

Practice: 309 - Agrichemical Handling Facility

Scenario # 1 Agrichemical Storage with Handling Pad inside an enclosed building

Louisiana

Scenario Description:

This practice scenario is an agrichemical handling facility for storage and mixing and loading operations. This practice addresses water quality degradation and due to mis-handling, storing and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Roof Runoff Management (558), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

An agrichemical storage and handling facility is constructed inside an enclosed building. The average size of the agrichemical handling facility for storage and mixing and loading is 35' x 40' with an application equipment length of 36 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading with proper storage of associated dry and/or liquid agrichemicals. The concrete is sealed and sloped to a collection sump, facility containment is surrounded by square and ramped curbs. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Total Containment Area

Scenario Typical Size:	1400	Square Foot	Unit Cost	\$18.85
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	22	Cubic yard	\$23.31	\$512.82
Materials	Post Frame Building, enclosed 4 sides	1760	Square Foot	\$9.77	\$17,195.20
Materials	Painting, concrete surface, impermeable	1400	Square Foot	\$0.90	\$1,260.00
Equip./Install.	Concrete, CIP, slab on grade, reinforced	17	Cubic yard	\$209.92	\$3,568.64
Equip./Install.	Dozer, 80 HP	4	Hour	\$49.22	\$196.88
Equip./Install.	Concrete, CIP, formed reinforced	10	Cubic yard	\$333.36	\$3,333.60
Labor	Equipment Operators, Heavy	4	Hour	\$25.62	\$102.48
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
Mobilization	Mobilization, small equipment	1	Each	\$91.12	\$91.12
				Total Cost:	\$26,394.25

Practice: 309 - Agrichemical Handling Facility

Scenario # 2 Earthen Liquid Agrichemical Storage with a Handling Pad

Louisiana

Scenario Description:

This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals along with a mixing and loading pad. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

An agrichemical handling facility is constructed for storage of liquid agrichemicals along with a handling pad for mixing and loading operations. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in an earthen lined containment with bottom dimensions of 30 ft x 40 ft. A handling pad for mixing and loading is located next to the liquid containment and is 20' x 40' with an application equipment length of 36 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading. The concrete is sealed and sloped to a collection sump. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Floor surface area of Liquid Containment Area + Handling pad

Scenario Typical Size:	2000	Square Foot	Unit Cost	\$3.32
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	13	Cubic yard	\$23.31	\$303.03
Materials	Aggregate, Gravel, Graded	9	Cubic yard	\$24.23	\$218.07
Materials	Painting, concrete surface, impermeable	800	Square Foot	\$0.90	\$720.00
Equip./Install.	Excavation, Common Earth, side cast, small equipment	235	Cubic yard	\$1.80	\$423.00
Equip./Install.	Geotextile, woven	70	Square Yard	\$2.13	\$149.10
Equip./Install.	Concrete, CIP, formed reinforced	13	Cubic yard	\$333.36	\$4,333.68
Labor	General Labor	8	Hour	\$18.57	\$148.56
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
Mobilization	Mobilization, very small equipment	2	Each	\$36.97	\$73.94
				Total Cost:	\$6,636.40

Practice: 309 - Agrichemical Handling Facility

Scenario # 3 Fabricated Liquid Agrichemical Storage with a Handling Pad

Scenario Description:

Louisiana

This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals along with a mixing and loading pad. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

An agrichemical handling facility is constructed for storage of liquid agrichemicals along with a handling pad for mixing and loading operations. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in fabricated containment that is 30 ft x 40 ft with flexible membrane lined walls. The walls are of modular blocks stacked two for a 4ft wall height on four sides. A handling pad for mixing and loading is located next to the liquid containment and is 16' x 32' with an application equipment length of 28 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading. The concrete is sealed and sloped to a collection sump. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Liquid Containment Area + Handling Pad

Scenario Typical Size:	1712	Square Foot	Unit Cost	\$7.49
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	27	Cubic yard	\$23.31	\$629.37
Materials	Aggregate, Gravel, Graded	4	Cubic yard	\$24.23	\$96.92
Materials	Block, pre-cast concrete, modular	42	Cubic Yard	\$102.58	\$4,308.36
Materials	Painting, concrete surface, impermeable	512	Square Foot	\$0.90	\$460.80
Equip./Install.	Concrete, CIP, slab on grade, reinforced	19	Cubic yard	\$209.92	\$3,988.48
Equip./Install.	Dozer, 80 HP	8	Hour	\$49.22	\$393.76
Equip./Install.	Geotextile, woven	15	Square Yard	\$2.13	\$31.95
Equip./Install.	Concrete, CIP, formed reinforced	8	Cubic yard	\$333.36	\$2,666.88
Equip./Install.	Skidsteer, 80 HP	8	Hour	\$31.28	\$250.24
				Total Cost:	\$12,826.76

Practice: 309 - Agrichemical Handling Facility

Scenario # 4 Outdoor Liquid Agrichemical Storage with a Roofed Building for Dry Chemical Storage and Handling Pad

Scenario Description:

Louisiana

This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals along with a roofed mixing and loading pad that is also sized to store dry chemicals. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roof Runoff Management (558)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

An agrichemical handling facility is constructed for storage of liquid agrichemicals along with a roofed building to store dry agrichemicals with a handling pad for mixing and loading operations. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in an earthen lined containment with bottom dimensions of 60 ft x 40 ft. A roofed building for dry agrichemicals and handling pad for mixing and loading is located next to the liquid containment and is 30' x 40' with an application equipment length of 36 ft. The handling pad for mixing and loading operations is roofed and sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading. The concrete is sealed and sloped to a collection sump, facility containment has at least two sides constructed of 5 ft post and plant walls. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Floor surface area of Liquid Containment Area + Handling pad

Scenario Typical Size:	3600	Square Foot	Unit Cost	\$9.15
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	19	Cubic yard	\$23.31	\$442.89
Materials	Aggregate, Gravel, Graded	36	Cubic yard	\$24.23	\$872.28
Materials	Post Frame Building, enclosed 4 sides	2000	Square Foot	\$9.77	\$19,540.00
Materials	Dimension Lumber, Treated	853	Board Foot	\$0.73	\$622.69
Materials	Painting, concrete surface, impermeable	1200	Square Foot	\$0.90	\$1,080.00
Equip./Install.	Concrete, CIP, slab on grade, reinforced	1.5	Cubic yard	\$209.92	\$314.88
Equip./Install.	Excavation, Common Earth, side cast, small equipment	380	Cubic yard	\$1.80	\$684.00
Equip./Install.	Geotextile, woven	231	Square Yard	\$2.13	\$492.03
Equip./Install.	Concrete, CIP, formed reinforced	19	Cubic yard	\$333.36	\$6,333.84
Labor	General Labor	120	Hour	\$18.57	\$2,228.40
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
Mobilization	Mobilization, very small equipment	2	Each	\$36.97	\$73.94
				Total Cost:	\$32,951.97

Practice: 309 - Agrichemical Handling Facility

Scenario # 5 Agrichemical Handling Pad for mixing and loading

Louisiana

Scenario Description:

This practice scenario is an agrichemical handling facility for mixing and loading operations. This practice addresses water quality degradation and due to mis-handling, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

This scenario is an agrichemical handling facility pad for mixing and loading operations. The average size of the agrichemical handling pad for mixing and loading is 16' x 40' with an application equipment length of 36 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading. The concrete is sealed and sloped to a collection sump, containment of the pad is surrounded by sloped and ramped reinforced concrete. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Total Containment Area

Scenario Typical Size:	640	Square Foot	Unit Cost	\$6.32
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	10	Cubic yard	\$23.31	\$233.10
Materials	Painting, concrete surface, impermeable	640	Square Foot	\$0.90	\$576.00
Equip./Install.	Concrete, CIP, slab on grade, reinforced	12	Cubic yard	\$209.92	\$2,519.04
Equip./Install.	Dozer, 80 HP	4	Hour	\$49.22	\$196.88
Labor	Equipment Operators, Light	4	Hour	\$19.22	\$76.88
Labor	General Labor	12	Hour	\$18.57	\$222.84
Mobilization	Mobilization, small equipment	2	Each	\$91.12	\$182.24
Mobilization	Mobilization, very small equipment	1	Each	\$36.97	\$36.97
				Total Cost:	\$4,043.95

Practice: 309 - Agrichemical Handling Facility

Scenario # 6 Agrichemical Storage with Handling Pad in an Existing Building

Scenario Description:

Louisiana

This practice scenario is an agrichemical handling facility for storage and mixing and loading operations. This practice addresses water quality degradation and due to mis-handling, storing and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Roof Runoff Management (558), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595)

Before Practice Situation:

Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water.

After Practice Situation:

An agrichemical storage and handling facility is constructed inside an existing building. The average size of the agrichemical handling facility for storage and mixing and loading is 24 ft x 36 ft with an application equipment length of 30 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading with proper storage of associated dry and/or liquid agrichemicals. The concrete is sealed and sloped to a collection sump, facility containment is surrounded by square and ramped curbs and independent of the existing building. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure:

Total Containment Area

Scenario Typical Size:	864	Square Foot	Unit Cost	\$9.43
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	14	Cubic yard	\$23.31	\$326.34
Materials	Painting, concrete surface, impermeable	864	Square Foot	\$0.90	\$777.60
Equip./Install.	Demolition, concrete	7	Cubic Yard	\$14.12	\$98.84
Equip./Install.	Concrete, CIP, slab on grade, reinforced	14	Cubic yard	\$209.92	\$2,938.88
Equip./Install.	Dozer, 80 HP	4	Hour	\$49.22	\$196.88
Equip./Install.	Concrete, CIP, formed reinforced	8	Cubic yard	\$333.36	\$2,666.88
Equip./Install.	Skidsteer, 80 HP	10	Hour	\$31.28	\$312.80
Labor	Equipment Operators, Light	14	Hour	\$19.22	\$269.08
Labor	General Labor	16	Hour	\$18.57	\$297.12
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
Mobilization	Mobilization, small equipment	1	Each	\$91.12	\$91.12
Mobilization	Mobilization, very small equipment	1	Each	\$36.97	\$36.97
				Total Cost:	\$8,146.02