

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	1
Scenario Name	Incineration < 100CF chamber
Scenario Description	<p>This scenario consists of installing a manufactured type IV incinerator designed to handle less than 650 lbs of average daily mortality for the species and size of the operation. Typically very large poultry or medium sized swine operations. System shall use high temperature (>1,300 degrees F) incineration with a secondary combustion or afterburner chamber prior to flue discharge. After determining average daily mortality in lbs, select smallest incinerator that meets capacity. Payment made per unit of actual chamber size obtained from manufacturers' product literature. This option is not typically least-cost. In most states a roofed static pile with concrete floor and bins would be considered least cost. Therefore consider reducing payment rate as per State Conservationist discretion. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors are reduced, however, in non-attainment areas, certain states may require a higher level of processing such as gasification or other approved methods.</p> <p>Potential Associated Practices: Heavy Use Area Protection (561), Fence (382), Critical Area Planting (342), Access Road (560), Waste Storage Facility (313), Nutrient</p>
Before Practice Situation	<p>Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.</p>
After Practice Situation	<p>Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete incineration, and protection from predators to minimize pathogen survival or spreading. In non-attainment areas, certain states may require a higher level of processing such as gasification or different methods. An overall plan covers normal and catastrophic mortality events. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation. Incinerator installed to handle 700 lbs per day average mortality for a medium poultry or swine operation. Included is a concrete slab to set the incinerator on and a diesel fuel tank. Ash materials to be stored in suitable containers until land disposal as per the nutrient management plan or landfilled.</p>
Scenario Feature Measure	Incinerator Chamber Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	55.8

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,921.04	\$124.03
Equipment/Installation	\$929.15	\$16.65
Labor	\$38.29	\$0.69
Mobilization	\$92.60	\$1.66
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$7,981.08	\$143.03

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	2
Scenario Name	Incineration ≥100 CF Chamber
Scenario Description	This scenario consists of installing a manufactured-type IV incinerator designed to handle 650 or more lbs of average daily mortality. Typically a single dairy cow or multiple heifers or swine (1200 to 1500 lb mortality). System shall use high temperature (>1,300 degrees F) incineration with a secondary combustion or afterburner chamber prior to flue discharge. Select smallest incinerator that has a bin capacity to handle largest individual mortality. Payment made per unit of actual chamber size obtained from manufacturers' product literature. This option uses a very small footprint, however, it costs 15-20 gallons of diesel fuel per fill. The usage needs to be significant. At 500 cows with replacements, this option would offset a 4,000 SF concrete pad with another 8,000 to 12,000 SF of grassed area. Cost for that option would be for an area of 4,000 ft ² @ \$4.50 or \$18,000 vs. \$24,000. This option for small dairy operations would not typically be least-cost. In most states either a roofed or unroofed static pile with concrete floor and walls would be considered least cost. Unless regulations require this or severe site limitations exist, consider reducing payment rate as per State Conservationist discretion. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors will also be addressed, however, in non-attainment areas, certain states may require a higher level of processing such as gasification or other approved methods.
Before Practice Situation	Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete incineration, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. In non-attainment areas, certain states may require a higher level of processing such as gasification or other approved method. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulations. Incinerator installed to handle a whole 1350 lb dairy cow on a 1,000 cow operation. Included is a concrete slab to set the incinerator on and a fuel tank. Ash materials to be stored in suitable containers, a waste storage pit until land disposal as per the nutrient management plan or landfilled. Proper incineration will require between 15 and 25 gallons of diesel fuel per usage.
Scenario Feature Measure	Incineration Chamber Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	119.6

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$8,896.04	\$74.38
Equipment/Installation	\$929.15	\$7.77
Labor	\$38.29	\$0.32
Mobilization	\$92.60	\$0.77
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$9,956.08	\$83.24

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	4
Scenario Name	Gasifier > 30 CF Chamber
Scenario Description	<p>This scenario consists of installing a manufactured gasifier designed to handle more than 500 pound mortality. The purpose of the practice is to address resource concerns related to water quality degradation due to excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Air quality impacts due to odors will also be addressed, however, in non-attainment areas, certain states may require a higher level of processing.</p> <p>Potential Associated Practices: Heavy Use Area Protection (561), Fence (382), Critical Area Planting (342), Access Road (560), Waste Storage Facility (313), Nutrient Management (590), Roofs and Covers (367), Critical Area Planting (342).</p>
Before Practice Situation	Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete incineration, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events. In non-attainment areas, certain states may require a higher level of processing such as gasification or other approved method. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulations. Gasifier and refrigerator installed to handle more than 500 pounds. Included is a concrete slab. Ash materials to be stored in suitable containers, a waste storage pit until land disposal as per the nutrient management plan or landfilled.
Scenario Feature Measure	Gasifier Chamber Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	43.1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$90,303.54	\$2,095.21
Equipment/Installation	\$929.15	\$21.56
Labor	\$38.29	\$0.89
Mobilization	\$92.60	\$2.15
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$91,363.58	\$2,119.80

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1631	Mortality Gasifier, 800 lb Capacity	800 pound capacity mortality gasifier unit. Includes gasifier, refrigeration unit, roof structure and labor	Each	\$90,207.50	1	\$90,207.50

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Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	8
Scenario Name	Sow/Finisher
Scenario Description	<p>eration, in-vessel or other mortality composting technologies. The roofed portion of the facility is addressed in Roofs and Covers (367). Material storage and finished compost storage are permitted under the 316 standard by reference to the 317 Composting Facility standard (under facility sizing) however, the states may choose to allow for any additional area required for raw material storage or tertiary treatment of compost to be addressed in Waste Storage Facility (313). Size of facility based on average daily mortality and sizing procedures accepted in particular state. Payment is based on daily weight of mortality converted to volume by using a density of 60 #/cf.</p> <p>A typical operation is a 2000 head sow operation or a 6400 head finisher operation that has an average daily mortality of 300 pounds (typical scenario size is 300 / 60 = 5 cf). The number of bins required is calculated where the bin volume is 20 cf per #/day mortality for each primary compost bin (10'x12'x5' = 9.33x12x5 effective) and the total number of bins is 2.75 x number of primary bins (300 x 20 / (9.33x12x5) * 2.75 = 30). A 15' wide concrete apron for each bin is also included in this scenario.</p> <p>Potential Associated Practices: Roofs and Covers (367), Heavy Use Area Protection (561), Waste Storage Facility (313), Critical Area Planting (342), Nutrient</p>
Before Practice Situation	Animal mortality is dealt with in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is handled in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation.
Scenario Feature Measure	Daily weight of mortality divided by 60 #/cf
Scenario Unit	Cubic Foot
Scenario Typical Size	5.00

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$16,071.60	\$3,214.32
Equipment/Installation	\$25,224.48	\$5,044.90
Labor	\$8,931.74	\$1,786.35
Mobilization	\$145.83	\$29.17
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$50,373.65	\$10,074.73

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.71	14520	\$10,309.20
Materials	12	Post, Wood, CCA treated, 6" x 8'	Wood Post, End 6" X 8', CCA Treated	Each	\$20.58	154	\$3,169.32
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$24.01	108	\$2,593.08
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	77	\$1,484.56
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	108	\$456.84
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.71	108	\$184.68
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.11	651	\$1,373.61
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$207.24	90	\$18,651.60
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$7.43	77	\$572.11
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$101.67	24.6	\$2,501.08
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	77	\$1,510.74

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$75.07	20	\$1,501.40
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	240	\$4,480.80
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$23.98	60	\$1,438.80
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	1	\$19.43
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$63.20	2	\$126.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	9
Scenario Name	Nursery
Scenario Description	<p>vessel or other mortality composting technologies. The roofed portion of the facility is addressed in Roofs and Covers (367). Material storage and finished compost storage are permitted under the 316 standard by reference to the 317 Composting Facility standard (under facility sizing) however, the states may choose to allow for any additional area required for raw material storage or tertiary treatment of compost to be addressed in Waste Storage Facility (313). Size of facility based on average daily mortality and sizing procedures accepted in particular state. Payment is based on daily weight of mortality converted to volume by using a density of 60 #/cf.</p> <p>A typical operation is a 4 house, 1520 pigs each for a total of 6080 head nursery operation that has an average daily mortality of 175 pounds (typical scenario size is 75 / 60 = 2.92 cf). The number of bins required is calculated where the bin volume is 10 cf per #/day mortality for each primary compost bin (10'x12'x5' = 9.33x12x5 effective) and the total number of bins is 2 x number of primary bins (175 x 10 / (9.3x12x5) * 2 = 6). A 15' wide concrete apron for each bin is also included in this scenario.</p>
Before Practice Situation	Animal mortality is dealt with in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is handled in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation.
Scenario Feature Measure	Daily weight of mortality divided by 60 #/cf
Scenario Unit	Cubic Foot
Scenario Typical Size	2.92

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,440.70	\$1,178.32
Equipment/Installation	\$6,684.88	\$2,289.34
Labor	\$2,999.24	\$1,027.14
Mobilization	\$145.83	\$49.94
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$13,270.65	\$4,544.74

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.71	2904	\$2,061.84
Materials	12	Post, Wood, CCA treated, 6" x 8'	Wood Post, End 6" X 8", CCA Treated	Each	\$20.58	32	\$658.56
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$24.01	30	\$720.30
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	16	\$308.48
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	30	\$126.90
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.71	30	\$51.30
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.11	180	\$379.80
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$207.24	25	\$5,181.00
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$7.43	16	\$118.88
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$101.67	5.1	\$518.52
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	16	\$313.92

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$75.07	20	\$1,501.40
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	48	\$896.16
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$23.98	12	\$287.76
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	1	\$19.43
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$63.20	2	\$126.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	10
Scenario Name	Turkey
Scenario Description	<p>This scenario consists of measuring the ability to compost large quantities of heavy tom turkey carcasses. The facility consists of three wind-tolerant aerated, in-vessel or other mortality composting technologies. The roofed portion of the facility is addressed in Roofs and Covers (367). Material storage and finished compost storage are permitted under the 316 standard by reference to the 317 Composting Facility standard (under facility sizing) however, the states may choose to allow for any additional area required for raw material storage or tertiary treatment of compost to be addressed in Waste Storage Facility (313). Size of facility based on average daily mortality and sizing procedures accepted in particular state. Payment is based on daily weight of mortality converted to volume by using a density of 60 #/cf.</p> <p>A typical operation is a 28,000 head heavy tom turkey operation with 10% mortality, 119 day flock life, and 45 pound market weight that has an average daily mortality of 1059 pounds (typical scenario size is 1059 / 60 = 17.65 cf). The number of bins required is calculated where the bin volume is 2.5 cf per #/day mortality for each primary compost bin (10'x6'x5' = 9.33x6x4 effective) and the total number of bins is 2.75 x number of primary bins (1059 x 2.5 / (9.3x6x4) * 2.75 = 32). A 15' wide concrete apron for each bin is also included in this scenario.</p>
Before Practice Situation	Animal mortality is dealt with in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is handled in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation.
Scenario Feature Measure	Daily weight of mortality divided by 60 #/cf
Scenario Unit	Cubic Foot
Scenario Typical Size	17.65

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$14,373.81	\$814.38
Equipment/Installation	\$28,309.01	\$1,603.91
Labor	\$9,424.48	\$533.96
Mobilization	\$145.83	\$8.26
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$52,253.13	\$2,960.52

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.71	11264	\$7,997.44
Materials	12	Post, Wood, CCA treated, 6" x 8'	Wood Post, End 6" X 8", CCA Treated	Each	\$20.58	164	\$3,375.12
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$24.01	125	\$3,001.25
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	82	\$1,580.96
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	125	\$528.75
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.71	125	\$213.75
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.11	746	\$1,574.06
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$207.24	102	\$21,138.48
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$7.43	82	\$609.26
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-place without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$101.67	26.2	\$2,663.75
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	82	\$1,608.84

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$75.07	20	\$1,501.40
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	256	\$4,779.52
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$23.98	64	\$1,534.72
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	1	\$19.43
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$63.20	2	\$126.40

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	316 - Animal Mortality Facility
Scenario ID	11
Scenario Name	Poultry
Scenario Description	<p>This scenario consists of treating poultry waste through mortality composting technology. The facility consists of a state-of-the-art, fully enclosed mortality composting technologies. The roofed portion of the facility is addressed in Roofs and Covers (367). Material storage and finished compost storage are permitted under the 316 standard by reference to the 317 Composting Facility standard (under facility sizing) however, the states may choose to allow for any additional area required for raw material storage or tertiary treatment of compost to be addressed in Waste Storage Facility (313). Size of facility based on average daily mortality and sizing procedures accepted in particular state. Payment is based on daily weight of mortality converted to volume by using a density of 60 #/cf.</p> <p>A typical operation is a 88,000 head broiler operation with 5.5% mortality, 63 day flock life, and 8.5 pound market weight that has an average daily mortality of 653 pounds (typical scenario size is 653 / 60 = 10.88 cf). The number of bins required is calculated where the bin volume is 2.0 cf per #/day mortality for each primary compost bin (10'x6'x5' = 9.33x6x5 effective) and the total number of bins is 2 x number of primary bins (653 x 2 / (9.3x6x5) * 2 = 10). A 15' wide concrete apron for each bin is also included in this scenario.</p>
Scenario Description	Potential Associated Practices: Roofs and Covers (367), Heavy Use Area Protection (561), Waste Storage Facility (313), Critical Area Planting (342), Nutrient
Before Practice Situation	Animal mortality is dealt with in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events.
After Practice Situation	Animal mortality is handled in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation.
Scenario Feature Measure	Daily weight of mortality divided by 60 #/cf
Scenario Unit	Cubic Foot
Scenario Typical Size	10.88

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,505.75	\$414.13
Equipment/Installation	\$8,886.96	\$816.82
Labor	\$3,984.72	\$366.24
Mobilization	\$145.83	\$13.40
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$17,523.26	\$1,610.59

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.71	3520	\$2,499.20
Materials	12	Post, Wood, CCA treated, 6" x 8'	Wood Post, End 6" X 8", CCA Treated	Each	\$20.58	52	\$1,070.16
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$24.01	39	\$936.39
Equipment/Installation	963	Tractor, agricultural, 60 HP	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$19.28	26	\$501.28
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	39	\$164.97
Equipment/Installation	48	Excavation, Common Earth, side cast, small equipment	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.71	39	\$66.69
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.11	230	\$485.30
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-place as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$207.24	32	\$6,631.68
Equipment/Installation	934	Auger, Post driver attachment	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$7.43	26	\$193.18
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-place without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$101.67	8.3	\$843.86
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	26	\$510.12

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$75.07	20	\$1,501.40
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	80	\$1,493.60
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$23.98	20	\$479.60
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	1	\$19.43
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$63.20	2	\$126.40