

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	5
Scenario Name	Above Ground Steel/Concrete 100-200K ft3 storage
Scenario Description	An above ground circular glass lined steel or concrete structure constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario has a design storage volume of between 100,000 and 200,000 ft3. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), and Pumping Plant (533).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	An above ground storage structure provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Total volume 187,094 ft3, including freeboard; based on 112' X 19' glass lined steel tank. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	187,094

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$313,757.42	\$1.68
Equipment/Installation	\$88,915.68	\$0.48
Labor	\$2,500.80	\$0.01
Mobilization	\$1,249.24	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$406,423.14	\$2.17

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1621	Waste Storage, glass lined steel structure, 100,000-200,000 cubic foot	Includes materials, equipment and labor to install a steel glass lined structure (based on typical 112' diameter X 19' height) . Includes materials, equipment and labor.	Cubic Foot	\$1.65	187094	\$308,705.10
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	182	\$5,052.32
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	65	\$32,691.10
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	\$316.71	152	\$48,139.92
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	1094	\$3,708.66
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	1094	\$4,376.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	60	\$2,500.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	6
Scenario Name	Above Ground Steel/Concrete >200K ft ³ storage
Scenario Description	<p>An above ground circular glass lined steel or concrete structure constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario has a design storage volume of greater than 200,000 ft³. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.</p> <p>Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), and Pumping Plant (533).</p>
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	An above ground storage structure provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Total volume 248,201 ft ³ , including freeboard; based on 129' X 19' glass lined steel tank. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	248,201

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$416,249.57	\$1.68
Equipment/Installation	\$104,882.10	\$0.42
Labor	\$3,334.40	\$0.01
Mobilization	\$1,249.24	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$525,715.31	\$2.12

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1622	Waste Storage, glass lined steel structure >200,000 cubic foot	Includes materials, equipment and labor to install a steel glass lined structure (based on typical 129' diameter X 19' height) . Includes materials, equipment and labor.	Cubic Foot	\$1.65	248201	\$409,531.65
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	242	\$6,717.92
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	60	\$30,176.40
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	\$316.71	202	\$63,975.42
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	1452	\$4,922.28
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	1452	\$5,808.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	80	\$3,334.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	4
Scenario Name	Above Ground Steel/Concrete 25-100K ft ³ storage
Scenario Description	<p>An above ground circular glass lined steel or concrete structure constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario has a design storage volume of between 25,000 and 100,000 ft³. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.</p> <p>Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), and Pumping Plant (533).</p>
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	An above ground storage structure provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Total volume 79,482 ft ³ , including freeboard; based on 73' X 19' glass lined steel tank. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	79,482

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$138,846.56	\$1.75
Equipment/Installation	\$45,648.92	\$0.57
Labor	\$1,667.20	\$0.02
Mobilization	\$1,249.24	\$0.02
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$187,411.92	\$2.36

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1620	Waste Storage, glass lined steel structure, 25,000 - 100,000 cubic foot	Includes materials, equipment and labor to install a steel glass lined structure (based on typical 73' diameter X 19' height) . Includes materials, equipment and labor.	Cubic Foot	\$1.72	79482	\$136,709.04
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	77	\$2,137.52
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	43	\$21,626.42
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	\$316.71	65	\$20,586.15
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	465	\$1,576.35
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	465	\$1,860.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	40	\$1,667.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	3
Scenario Name	Above Ground Steel/Concrete < 25K ft3 storage
Scenario Description	An above ground circular glass lined steel or concrete structure constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario has a design storage volume of less than 25,000 ft3. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Solid/Liquid Waste Separation Facility (632), Waste Treatment (629), and Pumping Plant (533).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	An above ground storage structure provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Total volume 14,333 ft3, including freeboard; based on 31' X 19' glass lined steel tank. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	14,333

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$76,353.54	\$5.33
Equipment/Installation	\$13,474.20	\$0.94
Labor	\$1,250.40	\$0.09
Mobilization	\$1,249.24	\$0.09
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$92,327.38	\$6.44

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1616	Waste Storage, Glass lined steel structure (<25,000 ft3)	Includes materials, equipment and labor to install 31' (diameter) X19' (height) steel lined structure. Includes materials, equipment and labor.	Cubic Foot	\$5.30	14333	\$75,964.90
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	14	\$388.64
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	18	\$9,052.92
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	\$316.71	12	\$3,800.52
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	84	\$284.76
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	84	\$336.00
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	21
Scenario Name	Bedded Pack, Concrete Floor, Concrete Wall
Scenario Description	Install a composted bedded pack facility with concrete walls and concrete floor. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. Facility is constructed to store wastes as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,368 ft ² , (42' X 104'); 8' concrete wall height (only 4' of wall which contains the manure is considered on scenario), 9.5' footing depth with a 5" concrete floor; open on each end of structure. Wall/foundation must be designed to support roof (367- Roofs & Covers).
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4,368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,618.38	\$0.37
Equipment/Installation	\$83,904.47	\$19.21
Labor	\$1,250.40	\$0.29
Mobilization	\$1,249.24	\$0.29
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$88,022.49	\$20.15

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$19.98	81	\$1,618.38
Equipment/Installation	1199	Stripping and stockpiling, topsoil	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.80	204	\$163.20
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	204	\$691.56
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	370	\$1,480.00
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	370	\$1,209.90
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	\$2.16	370	\$799.20
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	116	\$58,341.04
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	\$316.71	67	\$21,219.57
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	20
Scenario Name	Bedded Pack, Gravel Floor, Concrete Wall
Scenario Description	Install a composted bedded pack facility with concrete walls and gravel floor. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. Facility is constructed to store wastes as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,368 ft ² , (42' X 104'); 8' concrete wall height (only 4' of wall which contains the manure is considered on scenario), 9.5' footing depth with a gravel floor; open on each end of structure. Wall/foundation must be designed to support roof (367- Roofs & Covers).
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4,368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,236.76	\$0.74
Equipment/Installation	\$62,684.90	\$14.35
Labor	\$1,250.40	\$0.29
Mobilization	\$1,249.24	\$0.29
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$68,421.30	\$15.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$19.98	162	\$3,236.76
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	116	\$58,341.04
Equipment/Installation	1199	Stripping and stockpiling, topsoil	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.80	204	\$163.20
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	204	\$691.56
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	370	\$1,209.90
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	370	\$1,480.00
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	\$2.16	370	\$799.20
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	23
Scenario Name	Bedded Pack, Concrete Floor, Timber Wall
Scenario Description	Install a composted bedded pack facility with timber posts and plank walls and concrete floor. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. Facility is constructed to store wastes as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,368 ft ² , (42' X 104'); 8' timber wall height (only 4' of wall which contains the manure is considered on scenario), 10"x10" post embedded 6' in the ground, reinforced concrete floor, open at each end of structure. Timber Wall/foundation must be designed to support roof (367- Roofs & Covers).
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4,368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,834.38	\$1.56
Equipment/Installation	\$30,167.80	\$6.91
Labor	\$3,307.20	\$0.76
Mobilization	\$1,249.24	\$0.29
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$41,558.62	\$9.51

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$19.98	81	\$1,618.38
Materials	1609	Lumber, planks, posts and timbers, treated	Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor.	Board Foot	\$1.28	3113	\$3,984.64
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.74	1664	\$1,231.36
Equipment/Installation	1199	Stripping and stockpiling, topsoil	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.80	204	\$163.20
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	204	\$691.56
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	139	\$454.53
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	\$316.71	67	\$21,219.57
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	\$155.38	8	\$1,243.04
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.34	139	\$742.26
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	10	\$5,029.40
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	\$2.16	139	\$300.24

Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	81	\$324.00
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	\$25.71	80	\$2,056.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	22
Scenario Name	Bedded Pack, Gravel Floor, Timber Wall
Scenario Description	Install a composted bedded pack facility with timber posts and plank walls and gravel floor. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. Facility is constructed to store wastes as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367).
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design: floor area 4,368 ft ² , (42' X 104'); 8' timber wall height (only 4' of wall which contains the manure is considered on scenario), 10"x10" post embedded 6' in the ground, gravel floor, open at each end of structure. Timber Wall/foundation must be designed to support roof (367- Roofs & Covers).
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4,368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$8,452.76	\$1.94
Equipment/Installation	\$9,272.23	\$2.12
Labor	\$3,307.20	\$0.76
Mobilization	\$1,249.24	\$0.29
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$22,281.43	\$5.10

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1099	Aggregate, Gravel, Ungraded, Quarry Run	Includes materials, equipment and labor	Cubic yard	\$19.98	162	\$3,236.76
Materials	1609	Lumber, planks, posts and timbers, treated	Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor.	Board Foot	\$1.28	3113	\$3,984.64
Materials	1044	Dimension Lumber, Treated	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.74	1664	\$1,231.36
Equipment/Installation	1199	Stripping and stockpiling, topsoil	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.80	204	\$163.20
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	204	\$691.56
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	139	\$454.53
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	\$155.38	8	\$1,243.04
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.34	139	\$742.26
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	10	\$5,029.40
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	\$2.16	139	\$300.24
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	162	\$648.00

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	\$25.71	80	\$2,056.80
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	12
Scenario Name	Concrete, Rectangular, 2ft < Wall <= 4ft With Roof
Scenario Description	This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 4" reinforced concrete walls. Wall is designed to support roof. Walls allow for greater storage volume. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$59,135.99	\$13.54
Labor	\$1,667.20	\$0.38
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$64,452.91	\$14.76

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	70	\$35,205.80
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	407	\$1,379.73
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	407	\$1,330.89
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	40	\$1,667.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	11
Scenario Name	Concrete, Rectangular, 2 ft < Wall <= 4ft Without Roof
Scenario Description	<p>This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. Walls are NOT designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 4' reinforced concrete walls. Wall is NOT designed to support roof. Walls allow for greater storage volume. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$49,077.19	\$11.24
Labor	\$1,667.20	\$0.38
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$54,394.11	\$12.45

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	50	\$25,147.00
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	407	\$1,379.73
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	407	\$1,330.89
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	40	\$1,667.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	10
Scenario Name	Concrete, Rectangular, 4 ft < Wall <= 6 ft With Roof
Scenario Description	<p>This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical size is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 6" reinforced concrete walls. Wall is designed to support a roof. Walls allow for greater storage volume. Manure and other agricultural by-products are collected and stored near the the source until such time that the manruce can be disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$78,600.47	\$17.99
Labor	\$2,084.00	\$0.48
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$84,334.19	\$19.31

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	106	\$53,311.64
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	611	\$2,071.29
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	611	\$1,997.97
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	50	\$2,084.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	9
Scenario Name	Concrete, Rectangular, 4 ft < Wall <= 6 ft Without Roof
Scenario Description	This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. Walls are NOT designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical size is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 6" reinforced concrete walls. Wall is NOT designed to support a roof. Walls allow for greater storage volume. Manure and other agricultural by-products are collected and stored near the source until such time that the manure can be disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$79,103.41	\$18.11
Labor	\$2,084.00	\$0.48
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$84,837.13	\$19.42

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	107	\$53,814.58
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	611	\$2,071.29
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	611	\$1,997.97
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	50	\$2,084.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	8
Scenario Name	Concrete, Rectangular, 6 ft< Wall <= 8 ft With Roof
Scenario Description	This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. This scenario shall be used in conjunction with 367 - Roofs and Covers. Walls are designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical size is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 8" reinforced concrete walls. Wall is designed to support a roof. Walls allow for greater storage volume. Manure and other agricultural by-products are collected and stored near the the source until such time that the manruce can be disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$115,667.85	\$26.48
Labor	\$2,500.80	\$0.57
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$121,818.37	\$27.89

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	177	\$89,020.38
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	815	\$2,762.85
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	815	\$2,665.05
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	60	\$2,500.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	7
Scenario Name	Concrete, Rectangular, 6 ft < Wall <= 8 ft Without Roof
Scenario Description	This scenario consists of a rectangular concrete facility with reinforced concrete floor and concrete walls. Walls are NOT designed to support a roof. This scenario is intended to store liquid or dry manure. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	The typical size is 4,368 SqFt (42' x 104'). The facility floor is 5" reinforced concrete with 8" reinforced concrete walls. Wall is NOT designed to support a roof. Walls allow for greater storage volume. Manure and other agricultural by-products are collected and stored near the source until such time that the manure can be disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Square Foot Floor Area
Scenario Unit	Square Foot
Scenario Typical Size	4368

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,248.56	\$0.51
Equipment/Installation	\$101,585.53	\$23.26
Labor	\$2,500.80	\$0.57
Mobilization	\$1,401.16	\$0.32
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$107,736.05	\$24.66

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	81	\$2,248.56
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	149	\$74,938.06
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	\$316.71	67	\$21,219.57
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	815	\$2,762.85
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	815	\$2,665.05
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	60	\$2,500.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	4	\$303.84

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	19
Scenario Name	Conc Tank, Buried 110K or >
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume of 110,000 or more CF. Tank is totally or partially buried and has an open top. Tank can also be under a animal facility with the top cover using slats or concrete lid/floor. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 116.5' diameter x 14' deep with a total storage volume of 149,159 CF including freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	149,159

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$7,683.02	\$0.05
Equipment/Installation	\$226,173.37	\$1.52
Labor	\$3,751.20	\$0.03
Mobilization	\$2,405.58	\$0.02
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$240,013.17	\$1.61

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor.	Foot	\$6.05	366	\$2,214.30
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	197	\$5,468.72
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	245	\$123,220.30
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	\$316.71	165	\$52,257.15
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	7612	\$25,804.68
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	7612	\$24,891.24
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	90	\$3,751.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	6	\$1,645.98
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	15
Scenario Name	Conc Tank, Buried 15K<25K
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume from 15,000 to 24,999 CF. The tank is totally or partially buried and has an open top. It can be under an animal facility with the top cover being slats or concrete lid/floor. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533) and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	20,047

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,353.86	\$0.12
Equipment/Installation	\$47,705.69	\$2.38
Labor	\$2,084.00	\$0.10
Mobilization	\$2,131.25	\$0.11
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$54,274.80	\$2.71

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6" wide. Includes materials, equipment and labor.	Foot	\$6.05	178	\$1,076.90
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	46	\$1,276.96
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	55	\$27,661.70
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	\$316.71	39	\$12,351.69
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	1155	\$3,915.45
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	1155	\$3,776.85
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	50	\$2,084.00
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	5	\$1,371.65
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	16
Scenario Name	Conc Tank, Buried 25K<50K
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume from 25,000 to 49,999 CF. Tank is totally or partially buried and has an open top. Tank can be under a animal facility with the top cover being slats or concrete lid/floor. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 60' diameter x 10' deep with a total storage volume of 28,260 CF including freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	28,260

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$2,580.92	\$0.09
Equipment/Installation	\$65,042.78	\$2.30
Labor	\$2,500.80	\$0.09
Mobilization	\$2,131.25	\$0.08
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$72,255.75	\$2.56

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor.	Foot	\$6.05	188	\$1,137.40
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	52	\$1,443.52
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	79	\$39,732.26
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	\$316.71	44	\$13,935.24
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	1708	\$5,790.12
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	1708	\$5,585.16
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	60	\$2,500.80
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	5	\$1,371.65
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	17
Scenario Name	Conc Tank, Buried 50K<75K
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume from 50,000 to 74,999 CF. Tank is totally or partially buried and has an open top, however it can be under a animal facility with the top cover with slats or concrete lid/floor. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 81' diameter x 12' deep with a total storage volume of 61,805 CF including freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	61,805

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,173.90	\$0.07
Equipment/Installation	\$109,805.68	\$1.78
Labor	\$2,917.60	\$0.05
Mobilization	\$2,405.58	\$0.04
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$119,302.76	\$1.93

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor.	Foot	\$6.05	254	\$1,536.70
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	95	\$2,637.20
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	122	\$61,358.68
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	\$316.71	80	\$25,336.80
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	3470	\$11,763.30
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor.	Cubic yard	\$3.27	3470	\$11,346.90
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	70	\$2,917.60
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	6	\$1,645.98
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	13
Scenario Name	Conc Tank, buried <5K
Scenario Description	<p>This scenario consists of installing a small concrete tank with a design storage volume of less than 3,000 CF that is totally or partially buried and has solid top with several openings for direct loading from heavyuse area, gutter cleaner or gravity pipe. Manure is held for 3 to 14 day on smaller operations or transferred to larger storage facility or direct land applied. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533),and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 8' deep x 12' wide x 40' long, with a total volume of 3,840 cubic feet including freeboard. Tank includes concrete top. Sizing based on manure, other wastes, rainfall, lot runoff, etc. Volume does include freeboard. Tanks associated with open lots sized to handle design storm in tank or in combination with lot as per state regulations. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	3840

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$879.04	\$0.23
Equipment/Installation	\$28,847.10	\$7.51
Labor	\$1,250.40	\$0.33
Mobilization	\$1,856.92	\$0.48
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$32,833.46	\$8.55

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor.	Foot	\$6.05	104	\$629.20
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	9	\$249.84
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	48	\$24,141.12
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	\$316.71	8	\$2,533.68
Equipment/Installation	1220	Excavation, common earth, small equipment, 50 ft	Bulk excavation of common earth with dozer <100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	\$2.30	390	\$897.00
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	390	\$1,275.30
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	30	\$1,250.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	14
Scenario Name	Conc Tank, buried 5K<15K
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume from 5,000 to 14,999 CF that is totally or partially buried and has an open top. The tank can also be under an animal facility with the top cover of either slats or solid concrete lid/floor. Design volume does not include freeboard.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. Tank typically 39' diameter x 8' deep, with a total volume of 9,552 CF including freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	9552

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,348.82	\$0.14
Equipment/Installation	\$28,544.40	\$2.99
Labor	\$1,667.20	\$0.17
Mobilization	\$1,856.92	\$0.19
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$33,417.34	\$3.50

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6" wide. Includes materials, equipment and labor.	Foot	\$6.05	122	\$738.10
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	22	\$610.72
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	38	\$19,111.72
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	\$316.71	18	\$5,700.78
Equipment/Installation	1220	Excavation, common earth, small equipment, 50 ft	Bulk excavation of common earth with dozer <100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	\$2.30	670	\$1,541.00
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	670	\$2,190.90
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	40	\$1,667.20
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	4	\$1,097.32
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	18
Scenario Name	Conc Tank, Buried 75K<110K
Scenario Description	<p>This scenario consists of installing a concrete tank that has a design storage volume from 75,000 to 109,999 CF. Tank is totally or partially buried and has an open top. Tank can also be under an animal facility with the top cover using slats or concrete lid/floor. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620).</p>
Before Practice Situation	Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.
After Practice Situation	Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Tank typically 101' diameter x 12' deep with a total storage volume of 96,093 CF including freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	96,093

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,026.33	\$0.06
Equipment/Installation	\$149,158.53	\$1.55
Labor	\$3,334.40	\$0.03
Mobilization	\$2,405.58	\$0.03
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$160,924.84	\$1.67

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1614	Waterstop, PVC, ribbed, 3/16" x 6"	Waterstop, PVC, ribbed, 3/16" thick by 6" wide. Includes materials, equipment and labor.	Foot	\$6.05	317	\$1,917.85
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	148	\$4,108.48
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$502.94	153	\$76,949.82
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	\$316.71	123	\$38,955.33
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	4993	\$16,926.27
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor.	Cubic yard	\$3.27	4993	\$16,327.11
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	80	\$3,334.40
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	6	\$1,645.98
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	10	\$759.60

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Environmental Engineering
Practice Code/Name	313 - Waste Storage Facility
Scenario ID	2
Scenario Name	Earthen Storage Facility >50K ft3 Storage
Scenario Description	<p>An earthen waste impoundment constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario has a design storage volume of more than 50,000 ft3. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Earthen storage liners are addressed with another standard. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Adequately protect liner at agitation and access points.</p> <p>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629).</p>
Before Practice Situation	Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.
After Practice Situation	An earthen storage structure constructed from on-site material provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Total volume = 199,878 ft3; 159'x159' (top); 3:1 inside and outside side slopes; top of berm = 10'; cut/fill ratio = 1.25; Total depth = 14.0', including freeboard. Total volume includes freeboard, precipitation, solids build up, etc.
Scenario Feature Measure	Total Volume
Scenario Unit	Cubic Foot
Scenario Typical Size	199,878

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$47.88	\$0.00
Equipment/Installation	\$51,295.92	\$0.26
Labor	\$1,667.20	\$0.01
Mobilization	\$2,204.32	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$55,215.32	\$0.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1120	Structural steel tubing, 2" diameter	Structural steel tubing, 2" diameter, 1/8" wall thickness, materials only	Foot	\$3.42	14	\$47.88
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	4812	\$19,248.00
Equipment/Installation	51	Earthfill, Dumped and Spread	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic yard	\$3.27	4812	\$15,735.24
Equipment/Installation	1223	Excavation, common earth, large equipment, 150 ft	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.39	4812	\$16,312.68
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.68	40	\$1,667.20
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	2	\$151.92
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$513.10	4	\$2,052.40