

**Scenario Worksheet**

**Practice and Scenario Description:**

<b>Information Type</b>	<b>Data</b>
Region	New England
State	Connecticut
Discipline Group	Engineering General
Practice Code/Name	S21C - Pond Sealing or Lining, Bentonite Sealant
Scenario ID	2
Scenario Name	Bentonite Treatment - Covered
Scenario Description	Construction of a compacted soil liner, treated with bentonite, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes incorporation of the bentonite with the soil under proper moisture conditions, compaction to the designed liner thickness, and placement of soil cover over the treated liner. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). Associated practice PS378, PS313.
Before Practice Situation	In-place soils at site exhibit seepage rates in excess of acceptable limits. Soils are suitable for treatment with bentonite.
After Practice Situation	Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.
Scenario Feature Measure	Volume of Liner Material (includes 1 foot of soil cover over liner)
Scenario Unit	Cubic Yard
Scenario Typical Size	1613 Typical pond liner: 1 ft. thick with 1 ft. soil cover x 1 acre in area

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$61,155.90	\$37.91
Equipment/Installation	\$13,190.36	\$8.18
Labor	\$393.20	\$0.24
Mobilization	\$274.33	\$0.17
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$75,013.79	\$46.51

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	41	Bentonite	Bentonite, includes materials (50# bag)	Each	\$11.70	5227	\$61,155.90
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	3227	\$12,908.00
Equipment/Installation	962	Tractor, agricultural, 120 HP	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$47.06	6	\$282.36
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	6	\$143.40
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	2	\$83.36
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$83.22	2	\$166.44
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	1	\$274.33

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<b>Information Type</b>	<b>Data</b>
Region	New England
State	Connecticut
Discipline Group	Engineering General
Practice Code/Name	S21C - Pond Sealing or Lining, Bentonite Sealant
Scenario ID	1
Scenario Name	Bentonite Treatment - Uncovered
Scenario Description	Construction of a compacted soil liner, treated with bentonite, to reduce seepage from ponds or waste storage impoundment structures. Practice implementation includes incorporation of the bentonite with the soil under proper moisture conditions, compaction to the designed liner thickness. Practice implementation may require filter compatibility with the subgrade (graded filter or geotextile). Associated practice PS378, PS313.
Before Practice Situation	In-place soils at site exhibit seepage rates in excess of acceptable limits. Soils are suitable for treatment with dispersants.
After Practice Situation	Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.
Scenario Feature Measure	Volume of Liner Material
Scenario Unit	Cubic Yard
Scenario Typical Size	1613 Typical pond liner: 1 ft. thick x 1 acre in area

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$61,155.90	\$37.91
Equipment/Installation	\$6,734.36	\$4.18
Labor	\$393.20	\$0.24
Mobilization	\$274.33	\$0.17
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
<b>Total</b>	<b>\$68,557.79</b>	<b>\$42.50</b>

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	41	Bentonite	Bentonite, includes materials (50# bag)	Each	\$11.70	5227	\$61,155.90
Equipment/Installation	49	Earthfill, Roller Compacted	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.00	1613	\$6,452.00
Equipment/Installation	962	Tractor, agricultural, 120 HP	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$47.06	6	\$282.36
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	6	\$143.40
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