concern for the associated receiving stream or water body. This ties the resource concern back to the planning process and promotes a systems approach to conservation.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
System Installation-Surface	This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with surface runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for southern latitudes where winter time heating is not required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, and a berm or other directional flow structure to guide the runoff to a sampling flume.	Ea	\$16,273.68	\$19,528.42
System Installation-Surface Cold Climate	This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with surface runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions, and a berm or other directional flow structure to guide the runoff to a sampling flume.	Ea	\$17,304.93	\$20,765.92

System Installation-Tile	This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with tile or other subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for southern latitudes where winter time heating is not required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, an area velocity sensor for pipe flow and estimation of submerged flow, and a berm or other directional flow structure to guide the runoff to a sampling flume.	Ea	\$16,986.18	\$20,383.42
System Installation-Tile Cold Climate	This edge-of-field water quality monitoring system is applicable to a single control or treatment site that has a field defined with tile or other subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, an area velocity sensor for pipe flow and estimation of submerged flow, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions and a berm or other directional flow structure to guide the runoff to a sampling flume.	Ea	\$17,792.43	\$21,350.92
System Installation- Above&Below	This edge-of-field water quality monitoring system is applicable where a conservation practice has a pre- and post treatment area in the same field drainage with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for southern latitudes where winter time heating is not required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, and a berm or other directional flow structure to guide the runoff to a sampling flume. The actual installation will differ on the subsurface flow by allowing a smaller precalibrated flume with the addition of a velocity sensor meter as in the tile alternative.	Ea	\$31,309.86	\$37,571.83

System Installation- Above&Below cold climate	This edge-of-field water quality monitoring system is applicable where a conservation practice has a pre- and post treatment area in the same field drainage with surface or subsurface drainage runoff that can be captured and sampled at the edge of a field before entering a ditch or receiving water body or water course. The component monitoring equipment are associated with a typical system for northern latitudes where winter time heating is required for sampling. It will allow for installation of automated sampling data collection system with protective housing to reduce potential for vandalism, battery backup for operation during periods when electricity is down or solar panels are not creating an electrical current, a calf hut or other structure with heat is required over the flume to allow sampling under northern latitude winter conditions, and a berm or other directional flow structure to guide the runoff to a sampling flume. The actual installation will differ on the subsurface flow by allowing a smaller pre-calibrated flume with the addition of a velocity sensor meter as in the tile alternative.	Ea	\$33,372.36	\$40,046.83
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Limitations:

Documentation:

Follow all requirements as identified in the standards document titled NATURAL RESOURCES CONSERVATION SERVICE EDGE-OF-FIELD WATER QUALITY MONITORING SYSTEM INSTALLATION CONSERVATION ACTIVITY (Code 202). The document is in Section I - Water Quality Monitoring Activities of the Electronic Field Office Technical Guide (Efotg) for Kansas.

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Filter Strip

Code: 393

Reporting Unit: Acre

Definition:

A strip or area of herbaceous vegetation that removes contaminants from overland flow.

Purpose:

Reduce suspended solids and associated contaminants in runoff. Reduce dissolved contaminant loadings in runoff. Reduce suspended solids and associated contaminants in irrigation tailwater.

Conditions Where Practice Applies:

Filter strips are established where environmentally sensitive areas need to be protected from sediment, other suspended solids, and dissolved contaminants in runoff.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Native Cool (includes forgone income)	A strip or area of herbaceous vegetation situated between cropland, grazing land, or disturbed land and sensitive areas. Practice includes seedbed preparation and planting of approved species. The area of the filter strip is taken out of production.	Ac	\$201.91	\$227.69
Native Cool with Shaping (includes forgone income)	A strip or area of herbaceous vegetation, native species, situated between cropland, grazing land, or disturbed land and sensitive areas. Practice includes seedbed preparation, land shaping and planting of approved species. The area of the filter strip is taken out of production. This includes any shaping with earthmoving equipment needed to ensure even entry of water into the strip.	Ac	\$323.51	\$373.60
Native Warm (includes forgone income)	A strip or area of native herbaceous vegetation situated between cropland, grazing land, or disturbed land and sensitive areas. Practice includes seedbed preparation and planting of native species. The area of the filter strip is taken out of production.	Ac	\$168.15	\$187.17
Native Warm with Shaping (includes forgone income)	A strip or area of native herbaceous vegetation situated between cropland, grazing land, or disturbed land and sensitive areas. Practice includes seedbed preparation and planting of native species. The area of the filter strip is taken out of production. This includes any shaping with earthmoving equipment needed to ensure even entry of water into the strip.	Ac	\$289.74	\$333.07

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500)

Documentation:

Form KS-ECS-393, Filter Strip - 393

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Grade Stabilization Structure

Code: 410

Reporting Unit: Number

Definition:

A structure used to control the grade and head cutting in natural or artificial channels.

Purpose:

This standard applies to all types of grade stabilization structures, including a combination of earth embankments and principal spillways and full-flow or detention-type structures. This standard also applies to channel side-inlet structures installed to lower the water from a field elevation, a surface drain, or a waterway to a deeper outlet channel. It does not apply to structures designed to control the rate of flow or to regulate the water level in CP 587, Structure for Water Control. The purpose of this standard is to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advance of gullies, and to enhance environmental quality and reduce pollution hazards.

Conditions Where Practice Applies:

In areas where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Special attention shall be given to maintaining or improving habitat for fish and wildlife where applicable.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Concrete Block Chute	Installation using small concrete masonry units or large modular concrete block to form a chute or drop structure. The area for payment is the square feet of surface area of the installed blocks and includes earthwork, geotextile, and bedding. For small blocks, the area is calculated using the surface area of a single block times the number of blocks. For large modular blocks, the area is calculated using the surface area of a single block times a 2.5 correction factor times the number of blocks.	SqFt	\$4.26	\$5.12
Concrete Box Drop	Installation of a concrete box drop or concrete terrace outlet structure including all associated items using standard approved designs. The volume for payment will be the cubic yards of concrete installed in the structure not including aprons or curbs.	CuYd	\$605.61	\$726.73
Embankment, No Principal Spillway	A grade stabilization structure consisting of an embankment dam without a principal spillway pipe, a low flow tube of 6 inches or less, and other appurtenances. The volume for payment will be the cubic yards of embankment, which includes the earthfill in the cutoff trench.	CuYd	\$3.00	\$3.60
Embankment, Pipe < 24 inches	A grade stabilization structure consisting of an embankment, principal spillway pipe with diameter smaller than 24", drop inlet, and other appurtenances. The volume for payment will be the cubic yards of embankment, which includes the earthfill in the cutoff trench.	CuYd	\$3.65	\$4.38
Embankment, Pipe ≥ 24 inches	A grade stabilization structure consisting of an embankment, principal spillway pipe with a diameter 24" or greater, drop inlet, and other appurtenances. The volume for payment will be the cubic yards of embankment, which includes the earthfill in the cutoff trench.	CuYd	\$3.36	\$4.03
Gabion Rock Drop Structures	Installation of a chute or drop structure formed by gabion mattresses or baskets. The volume for payment will be the cubic yards of rock used in the baskets or mattresses installed and includes all bedding and all other materials.	CuYd	\$125.55	\$150.66

Rock Chute	Installation of a chute structure constructed of rock riprap with a geotextile base. The volume for payment will be the cubic yards of rock installed and includes all bedding and other materials.	CuYd	\$47.14	\$56.56
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Limitations:

1. Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).

Documentation:

Forms KS-ENG-41, Grade Stabilization Structure - 410 (Concrete Terrace Outlet Structure); KS-ENG-443(JS), Concrete Block Lined Chute; KS-ENG-445, Reinforced Concrete Box Drop Spillway; KS-ENG-400, Pond Cover Sheet; PreCast Concrete Block Field Sheet; and completed table of quantities on as-built plan for gabion structures.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.

Grassed Waterway

Code: 412

Reporting Unit: Acre

Definition:

A natural or constructed channel that is shaped or graded to required dimensions and established with suitable vegetation.

Purpose:

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

To convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding

To reduce gully erosion

To protect/improve water quality

Conditions Where Practice Applies:

In areas where added water conveyance capacity and vegetative protection are needed to control erosion resulting from concentrated runoff and where such control can be achieved by using this practice alone or combined with other conservation practices.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
Grassed Waterway with Checks	Ac	\$2,232.80	\$2,679.36
Waterway < 25 SqFt	Ac	\$1,462.34	\$1,754.81
Waterway > 25 SqFt	Ac	\$1,793.46	\$2,152.15

Limitations:

1. Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).

Documentation:

Forms KS-ENG-39a, 412 (Trapezoidal) Check Out; KS-ENG-40a, Grassed Waterway (Parabolic) Check Out; completed table of quantities on as-built plans.

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Irrigation Water Management

Code: 449

Reporting Unit: Acre

Definition:

The process of determining and controlling the volume, frequency, and application rate of irrigation water in a planned, efficient manner.

Purpose:

- Manage soil moisture to promote desired crop response.
- Optimize use of available water supplies.
- Minimize irrigation-induced soil erosion.
- Decrease non-point source pollution of surface and groundwater resources.
- Manage salts in the crop root zone.
- Manage air, soil, or plant micro-climate.
- Proper and safe chemigation or fertigation.
- Improve air quality by managing soil moisture to reduce particulate matter movement.

Conditions Where Practice Applies:

This practice is applicable to all irrigated lands. An irrigation system adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, etc.) must be available and capable of applying water to meet the intended purpose(s).

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
IWM, Advanced Implementation of a high intensity irrigation water management system for producers using a water budget method with advanced methods of determining irrigation water applied, estimated crop evapotranspiration, continuous soil moisture data, and crop temperature stress monitoring. Typically soil moisture is determined by automated soil moisture monitoring stations equipped with telemetry data, irrigation amounts are recorded from a flow meter near the pump, and telemetry data is automatically sent to a computer with irrigation software. Typical water and energy savings are greater than 20%. The area for payment is the irrigated land using irrigation water management. Energy savings must be documented with an energy audit.	Ea	\$1,781.88	\$2,138.26
IWM, Basic Implementation of a low Intensity irrigation water management system such as irrigation scheduling. Producers use a checkbook method to determine water application times and amounts. Soil moisture is determined by the feel method, volumes of irrigation water are based on energy or water district bills, records are kept on paper copies, and calculations are made by hand. Typical water and energy savings range from 5-10%. The area for payment is the irrigated land using irrigation scheduling. Energy savings must be documented with an energy audit.	Ac	\$3.57	\$4.28
IWM, Intermediate 1st year Installation of soil moisture sensors that provide continuous soil moisture data to provide the producer with accurate soil moisture information during the growing season. Irrigation scheduling is based on actual soil moisture monitoring rather than a checkbook method. The number for payment will be the number of moisture sensor sets installed. Each set consists of 3-4 sensors installed at different depths at a single location in the field. It includes payment for the data logger and other appurtenances.	Ea	\$981.67	\$1,178.00

IWM, Intermediate Subsequent Years	Irrigation scheduling based on data from soil moisture sensors after the monitoring equipment has been purchased or is already available. Typical water and energy savings range from 10-20%. The area for payment is the irrigated land using irrigation scheduling. Energy savings must be documented with an energy audit.	Ac	\$3.64	\$4.37
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Limitations:

1. Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).
2. Practice payment will be limited to the conservation practice payment cap (\$5,000), up to the maximum number of payments per policy.

Documentation:

Forms KS-ENG-390, Irrigation Water Management - 449; KS-ENG-201, Irrigation System, Sprinkler - 442 (Center Pivot); KS-ENG-394, Irrigation Water Management - 449, Planned Crop and Water Requirement; KS-ENG-396, Irrigation Water Management - 449, Irrigation System and Management Rating Tool (I_SMRT); pumping plant evaluation and recommendations; energy audit and recommendations.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Nutrient Management

Code: 590

Reporting Unit: Acre

Definition:

Managing the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments.

Purpose:

- To budget and supply nutrients for plant production.
- To properly utilize manure or organic byproducts as a plant nutrient source.
- To minimize agricultural nonpoint source pollution of surface and groundwater resources.
- To protect air quality by reducing nitrogen emissions (ammonia and Nox compounds) and the formation of atmospheric particulates.
- To maintain or improve the physical, chemical, and biological condition of soil.

Conditions Where Practice Applies:

This practice applies to all lands where plant nutrients and soil amendments are applied.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Advanced Precision	This scenario describes the implementation of an advanced precision nutrient management (NM) system on cropland. Payment for implementation is to defray the costs of soil testing, analysis, consultant services, skilled labor and specialized nutrient application on land grant university recommendations or crop removal rates and an associated nutrient budget, recordkeeping, and monitoring on a precision level that includes split applications, NDVI sensing, and aerial imaging. Records demonstrating implementation of the 4 Rs of the NM plan will be required. This scenario goes beyond the basic precision system by using technologies that improve efficiency and effectiveness of nutrient management by using specialized precision techniques and tools (variable rate applicators, NDVI, aerial photography, yield monitoring). Precision NM techniques ensure that the right rate, proper timing, and proper placement of nutrients minimize nonpoint source pollution and provide proper amounts of nutrients to the crop where it is needed and not applying where it is not needed.	Ac	\$26.49	\$31.79
Basic	This scenario describes the implementation of a basic NM system on ≥ 40 acres of cropland or hayland where there is no manure application. Implementation will result in the proper rate, source, method of placement, and timing of nutrients. Payment for implementation is to defray the costs of soil testing, analysis, consultant services that provide nutrient recommendations based on LGU recommendations or crop removal rates and an associated nutrient budget, and recordkeeping. Records demonstrating implementation of the 4 Rs of the NM criteria will be required.	Ac	\$3.13	\$3.76

Basic with Manure	<p>This scenario describes the implementation of a basic NM system on planning units 40 ac or larger of cropland or hayland where there is manure or compost application in addition to commercial fertilizer applications. Implementation will result in the proper rate, source, method of placement, and timing of nutrients while minimizing off-site degradation or the excessive build up of nitrogen and phosphorus. Payment for implementation is to defray the costs of soil testing, manure testing, analysis, proper implementation, consultant services that provide nutrient recommendations based on land grant university recommendations or crop removal rates and an associated nutrient budget, and recordkeeping. Risk assessments including PI (phosphorus index) and NI (nitrogen index) will be completed with applications of manure completed based on risk results. Records demonstrating implementation of the 4 R's of the NM plan will be required along with copies of risk assessments.</p>	Ac	\$9.43	\$11.32
Enhanced	<p>This scenario takes a conventional cropping system where either no nutrient management or only a basic nutrient management is being practiced. An enhanced nutrient management system includes split applications and multiple nutrient concentration tests (other than only soil tests) and methods that more concisely enable scheduling of appropriate fertilizer applications. Nutrients are transported to surface waters through runoff or wind erosion in quantities that degrade water quality and limit use of intended purposes. Inefficient energy utilization occurs due to traditional methods and forms of fertilizer applications.</p>	Ac	\$18.10	\$21.72

Limitations:

1. Monitoring will focus on the timing and placement of manure and/or commercial fertilizers, and/or high-level management such as Precision and/or Adaptive Nutrient Management.
2. Practice payment will be limited to the conservation practice payment cap (\$2,500), up to the maximum number of payments per policy.

Documentation:

Form KS-ECS-590, Nutrient Management - 590, or Producer Self-Certification Guidance Sheet.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Residue and Tillage Management, Mulch

Code: 345

Reporting Unit: Acre

Definition:

Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled prior to planting.

Purpose:

- Reduce sheet and rill erosion.
- Reduce wind erosion.
- Reduce soil particulate emissions.
- Maintain or improve soil condition.
- Increase plant-available moisture.
- Provide food and escape cover for wildlife.

Conditions Where Practice Applies:

This practice applies to all cropland and other land where crops are planted.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
Mulch Till—Basic	Ac	\$31.94	\$38.33
This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly distributed over the entire field throughout critical wind erosion periods and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue. The RUSLE2 model will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. The producer will then remove operations, or select alternate operations, to reduce erosion below T.			

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500), up to the maximum number of payments per policy.

Documentation:

Producer Self-Certification Guidance Sheet.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Residue and Tillage Management, No Till/Strip/Direct Seed

Code: 329

Reporting Unit: Acre

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.

Purpose:

- Reduce sheet and rill erosion.
- Reduce wind erosion.
- Improve soil organic matter content.
- Reduce CO2 losses from the soil.
- Reduce soil particulate emissions.
- Increase plant-available moisture.
- Provide food and escape cover for wildlife.

Conditions Where Practice Applies:

This practice applies to all cropland and other land where crops are planted. This practice includes planting methods commonly referred to as no-till, strip till, direct seed, zero till, slot till, or zone till. Approved implements are no-till and strip-till planters, certain low soil disturbance drills and air seeders, strip-type fertilizer and manure injectors and applicators, in-row chisels, and similar implements that only disturb strips and slots. All others are considered to be full-width or capable of full disturbance and, therefore, not compatible.

Payment Schedule:

Activity Description	Payment Unit	Payment Rate	
		General	HU
No-Till/Strip-Till	Ac	\$27.03	\$32.43

This practice typically involves conversion from a clean-tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on 100 acres of cropland. The no-till/strip-till system includes chemical weed control (rather than cultivation) and may also include a period of chemical fallow. System is applicable in both irrigated and non-irrigated fields.

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500), up to the maximum number of payments per policy.

Documentation:

Producer Self-Certification Guidance Sheet.

Maintenance:

Practice will be maintained for a lifespan of one year following installation.

Riparian Forest Buffer

Code: 391

Reporting Unit: Acre

Definition:

An area of predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.

Purpose:

Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms.

Create or improve riparian habitat and provide a source of detritus and large woody debris.

Reduce excess amounts of sediment, organic material, nutrients, and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.

Reduce pesticide drift entering the water body.

Restore riparian plant communities.

Increase carbon storage in plant biomass and soils.

Conditions Where Practice Applies:

Riparian forest buffers are applied on areas adjacent to permanent or intermittent streams, lakes, ponds, and wetlands.

They are not applied to stabilize streambanks or shorelines.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Bareroot, machine planted	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35' wide. The planting will consist of machine planted bare-root shrubs, evergreen, and deciduous trees in rows. Typically, area will be planted using 3 rows and will use each of the woody plant types. Spacing between plants in-row: shrubs will be 6', evergreen tree will be 12', and deciduous tree at 15'. Tree rows will be 15' apart. A total tree row length of 3000'. Tree shelters will be placed on the hardwoods and evergreens as necessary to reduce wildlife damage or other concerns.	Ac	\$1,030.84	\$1,204.02
Direct Seeding	Establish a buffer of trees and/or shrubs to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35' wide and 3000 feet long. The planting will consist of trees or shrubs planted through direct seeding. Planting rate will be approximately 3000 seeds per acre.	Ac	\$475.12	\$537.16
Small container, machine planted	Establish a buffer of trees and/or shrubs into a suitably prepared site to restore riparian plant communities and associated benefits. The buffer will be located adjacent to and up-gradient from a watercourse or water body extending a minimum of 35' wide. The planting will consist of machine planted containerized shrubs, evergreen, and deciduous trees in rows. Typically, area will be planted using 3 rows. Spacing between plants in-row: shrubs will be 6', evergreen tree will be 12', and deciduous tree at 15'. Tree rows will be 15' apart. Tree row is a total length of 3000'. Tree shelters will be placed on the hardwoods and evergreens as necessary to reduce wildlife damage or other concerns.	Ac	\$1,633.13	\$1,926.77

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$2,500).

Documentation:

Form KS-ECS-5, Tree/Shrub Planting.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.

Sediment Basin

Code: 350

Reporting Unit: Number

Definition:

A basin constructed to collect and store debris or sediment.

Purpose:

To preserve the capacity of reservoirs, wetlands, ditches, canals, diversions, waterways, and streams.

To prevent undesirable deposition on bottom lands and developed areas.

To trap sediment originating from construction sites or other disturbed areas.

To reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural waste solids, and other detritus.

Conditions Where Practice Applies:

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Embankment Basin	A sediment basin constructed with a low hazard class earthen embankment to capture sediment and slowly release water. The sediment basin is created by a compacted earth embankment and impounds more than 3 feet of water against the embankment. The volume for payment will be the embankment volume of the constructed basin.	CuYd	\$2.17	\$2.60
Excavated Basin	A sediment basin constructed by a combination of excavation and earthfill to capture sediment and slowly release water. The sediment basin impounds 3 or less feet of water against any embankment or spoil. The volume for payment will be the excavated volume of the constructed basin.	CuYd	\$3.05	\$3.65

Limitations:

1. Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).

Documentation:

Forms KS-ENG-10, Job Sheet; KS-ENG-452, Sediment Basin Details; Completed table of quantities on as-built plan; KS-ENG-4a, Earthwork Computation Sheet- Fill.

Maintenance:

Practice will be maintained for a lifespan of 20 years following installation.

Vegetated Treatment Area

Code: 635

Reporting Unit: Acre

Definition:

An area of permanent vegetation used for agricultural wastewater treatment.

Purpose:

To improve water quality by reducing loading of nutrients, organics, pathogens, and other contaminants associated with livestock, poultry, and other agricultural operations.

Conditions Where Practice Applies:

Where a vegetated treatment area can be constructed, operated, and maintained to treat contaminated runoff from such areas as feedlots, compost areas, barnyards, and other livestock holding areas, or to treat process wastewater from agricultural operations.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Concrete Curb, No Spreader Devices	Installation of a vegetated treatment area (VTA) using a concrete curb as the distribution device and no spreaders in the VTA. The installation includes the land grading, concrete curb, and all materials and labor. The area for payment is the acres of shaped area in the VTA.	Ac	\$1,955.81	\$2,346.97
Gated Pipe, No Spreader Devices	Installation of a VTA using a gated pipe as the distribution device and no spreaders in the VTA. The installation includes the land grading, gated pipe, and all materials and labor. The area for payment is the acres of shaped area in the VTA.	Ac	\$1,287.26	\$1,544.72
Minor Shaping	Installation of a vegetated filter strip without any distribution device. The area for payment will be the acres of vegetated filter strip.	Ac	\$862.73	\$1,035.28

Limitations:

0. Practice payment will be limited to the conservation practice payment cap (\$2,500).

Documentation:

Completed table of quantities on as-built plan.

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Water and Sediment Control Basin

Code: 638

Reporting Unit: Number

Definition:

An earth embankment or a combination ridge and channel constructed across the slope of minor watercourses to form a sediment trap and water detention basin with a stable outlet.

Purpose:

A water and sediment control basin may be established to:

- Improve farmability of sloping land.
- Reduce watercourse and gully erosion.
- Trap sediment.
- Reduce and manage onsite and downstream runoff.
- Improve downstream water quality.

Conditions Where Practice Applies:

This practice applies to sites where:

1. The topography precludes installing and farming terraces with reasonable effort.
2. Watercourse or gully erosion is a problem.
3. Sheet and rill erosion is controlled by other conservation practices.
4. Runoff and sediment damage land and improvements.
5. Soil and site conditions are suitable.
6. Adequate outlets can be provided.

Water and sediment control basins shall not be used in place of terraces and other conservation measures. Where the ridge and/or channel extends beyond the detention basin or level embankment, use CP 600, Terrace, or 362, Diversion, as appropriate.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Water and Sediment Control Basin, base	Installation of a WASCOB constructed to capture sediment and slowly release water. The embankment or ridge is typically 4' or less high. The volume for payment will be the cubic yards of earthfill in the embankment or ridge.	CuYd	\$2.92	\$3.50
Water and Sediment Control Basin, topsoil	Installation of a WASCOB constructed to capture sediment and slowly release water. The embankment or ridge is typically greater than 4' high and topsoil is stockpiled and placed on the embankment during construction. The volume for payment will be the cubic yards of earthfill in the embankment or ridge.	CuYd	\$3.13	\$3.76

Limitations:

1. Monitoring will also evaluate the full system of supporting practices necessary for proper practice function; payment caps for these practices, in combination, will not exceed the cap of the primary practice (\$5,000).

Documentation:

Forms KS-ENG-4a, Earthwork Computation Sheet - Fill; KS-ENG-15, Earth Dam Inspection Report; Storage Terrace Spreadsheet; Completed table of quantities on as-built plan.

Maintenance:

Practice will be maintained for a lifespan of 10 years following installation.

Wetland Creation

Code: 658

Reporting Unit: Acre

Definition:

The creation of a wetland on a site that was historically non-wetland.

Purpose:

To create wetland functions and values.

Conditions Where Practice Applies:

This practice applies to sites where no natural wetland occurred historically and contains soils that are not hydric.

This practice does not apply to:

A constructed wetland intended to treat point and nonpoint sources of water pollution.

Wetland enhancement intended to rehabilitate a degraded wetland where specific functions and/or values are enhanced beyond original conditions.

Wetland restoration intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to approximate original wetland conditions.

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Excavation and Embankment	Creation of a new wetland area by excavating a depression and building a dike to intercept runoff. The area created must be supported by a water budget analysis. The area for payment will be the acres of excavated area.	Ac	\$4,410.46	\$5,292.55
Excavation at Saturated Site	Creation of a new wetland area by excavating an area below existing ground level at a location where a shallow water table may be exposed by excavation. The area of excavation must be supported by a soils investigation. The area for payment will be the acres of excavated wetland created.	Ac	\$5,228.22	\$6,273.86
Wetland Creation, Excavation	Creation of a new wetland area by excavating an area below existing ground level at a location where surface runoff may be intercepted and ponded by excavation. The area of excavation must be supported by a water budget analysis. The area for payment will be the acres of excavated wetland created.	Ac	\$2,943.89	\$3,532.67

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$5,000).

Documentation:

Forms KS-ENG-4a, Earthwork Computation Sheet - Fill; KS-ENG-4c, Earthwork Computation Sheet - Cut; Completed table of quantities on as-built Plans.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.

Wetland Enhancement

Code: 659

Reporting Unit: Acre

Definition:

The rehabilitation or re-establishment of a degraded wetland and/or the modification of an existing wetland, which augments specific site conditions for specific species or purposes, possibly at the expense of other functions and other species.

Purpose:

To provide specific wetland conditions to favor specific wetland functions and targeted species by hydrologic enhancement (depth duration and season of inundation, and/or duration and season of soil saturation) or vegetative enhancement (including the removal of undesired species, and/or seeding or planting of desired species).

Conditions Where Practice Applies:

This practice applies on any degraded or nondegraded existing wetland where the objective is specifically to enhance selected wetland functions. This practice does not apply to the following where the intention is to:

Treat point and nonpoint sources of water pollution (CP 656, Constructed Wetland);

Rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to original conditions (CP 657, Wetland Restoration);

Create a wetland on a site that historically was not a wetland (CP 658, Wetland Creation).

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Depression Sediment Removal and Ditch Plug	Enhancement of a degraded depressional or riverine wetland by removal of sediment and/or filling of small drainage ditches to enhance the function of the wetland. The enhancement must be supported by a functional analysis to support the sediment removal or earthfill. The area for payment will be the acres of excavated area.	Ac	\$1,368.00	\$1,641.60
Excavation	Enhancement of a degraded depressional or riverine wetland by removal of sediment or strategic excavation to enhance the function of the wetland. The enhancement must be supported by a functional analysis to support the sediment removal or excavation. The wetland is in an area of climatic conditions where it is typically dry for extended portions of the year. The area for payment will be the acres of excavated area.	Ac	\$1,296.37	\$1,555.65
Excavation on Saturated Site	Enhancement of a degraded depressional or riverine wetland by removal of sediment or strategic excavation to enhance the function of the wetland. The enhancement must be supported by a functional analysis to support the sediment removal or excavation. The wetland is in an area of climatic conditions where it is normally saturated all year long. The area for payment will be the acres of excavated area.	Ac	\$2,548.77	\$3,058.53

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$5,000).

Documentation:

Forms KS-ENG-4a, Earthwork Computation Sheet - Fill; KS-ENG-4c, Earthwork Computation Sheet - Cut; Completed table of quantities on as-built plans.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.

Wetland Restoration

Code: 657

Reporting Unit: Acre

Definition:

The rehabilitation of a degraded wetland or the reestablishment of a wetland so that soils, hydrology, vegetative community, and habitat are a close approximation of the original natural condition that existed prior to modification to the extent practicable.

Purpose:

To restore wetland function, value, habitat, diversity, and capacity to a close approximation of the pre-disturbance by:
 Restoring hydric soil.
 Restoring hydrology (depth duration and season of inundation, and/or duration and season of soil saturation).
 Restoring native vegetation (including the removal of undesired species, and/or seeding or planting of desired species).

Conditions Where Practice Applies:

This practice applies only to natural wetland sites with hydric soils, or problem soils that are hydric, which have been subject to hydrologic or vegetative degradation, or to sites where hydric soils are covered by fill, sediment, or other deposits. This practice is applicable only where the natural hydrologic conditions, including the hydro-periods, can be approximated by modifying drainage and/or by artificial flooding of a duration and frequency similar to the original, natural conditions. This practice does not apply:
 To treat point and nonpoint sources of water pollution (CP 656, Constructed Wetland).
 To modify an existing wetland where specific attributes are heightened by management objectives, and/or returning a degraded wetland back to a wetland but to a different type than what previously existed on the site (CP 659, Wetland Enhancement).
 To creating a wetland on a site location which historically was not a wetland (CP 658, Wetland Creation).

Payment Schedule:

Activity Description		Payment Unit	Payment Rate	
			General	HU
Depression Sediment Removal	Restoration of a converted depressional wetland by removing sediment from all or a portion of the wetland. The wetland is in an area of climatic conditions where it is typically dry for extended portions of the year. The area for payment will be the acres in the wetland where sediment is removed.	Ac	\$4,281.83	\$5,138.19
Ditchplug—Lateral Restoration	Restoration of a converted depressional or riverine wetland by filling small ditches or subsurface drains used to drain the wetland. The typical ditch is less than 10' wide and 2' deep. The number for payment is each ditch filled or subsurface drain plugged.	Ea	\$520.39	\$624.47
Embankment—Fill Height ≤ 4 feet	Restoration of a converted depressional or riverine wetland by filling a single large drainage ditch that was excavated to drain the wetland. The embankment to fill the ditch is typically less than 4' high and 100' in length. The number for payment is each embankment constructed.	Ea	\$791.14	\$949.36
Fill in dugout	Restoration of a converted depressional wetland to its original condition by filling a dugout used to drain the wetland. The number for payment is each dugout filled.	Ea	\$2,432.35	\$2,918.83
Sediment Removal—Saturated Site	Restoration of a converted depressional wetland by removing sediment from all or a portion of the wetland. The wetland is in an area of climatic conditions where it is normally saturated all year long. The area for payment will be the acres in the wetland where sediment is removed.	Ac	\$10,239.69	\$12,287.63

Limitations:

1. Practice payment will be limited to the conservation practice payment cap (\$5,000).

Documentation:

Forms KS-ENG-4a, Earthwork Computation Sheet - Fill; KS-ENG-4c, Earthwork Computation Sheet - Cut; Completed table of quantities on as-built plans.

Maintenance:

Practice will be maintained for a lifespan of 15 years following installation.