

**Practice: 642 - Water Well**

**Scenario # 1 Dug Well**

**Scenario Description:**

**Louisiana**

Typical construction is for the excavation of a shallow dug well. The purpose of the practice is to provide water for livestock. A typical dug well is 2 to 4 foot in diameter and 15 feet in depth. The well is excavated using a backhoe. Excavate to a depth where the water recharge is greater than the equipment can remove. Washed gravel is placed in the base of the dug opening. Concrete casings about 2" thick are installed to hold the water. Pea gravel is placed above the washed gravel to transition to the earth backfill. The hole is backfilled and sloped to direct surface water away from entering the cover.

**Before Practice Situation:**

Livestock have insufficient water or are fenced from their water source.

**After Practice Situation:**

Sufficient water is available for livestock. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:**

Linear Foot of well depth

<b>Scenario Typical Size:</b>	15	Linear Foot	Unit Cost	\$105.49
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	3	Cubic yard	\$24.23	\$72.69
Materials	Test, Standard Water Test, Well Water	1	Each	\$52.20	\$52.20
Materials	Aggregate, gravel, washed, pea gravel	1	Cubic Yard	\$44.22	\$44.22
Materials	Grout, cement	1	Cubic Yard	\$66.14	\$66.14
Materials	Chlorine	5	Gallon	\$2.32	\$11.60
Equip./Install.	Concrete, CIP, formed reinforced	1	Cubic yard	\$333.36	\$333.36
Equip./Install.	Backhoe, 80 HP	10	Hour	\$40.48	\$404.80
Labor	Equipment Operators, Heavy	10	Hour	\$25.62	\$256.20
Labor	General Labor	10	Hour	\$18.57	\$185.70
Mobilization	Mobilization, General labor	0.5	Hour	\$18.52	\$9.26
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
Mobilization	Mobilization, Heavy Equipment Operator	0.5	Hour	\$25.38	\$12.69
				Total Cost:	\$1,582.37

**Practice: 642 - Water Well**

**Scenario # 2 Deep Well**

**Scenario Description:**

**Louisiana**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur > 600 feet of the ground surface. The well shall be drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or micro-irrigation. Well casings are 4-6" in diameter. Cost estimate based on a well 800 feet deep, with steel casing installed to a depth of 775 feet.

**Before Practice Situation:**

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

**After Practice Situation:**

Sufficient water is available for livestock or micro-irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:**

Linear Foot of well depth

<b>Scenario Typical Size:</b>	800	Linear Foot	Unit Cost	\$61.71
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Well Casing, Metal, 6"	775	Foot	\$49.82	\$38,610.50
Materials	Chlorine	1	Gallon	\$2.32	\$2.32
Materials	Well Cap, 6"	1	Each	\$32.35	\$32.35
Materials	Grout, cement	2	Cubic Yard	\$66.14	\$132.28
Materials	Test, Standard Water Test, Well Water	1	Each	\$52.20	\$52.20
Materials	Well Screen, stainless steel, 6"	25	Foot	\$219.24	\$5,481.00
Equip./Install.	Rotary Drill Rig with Operator	35	Hour	\$140.24	\$4,908.40
Mobilization	Mobilization, Heavy Equipment Operator	0.5	Hour	\$25.38	\$12.69
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
				<b>Total Cost:</b>	<b>\$49,365.25</b>

**Practice: 642 - Water Well****Scenario # 3 Small Farm Well, 4" Plastic****Scenario Description:****Louisiana**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 300 feet of the ground surface. A well is drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. A PVC cap and grouting are installed to prevent a direct conduit to ground water, and the well is disinfected in accordance with state and local regulations. The purpose of the practice is to provide water for livestock or small irrigation systems, such as, micro-irrigation. Cost estimate is based on a well depth of 100 feet, with well casing 4" in diameter, PVC casing installed to a depth of 50 feet, and yield of <= 250 gpm. In general, the crush strength of plastic well casing is not sufficient for wells > 300 ft.

**Before Practice Situation:**

Livestock have insufficient water or are fenced from their water source or there is insufficient water for use in micro-irrigation/small irrigation systems.

**After Practice Situation:**

Sufficient water is available for livestock or irrigation. Utilize Pumping Plant (533) and Pipeline (516) or Irrigation water conveyance (430) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:**

Linear Foot of well depth

<b>Scenario Typical Size:</b>	100	Linear Foot	Unit Cost	\$15.77
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Well Casing, Plastic, 2"	0	Foot	\$4.07	\$0.00
Materials	Well Casing, Plastic, 4"	50	Foot	\$9.72	\$486.00
Materials	Test, Standard Water Test, Well Water	1	Each	\$52.20	\$52.20
Materials	Well Screen, plastic, 4"	50	Foot	\$6.52	\$326.00
Materials	Well Cap, 4"	1	Each	\$23.64	\$23.64
Materials	Well Screen, plastic, 2"	0	Foot	\$3.84	\$0.00
Materials	Grout, cement	2	Cubic Yard	\$66.14	\$132.28
Materials	Chlorine	1	Gallon	\$2.32	\$2.32
Equip./Install.	Rotary Drill Rig with Operator	3	Hour	\$140.24	\$420.72
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
				Total Cost:	\$1,576.67

**Practice: 642 - Water Well**

**Scenario # 4 Small Farm Well, 6" Plastic**

**Scenario Description:**

**Louisiana**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur within 300 feet of the ground surface. A well is drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply. A PVC cap and grouting are installed to prevent a direct conduit to ground water, and the well is disinfected in accordance with state and local regulations. The purpose of the practice is to provide water for livestock or small irrigation systems. Cost estimate is based on a well depth of 100 feet, with well casing 6" in diameter, PVC casing installed to a depth of 50 feet, and yield of <= 250 gpm. In general, the crush strength of plastic well casing is not sufficient for wells > 300 ft.

**Before Practice Situation:**

Livestock have insufficient water or are fenced from their water source or there is insufficient water for use in micro-irrigation/small irrigation systems.

**After Practice Situation:**

Sufficient water is available for livestock or irrigation. Utilize Pumping Plant (533) and Pipeline (516) or Irrigation water conveyance (430) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:**

Linear Foot of well depth

<b>Scenario Typical Size:</b>	100	Linear Foot	Unit Cost	\$25.64
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Well Casing, Plastic, 6"	75	Foot	\$18.14	\$1,360.50
Materials	Chlorine	1	Gallon	\$2.32	\$2.32
Materials	Well Cap, 6"	1	Each	\$32.35	\$32.35
Materials	Grout, cement	2	Cubic Yard	\$66.14	\$132.28
Materials	Test, Standard Water Test, Well Water	1	Each	\$52.20	\$52.20
Materials	Well Screen, plastic, 6"	25	Foot	\$11.61	\$290.25
Equip./Install.	Rotary Drill Rig with Operator	4	Hour	\$140.24	\$560.96
Mobilization	Mobilization, medium equipment	1	Each	\$133.51	\$133.51
				Total Cost:	\$2,564.37