

**Practice: 351 - Water Well Decommissioning**

**Scenario: #1 - Dug Well**

**Scenario Description:**

A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations.

**Before Situation:**

Shallow well or hand dug well 36 inches in diameter and 20 feet deep that is not being used.

**After Situation:**

Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Place compacted earthfill in the well up to five feet from the surface. The top five feet of the well is filled with cement grout or bentonite. Associated practices: 342 Critical Area Seeding

**Scenario Feature Measure:** Each Well to be Decommissioned

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$2,855.24

**Scenario Cost/Unit:** \$2,855.24

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	5.3	\$30.48
Grout pump	1334	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$14.78	3	\$44.34
<b>Labor</b>						
General Labor	231	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	\$24.48	3	\$73.44
<b>Materials</b>						
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.79	1	\$2.79
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$943.73	1.8	\$1,698.71
<b>Mobilization</b>						
Mobilization, very small equipment	1137	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	\$72.52	3	\$217.56
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	3	\$787.92

**Practice: 351 - Water Well Decommissioning**

**Scenario: #2 - Drilled or driven well, sealed with grout**

**Scenario Description:**

A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations.

**Before Situation:**

A drilled or driven well with a 6" diameter casing and a depth of 150 feet that is not being used

**After Situation:**

Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Grout shall be pumped into the well starting at the bottom and working toward the top. Associated practices: 342 Critical Area Seeding

**Scenario Feature Measure:** Each Well to be Decommissioned

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$1,565.81

**Scenario Cost/Unit:** \$1,565.81

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Grout pump	1334	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$14.78	6	\$88.68
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$40.82	3	\$122.46
General Labor	231	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	\$24.48	6	\$146.88
<b>Materials</b>						
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.79	1	\$2.79
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite gout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$943.73	1.2	\$1,132.48
<b>Mobilization</b>						
Mobilization, very small equipment	1137	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	\$72.52	1	\$72.52

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**Scenario: #3 - Drilled or driven well, sealed with bentonite**

**Scenario Description:**

A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations.

**Before Situation:**

A drilled or driven well with a 6" diameter casing and a depth of 150 feet that is not being used

**After Situation:**

Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Bentonite chips shall be screened and dropped into the well in a manner that prevents bridging of the bentonite. Associated practices: 342 Critical Area Seeding

**Scenario Feature Measure:** Each Well to be Decommissioned

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$858.10

**Scenario Cost/Unit:** \$858.10

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Labor</b>						
General Labor	231	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	\$24.48	5	\$122.40
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$40.82	3	\$122.46
<b>Materials</b>						
Bentonite	41	Bentonite, includes materials (50# bag)	Each	\$12.51	43	\$537.93
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.79	1	\$2.79
<b>Mobilization</b>						
Mobilization, very small equipment	1137	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	\$72.52	1	\$72.52