

**Table E-1**  
**City of Amarillo**  
**Develop Potters County Well Field (Ogallala Aquifer)**

Owner: City of Amarillo  
Quantity: 8,000 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	600 gpm	15	Ea.	\$320,000	\$4,800,000
Connection to Pump Station		15	Ea.	\$100,000	\$1,500,000
Storage Tank	1,500,000 Gal	1	Ea.	\$355,000	\$355,000
Engineering and Contingencies (35% for well field)					\$2,329,300
<b>Subtotal for Wellfield and Treatment</b>					<b>\$8,984,300</b>
<b>Transmission System</b>					
Pipeline - Transmission Main	30 inch	105,600	LF	\$86	\$9,081,600
Pump Station	1,000 HP	2	LS	\$2,400,000	\$4,800,000
Easement - Rural	20 Feet	48	AC	\$500	\$24,000
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$4,404,500
<b>Subtotal for Transmission</b>					<b>\$18,310,100</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$27,294,400</b>
<b>Interest During Construction</b>			<b>(12 months)</b>		<b>\$1,137,400</b>
<b>Permitting and Mitigation</b>					<b>\$246,400</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$0</b>
<b>TOTAL CAPITAL COST</b>					<b>\$28,678,200</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$2,500,300
Electricity					\$88,600
Water Treatment (\$0.15 per 1,000 gal)					\$391,000
Operation and Maintenance					\$452,700
<b>Total Annual Cost</b>					<b>\$3,432,600</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$429</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.32</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$117</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.36</b>

**Table E-2**  
**City of Amarillo**  
**Develop Roberts County Well Field (Ogallala Aquifer)**

Owner: City of Amarillo  
Quantity: 11,210 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	800 gpm	15	Ea.	\$320,000	\$4,800,000
Connection to Pump Station		15	Ea.	\$100,000	\$1,500,000
Storage Tank	2,500,000 Gal	1	Ea.	\$510,000	\$510,000
Engineering and Contingencies (35% for well field)					\$2,383,500
<b>Subtotal for Wellfield and Treatment</b>					<b>\$9,193,500</b>
<b>Transmission System</b>					
Pipeline - Transmission Main	36 inch	401,280	LF	\$114	\$45,745,900
Pump Station	2,000 HP	2	LS	\$3,500,000	\$7,000,000
Easement - Rural	20 Feet	184	AC	\$500	\$92,000
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$16,173,800
<b>Subtotal for Transmission</b>					<b>\$69,011,700</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$78,205,200</b>
<b>Interest During Construction</b>			<b>(12 months)</b>		<b>\$3,258,800</b>
<b>Permitting and Mitigation</b>					<b>\$714,700</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$0</b>
<b>TOTAL CAPITAL COST</b>					<b>\$82,178,700</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 30 years)					\$5,970,200
Electricity					\$251,100
Water Treatment (\$0.15 per 1,000 gal)					\$547,900
Operation and Maintenance					\$963,300
<b>Total Annual Cost</b>					<b>\$7,732,500</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$690</b>
Water Cost (\$ per 1,000 gallons)					<b>\$2.12</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$157</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.48</b>

**Table E-3**  
**Canadian River Municipal Water Authority**  
**Expand Roberts County Well Field (Ogallala Aquifer)**

Owner: Canadian River Municipal Water Authority  
Quantity: 31,659 AF/Y

<b>Capital Costs</b>	<b>Cost</b>
Water Rights	\$23,000,000
Collection Pipeline(s)	\$1,800,000
Well Field(s) and Wells	\$18,200,000
<b>Total Capital Cost</b>	<b>\$43,000,000</b>
Engineering, Legal Costs and Contingencies (30% for pipelines & 35% for all other)	\$6,910,000
Interest During Construction (3 years @ 4 percent)	\$6,073,000
<b>Total Project Cost</b>	<b>\$55,983,000</b>
 <b>Annual Costs</b>	
Debt Service (6 percent for 30 years)	\$4,067,000
Pipeline and Well Operation and Maintenance	\$473,000
Pumping Energy Costs (35,391,000 kWh @ \$0.072/kWh)	\$2,547,600
<b>Total Annual Cost</b>	<b>\$7,087,600</b>
 <b>Unit Cost</b>	
Annual Cost of Water (\$ per acft)	\$224
Annual Cost of Water (\$ per 1,000 gallons)	\$0.69

**Table E-4**  
**Canadian River Municipal Water Authority**  
**Replace Capacity of Roberts County Well Field (Ogallala Aquifer) in 2030**

Owner: Canadian River Municipal Water Authority  
Quantity: 15,000 AF/Y

<b>Capital Costs</b>	<b>Cost</b>
Water Rights	\$6,075,000
Collection Pipeline(s)	\$1,000,000
Well Field(s) and Wells	\$10,000,000
<b>Total Capital Cost</b>	<b>\$17,075,000</b>
Engineering, Legal Costs and Contingencies (30% for pipelines & 35% for all other)	\$3,800,000
Interest During Construction (3 years @ 4 percent)	\$2,540,000
<b>Total Project Cost</b>	<b>\$23,415,000</b>
 <b>Annual Costs</b>	
Debt Service (6 percent for 30 years)	\$1,701,000
Pipeline and Well Operation and Maintenance	\$260,000
Pumping Energy Costs (35,391,000 kWh @ \$0.072/kWh)	\$1,207,200
<b>Total Annual Cost</b>	<b>\$3,168,200</b>
 <b>Unit Cost</b>	
Annual Cost of Water (\$ per acft)	\$211
Annual Cost of Water (\$ per 1,000 gallons)	\$0.65

**Table E-5**  
**City of Cactus**  
**Overdraft Ogallala Aquifer with New Wells**

Owner: City of Cactus  
Quantity: 3,200 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	700 gpm	5	Ea.	\$300,000	\$1,500,000
Connection to Pump Station		5	Ea.	\$100,000	\$500,000
Storage Tank (Closed)	700,000 Gal	1	Ea.	\$203,000	\$203,000
Engineering and Contingencies (35% for well field)					\$771,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$2,974,100</b>
<b>Transmission System</b>					
Pipeline - Transmission Main	20 inch	7,920	LF	\$51	\$403,900
Pump Station	100 HP	1	LS	\$620,000	\$620,000
Easement - Rural	20 Feet	4	AC	\$500	\$1,800
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$338,200
<b>Subtotal for Transmission</b>					<b>\$1,363,900</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$4,338,000</b>
<b>Interest During Construction</b>					<b>\$94,000</b>
					(6 months)
<b>Permitting and Mitigation</b>					<b>\$38,700</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$960,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$5,430,700</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$473,500
Electricity (Transmission)					\$18,300
Water Treatment (\$0.15 per 1,000 gal)					\$156,400
Operation and Maintenance					\$89,500
<b>Total Annual Cost</b>					<b>\$737,700</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$231</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.71</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$83</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.25</b>

**Table E-6**  
**City of Dalhart (Dallam County)**  
**Overdraft Ogallala Aquifer in Dallam County with New Wells**

Owner: City of Dalhart  
Quantity: 900 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	500 gpm	2	Ea.	\$162,500	\$325,000
Connection to Pump Station		2	Ea.	\$100,000	\$200,000
Storage Tank (Closed)	200,000 Gal	1	Ea.	\$91,700	\$91,700
Engineering and Contingencies (35% for well field)					\$215,800
<b>Subtotal for Wellfield and Treatment</b>					<b>\$832,500</b>
<b>Transmission System</b>					
Pipeline - Transmission Main	20 inch	10,560	LF	\$51	\$538,600
Pump Station	25 HP	1	LS	\$250,000	\$250,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,400
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$249,100
<b>Subtotal for Transmission</b>					<b>\$1,040,100</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$1,872,600</b>
<b>Interest During Construction</b>		<b>(6 months)</b>			<b>\$40,600</b>
<b>Permitting and Mitigation</b>					<b>\$16,900</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$270,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$2,200,100</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$191,800
Electricity (Transmission)					\$4,700
Water Treatment (\$0.15 per 1,000 gal)					\$44,000
Operation and Maintenance					\$32,500
<b>Total Annual Cost</b>					<b>\$273,000</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$303</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.93</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$90</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.28</b>

**Table E-7**  
**City of Dalhart (Hartley County)**  
**Overdraft Ogallala Aquifer in Hartley County with New Wells**

Owner: City of Dalhart  
Quantity: 180 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	200 gpm	1	Ea.	\$162,500	\$162,500
Connection to Pump Station		1	Ea.	\$100,000	\$100,000
Storage Tank (Closed)	50,000 Gal	1	Ea.	\$40,000	\$40,000
Engineering and Contingencies (35% for well field)					\$105,900
<b>Subtotal for Wellfield and Treatment</b>					<b>\$408,400</b>
 <b>Transmission System</b>					
Pipeline - Transmission Main	8 inch	10,560	LF	\$20	\$211,200
Pump Station	5 HP	1	LS	\$50,000	\$50,000
Easement - Rural	15 Feet	4	AC	\$500	\$1,800
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$80,900
<b>Subtotal for Transmission</b>					<b>\$343,900</b>
 <b>TOTAL CONSTRUCTION COST</b>					 <b>\$752,300</b>
 <b>Interest During Construction</b>					 <b>\$16,300</b>
			<b>(6 months)</b>		
 <b>Permitting and Mitigation</b>					 <b>\$6,800</b>
 <b>Groundwater Rights/ Purchase</b>					 <b>\$54,000</b>
 <b>TOTAL CAPITAL COST</b>					 <b>\$829,400</b>
 <b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$72,300
Electricity (Transmission)					\$1,000
Water Treatment (\$0.15 per 1,000 gal)					\$8,800
Operation and Maintenance					\$13,100
<b>Total Annual Cost</b>					<b>\$95,200</b>
 <b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$529</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.62</b>
 <b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$127</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.39</b>

**Table E-8**  
**City of Dumas**  
**Overdraft Ogallala Aquifer with New Wells**

Owner: City of Dumas  
Quantity: 2,300 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	800 gpm	3	Ea.	\$280,000	\$840,000
Connection to Pump Station		3	Ea.	\$100,000	\$300,000
Storage Tank	500,000 Gal	1	Ea.	\$155,000	\$155,000
Engineering and Contingencies (35% for well field)					\$453,300
<b>Subtotal for Wellfield and Treatment</b>					<b>\$1,748,300</b>
 <b>Transmission System</b>					
Pipeline - Rural	18 inch	52,800	LF	\$42	\$2,217,600
Pump Station	200 HP	1	LS	\$930,000	\$930,000
Easement - Rural	20 Feet	24	AC	\$500	\$12,100
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$990,800
<b>Subtotal for Transmission</b>					<b>\$4,150,500</b>
 <b>TOTAL CONSTRUCTION COST</b>					 <b>\$5,898,800</b>
 <b>Interest During Construction</b>					 <b>\$245,800</b>
					(12 months)
 <b>Permitting and Mitigation</b>					 <b>\$53,300</b>
 <b>Groundwater Rights/ Purchase</b>					 <b>\$690,000</b>
 <b>TOTAL CAPITAL COST</b>					 <b>\$6,887,900</b>
 <b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$600,500
Electricity (Transmission)					\$13,900
Water Treatment (\$0.15 per 1,000 gal)					\$112,400
Operation and Maintenance					\$93,400
<b>Total Annual Cost</b>					<b>\$820,200</b>
 <b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$357</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.09</b>
 <b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$96</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.29</b>

**Table E-9**  
**City of Stratford**  
**Overdraft Ogallala Aquifer with New Wells**

Owner: City of Stratford  
Quantity: 450 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	600 gpm	1	Ea.	\$162,500	\$162,500
Connection to Pump Station		1	Ea.	\$100,000	\$100,000
Storage Tank (Closed)	100,000 Gal	1	Ea.	\$75,000	\$75,000
Engineering and Contingencies (35% for well field)					\$118,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$455,600</b>
<b>Transmission System</b>					
Pipeline - Rural	10 inch	5,280	LF	\$24	\$126,700
Pump Station	15 HP	1	LS	\$150,000	\$150,000
Easement - Rural	20 Feet	2	AC	\$500	\$1,200
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$90,500
<b>Subtotal for Transmission</b>					<b>\$368,400</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$824,000</b>
<b>Interest During Construction</b>					<b>\$17,900</b>
					(6 months)
<b>Permitting and Mitigation</b>					<b>\$7,400</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$135,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$984,300</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$85,800
Electricity (Transmission)					\$2,500
Water Treatment (\$0.15 per 1,000 gal)					\$22,000
Operation and Maintenance					\$16,100
<b>Total Annual Cost</b>					<b>\$126,400</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$281</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.86</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$90</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.28</b>

**Table E-10**  
**City of Sunray**  
**Overdraft Ogallala with New Groundwater Wells**

Owner: City of Sunray  
Quantity: 550 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	700 gpm	1	Ea.	\$162,500	\$162,500
Connection to Pump Station		1	Ea.	\$100,000	\$100,000
Storage Tank (Closed)	125,000 Gal	1	Ea.	\$315,000	\$315,000
Engineering and Contingencies (35% for well field)					\$202,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$779,600</b>
 <b>Transmission System</b>					
Pipeline - Rural	10 inch	5,280	LF	\$24	\$126,700
Pump Station	15 HP	1	LS	\$150,000	\$150,000
Easement - Rural	20 Feet	2	AC	\$500	\$1,200
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$90,500
<b>Subtotal for Transmission</b>					<b>\$368,400</b>
 <b>TOTAL CONSTRUCTION COST</b>					 <b>\$1,148,000</b>
 <b>Interest During Construction</b>					 <b>\$24,900</b>
					<b>(6 months)</b>
 <b>Permitting and Mitigation</b>					 <b>\$10,300</b>
 <b>Groundwater Rights/ Purchase</b>					 <b>\$165,000</b>
 <b>TOTAL CAPITAL COST</b>					 <b>\$1,348,200</b>
 <b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$117,500
Electricity (Transmission)					\$1,600
Water Treatment (\$0.15 per 1,000 gal)					\$26,900
Operation and Maintenance					\$23,300
<b>Total Annual Cost</b>					<b>\$169,300</b>
 <b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$308</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.94</b>
 <b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$94</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.29</b>

**Table E-11**  
**County-Other WUGs with Needs less than 200 ac-ft/yr**  
**Install New Groundwater Well**

Owner: County-Other  
Quantity: 200 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	300 gpm	1	Ea.	\$137,500	\$137,500
Connection to Pump Station		1	Ea.	\$100,000	\$100,000
Storage Tank (Closed)	50,000 Gal	1	Ea.	\$40,000	\$40,000
Engineering and Contingencies (35% for well field)					\$97,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$374,600</b>
 <b>Transmission System</b>					
Pipeline - Rural	8 inch	10,560	LF	\$20	\$211,200
Pump Station	10 HP	1	LS	\$100,000	\$100,000
Easement - Rural	15 Feet	4	AC	\$500	\$1,800
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$98,400
<b>Subtotal for Transmission</b>					<b>\$411,400</b>
 <b>TOTAL CONSTRUCTION COST</b>					 <b>\$786,000</b>
 <b>Interest During Construction</b>					 <b>\$17,000</b>
					<b>(6 months)</b>
 <b>Permitting and Mitigation</b>					 <b>\$7,100</b>
 <b>Groundwater Rights/ Purchase</b>					 <b>\$60,000</b>
 <b>TOTAL CAPITAL COST</b>					 <b>\$870,100</b>
 <b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$75,900
Electricity (Transmission)					\$1,100
Water Treatment (\$0.15 per 1,000 gal)					\$9,800
Operation and Maintenance					\$13,800
<b>Total Annual Cost</b>					<b>\$100,600</b>
 <b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$503</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.54</b>
 <b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$124</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.38</b>

**Table E-12**  
**County-Other WUGs with Needs around 600 ac-ft/yr**  
**Install New Groundwater Wells**

Owner: County-Other  
Quantity: 600 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	400 gpm	2	Ea.	\$150,000	\$300,000
Connection to Pump Station		2	Ea.	\$100,000	\$200,000
Storage Tank (Closed)	120,000 Gal	1	Ea.	\$80,000	\$80,000
Engineering and Contingencies (35% for well field)					\$203,000
<b>Subtotal for Wellfield and Treatment</b>					<b>\$783,000</b>
<b>Transmission System</b>					
Pipeline - Rural	10 inch	10,560	LF	\$24	\$253,400
Pump Station	25 HP	1	LS	\$250,000	\$250,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,400
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$163,500
<b>Subtotal for Transmission</b>					<b>\$669,300</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$1,452,300</b>
<b>Interest During Construction</b>			<b>(12 months)</b>		<b>\$60,500</b>
<b>Permitting and Mitigation</b>					<b>\$13,000</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$180,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$1,705,800</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$148,700
Electricity (Transmission)					\$3,700
Water Treatment (\$0.15 per 1,000 gal)					\$29,300
Operation and Maintenance					\$27,900
<b>Total Annual Cost</b>					<b>\$209,600</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$349</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.07</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$102</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.31</b>

**Table E-13**  
**County-Other WUGs with Needs around 1,000 ac-ft/yr**  
**Install New Groundwater Wells**

Owner: County-Other  
Quantity: 1,000 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	600 gpm	2	Ea.	\$162,500	\$325,000
Connection to Pump Station		2	Ea.	\$100,000	\$200,000
Storage Tank (Closed)	200,000 Gal	1	Ea.	\$91,700	\$91,700
Engineering and Contingencies (35% for well field)					\$215,800
<b>Subtotal for Wellfield and Treatment</b>					<b>\$832,500</b>
<b>Transmission System</b>					
Pipeline - Rural	14 inch	10,560	LF	\$32	\$337,900
Pump Station	50 HP	1	LS	\$400,000	\$400,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,400
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$241,400
<b>Subtotal for Transmission</b>					<b>\$981,700</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$1,814,200</b>
<b>Interest During Construction</b>			<b>(12 months)</b>		<b>\$75,600</b>
<b>Permitting and Mitigation</b>					<b>\$16,300</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$300,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$2,206,100</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$192,300
Electricity (Transmission)					\$5,600
Water Treatment (\$0.15 per 1,000 gal)					\$48,900
Operation and Maintenance					\$34,600
<b>Total Annual Cost</b>					<b>\$281,400</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$281</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.86</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$89</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.27</b>

**Table E-14**  
**County-Other WUGs with Needs around 2,000 ac-ft/yr**  
**Install New Groundwater Wells**

Owner: County-Other  
Quantity: 2,000 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	800 gpm	3	Ea.	\$200,000	\$600,000
Connection to Pump Station		3	Ea.	\$100,000	\$300,000
Storage Tank (Closed)	400,000 Gal	1	Ea.	\$133,000	\$133,000
Engineering and Contingencies (35% for well field)					\$361,600
<b>Subtotal for Wellfield and Treatment</b>					<b>\$1,394,600</b>
 <b>Transmission System</b>					
Pipeline - Rural	18 inch	10,560	LF	\$42	\$443,500
Pump Station	75 HP	1	LS	\$510,000	\$510,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,400
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$311,600
<b>Subtotal for Transmission</b>					<b>\$1,267,500</b>
 <b>TOTAL CONSTRUCTION COST</b>					 <b>\$2,662,100</b>
 <b>Interest During Construction</b>					 <b>\$110,900</b>
					(12 months)
 <b>Permitting and Mitigation</b>					 <b>\$23,800</b>
 <b>Groundwater Rights/ Purchase</b>					 <b>\$600,000</b>
 <b>TOTAL CAPITAL COST</b>					 <b>\$3,396,800</b>
 <b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$296,100
Electricity (Transmission)					\$11,200
Water Treatment (\$0.15 per 1,000 gal)					\$97,800
Operation and Maintenance					\$51,600
<b>Total Annual Cost</b>					<b>\$456,700</b>
 <b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					\$228
Water Cost (\$ per 1,000 gallons)					\$0.70
 <b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					\$80
Water Cost (\$ per 1,000 gallons)					\$0.25

Table E-15

**Armstrong**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	58,560
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	917	1,147	1,376	1,606	1,835	2,064	0
Convert to Dry	0	0	0	0	0	0	492,229
Irrigation Equipment	917	1,835	2,752	4,587	5,505	6,422	1,161,030
PET Network	1,018	1,018	1,018	1,018	1,018	1,018	4,886
Precipitation Enhancement	3,257	3,257	3,257	3,257	3,257	3,257	14,659
<b>Total</b>	<b>6,110</b>	<b>7,257</b>	<b>8,404</b>	<b>10,468</b>	<b>11,615</b>	<b>12,762</b>	<b>1,731,363</b>

**Carson**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	1,277,280
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	7,272	9,091	10,909	12,727	14,545	16,363	0
Convert to Dry	0	0	0	0	0	0	3,169,335
Irrigation Equipment	7,272	14,545	21,817	36,362	43,635	50,907	9,203,009
PET Network	8,069	8,069	8,069	8,069	8,069	8,069	38,731
Precipitation Enhancement	25,820	25,820	25,820	25,820	25,820	25,820	116,192
<b>Total</b>	<b>48,434</b>	<b>57,525</b>	<b>66,615</b>	<b>82,978</b>	<b>92,069</b>	<b>101,159</b>	<b>13,804,547</b>

**Childress**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	0
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	723	904	1,085	1,265	1,446	1,627	0
Convert to Dry	0	0	0	0	0	0	385,613
Irrigation Equipment	723	1,446	2,169	3,615	4,338	5,061	914,929
PET Network	802	802	802	802	802	802	3,850
Precipitation Enhancement	2,567	2,567	2,567	2,567	2,567	2,567	11,551
<b>Total</b>	<b>4,815</b>	<b>5,719</b>	<b>6,623</b>	<b>8,249</b>	<b>9,153</b>	<b>10,057</b>	<b>1,315,943</b>

**Collingsworth**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	2,400
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	1,609	2,012	2,414	2,816	3,219	3,621	0
Convert to Dry	0	0	0	0	0	0	320,483
Irrigation Equipment	1,609	3,219	4,828	8,047	9,657	11,266	2,036,666
PET Network	1,786	1,786	1,786	1,786	1,786	1,786	8,571
Precipitation Enhancement	5,714	5,714	5,714	5,714	5,714	5,714	25,714
<b>Total</b>	<b>10,719</b>	<b>12,730</b>	<b>14,742</b>	<b>18,363</b>	<b>20,375</b>	<b>22,387</b>	<b>2,393,834</b>

**Table E-15, Continued**  
**Dallam**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	13,355,920
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	18,870	23,588	28,306	33,023	37,741	42,459	0
Convert to Dry	0	0	0	0	0	0	3,902,876
Irrigation Equipment	18,870	37,741	56,611	94,352	113,223	132,093	23,879,837
PET Network	20,937	20,937	20,937	20,937	20,937	20,937	100,498
Precipitation Enhancement	66,999	66,999	66,999	66,999	66,999	66,999	301,493
<b>Total</b>	<b>125,676</b>	<b>149,264</b>	<b>172,853</b>	<b>215,311</b>	<b>238,899</b>	<b>262,487</b>	<b>41,540,625</b>

**Donley**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	97,280
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	1,370	1,713	2,055	2,398	2,740	3,083	0
Convert to Dry	0	0	0	0	0	0	496,031
Irrigation Equipment	1,370	2,740	4,110	6,850	8,221	9,591	1,733,809
PET Network	1,520	1,520	1,520	1,520	1,520	1,520	7,297
Precipitation Enhancement	4,864	4,864	4,864	4,864	4,864	4,864	21,890
<b>Total</b>	<b>9,125</b>	<b>10,837</b>	<b>12,550</b>	<b>15,633</b>	<b>17,345</b>	<b>19,058</b>	<b>2,356,308</b>

**Gray**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	501,440
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	2,206	2,757	3,309	3,860	4,411	4,963	0
Convert to Dry	0	0	0	0	0	0	866,726
Irrigation Equipment	2,206	4,411	6,617	11,028	13,234	15,440	2,791,198
PET Network	2,447	2,447	2,447	2,447	2,447	2,447	11,747
Precipitation Enhancement	7,831	7,831	7,831	7,831	7,831	7,831	35,240
<b>Total</b>	<b>14,690</b>	<b>17,447</b>	<b>20,204</b>	<b>25,167</b>	<b>27,924</b>	<b>30,681</b>	<b>4,206,351</b>

**Hall**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	0
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	1,516	1,895	2,274	2,653	3,032	3,411	0
Convert to Dry	0	0	0	0	0	0	656,321
Irrigation Equipment	1,516	3,032	4,548	7,579	9,095	10,611	1,918,314
PET Network	1,682	1,682	1,682	1,682	1,682	1,682	8,073
Precipitation Enhancement	5,382	5,382	5,382	5,382	5,382	5,382	24,220
<b>Total</b>	<b>10,096</b>	<b>11,991</b>	<b>13,886</b>	<b>17,296</b>	<b>19,191</b>	<b>21,086</b>	<b>2,606,928</b>

**Table E-15, Continued**  
**Hansford**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	2,533,440
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	9,535	11,918	14,302	16,686	19,069	21,453	0
Convert to Dry	0	0	0	0	0	0	4,202,543
Irrigation Equipment	9,535	19,069	28,604	47,673	57,208	66,742	12,065,674
PET Network	10,579	10,579	10,579	10,579	10,579	10,579	50,778
Precipitation Enhancement	33,852	33,852	33,852	33,852	33,852	33,852	152,334
<b>Total</b>	<b>63,500</b>	<b>75,418</b>	<b>87,337</b>	<b>108,789</b>	<b>120,708</b>	<b>132,626</b>	<b>19,004,769</b>

**Hartley**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	10,483,280
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	16,202	20,252	24,302	28,353	32,403	36,454	0
Convert to Dry	0	0	0	0	0	0	3,558,360
Irrigation Equipment	16,202	32,403	48,605	81,008	97,210	113,412	20,502,572
PET Network	17,976	17,976	17,976	17,976	17,976	17,976	86,285
Precipitation Enhancement	57,523	57,523	57,523	57,523	57,523	57,523	258,854
<b>Total</b>	<b>107,902</b>	<b>128,154</b>	<b>148,406</b>	<b>184,860</b>	<b>205,112</b>	<b>225,364</b>	<b>34,889,351</b>

**Hemphill**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	0
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	95	119	143	167	191	215	0
Convert to Dry	0	0	0	0	0	0	59,085
Irrigation Equipment	95	191	286	477	573	668	120,820
PET Network	106	106	106	106	106	106	508
Precipitation Enhancement	339	339	339	339	339	339	1,525
<b>Total</b>	<b>636</b>	<b>755</b>	<b>875</b>	<b>1,089</b>	<b>1,209</b>	<b>1,328</b>	<b>181,939</b>

**Hutchinson**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	1,152,080
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	4,597	5,746	6,895	8,045	9,194	10,343	0
Convert to Dry	0	0	0	0	0	0	2,078,115
Irrigation Equipment	4,597	9,194	13,791	22,984	27,581	32,178	5,817,202
PET Network	5,100	5,100	5,100	5,100	5,100	5,100	24,482
Precipitation Enhancement	16,321	16,321	16,321	16,321	16,321	16,321	73,445
<b>Total</b>	<b>30,615</b>	<b>36,361</b>	<b>42,107</b>	<b>52,450</b>	<b>58,197</b>	<b>63,943</b>	<b>9,145,324</b>

**Table E-15, Continued**  
**Lipscomb**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	396,480
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	918	1,148	1,377	1,607	1,836	2,066	0
Convert to Dry	0	0	0	0	0	0	230,100
Irrigation Equipment	918	1,836	2,754	4,590	5,508	6,427	1,161,789
PET Network	1,019	1,019	1,019	1,019	1,019	1,019	4,889
Precipitation Enhancement	3,260	3,260	3,260	3,260	3,260	3,260	14,668
<b>Total</b>	<b>6,114</b>	<b>7,262</b>	<b>8,410</b>	<b>10,475</b>	<b>11,623</b>	<b>12,770</b>	<b>1,807,926</b>

**Moore**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	6,699,120
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	11,723	14,653	17,584	20,515	23,445	26,376	0
Convert to Dry	0	0	0	0	0	0	3,010,556
Irrigation Equipment	11,723	23,445	35,168	58,613	70,336	82,059	14,834,568
PET Network	13,006	13,006	13,006	13,006	13,006	13,006	62,431
Precipitation Enhancement	41,621	41,621	41,621	41,621	41,621	41,621	187,293
<b>Total</b>	<b>78,072</b>	<b>92,726</b>	<b>107,379</b>	<b>133,755</b>	<b>148,408</b>	<b>163,062</b>	<b>24,793,968</b>

**Ochiltree**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	1,250,080
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	7,270	9,087	10,905	12,722	14,539	16,357	0
Convert to Dry	0	0	0	0	0	0	3,158,708
Irrigation Equipment	7,270	14,539	21,809	36,348	43,618	50,888	9,199,497
PET Network	8,066	8,066	8,066	8,066	8,066	8,066	38,716
Precipitation Enhancement	25,811	25,811	25,811	25,811	25,811	25,811	116,148
<b>Total</b>	<b>48,416</b>	<b>57,503</b>	<b>66,590</b>	<b>82,947</b>	<b>92,034</b>	<b>101,121</b>	<b>13,763,148</b>

**Oldham**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	0
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	346	432	518	605	691	777	0
Convert to Dry	0	0	0	0	0	0	205,140
Irrigation Equipment	346	691	1,037	1,728	2,073	2,419	437,249
PET Network	383	383	383	383	383	383	1,840
Precipitation Enhancement	1,227	1,227	1,227	1,227	1,227	1,227	5,520
<b>Total</b>	<b>2,301</b>	<b>2,733</b>	<b>3,165</b>	<b>3,942</b>	<b>4,374</b>	<b>4,806</b>	<b>649,749</b>

**Table E-15, Continued**  
**Potter**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	27,760
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	421	527	632	737	842	948	0
Convert to Dry	0	0	0	0	0	0	183,251
Irrigation Equipment	421	842	1,264	2,106	2,527	2,948	533,013
PET Network	467	467	467	467	467	467	2,243
Precipitation Enhancement	1,495	1,495	1,495	1,495	1,495	1,495	6,730
<b>Total</b>	<b>2,805</b>	<b>3,332</b>	<b>3,858</b>	<b>4,806</b>	<b>5,332</b>	<b>5,859</b>	<b>752,997</b>

**Randall**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	368,240
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	7,320	9,150	10,979	12,809	14,639	16,469	0
Convert to Dry	0	0	0	0	0	0	4,524,536
Irrigation Equipment	7,320	14,639	21,959	36,598	43,918	51,237	9,262,707
PET Network	8,121	8,121	8,121	8,121	8,121	8,121	38,982
Precipitation Enhancement	25,988	25,988	25,988	25,988	25,988	25,988	116,946
<b>Total</b>	<b>48,748</b>	<b>57,898</b>	<b>67,047</b>	<b>83,517</b>	<b>92,666</b>	<b>101,816</b>	<b>14,311,411</b>

**Roberts**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	157,680
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	1,383	1,729	2,075	2,421	2,766	3,112	0
Convert to Dry	0	0	0	0	0	0	325,504
Irrigation Equipment	1,383	2,766	4,149	6,916	8,299	9,682	1,750,324
PET Network	1,535	1,535	1,535	1,535	1,535	1,535	7,366
Precipitation Enhancement	4,911	4,911	4,911	4,911	4,911	4,911	22,099
<b>Total</b>	<b>9,212</b>	<b>10,941</b>	<b>12,670</b>	<b>15,782</b>	<b>17,511</b>	<b>19,240</b>	<b>2,262,972</b>

**Sherman**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	7,339,280
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	17,651	22,064	26,477	30,889	35,302	39,715	0
Convert to Dry	0	0	0	0	0	0	6,662,614
Irrigation Equipment	17,651	35,302	52,953	88,255	105,906	123,557	22,336,701
PET Network	19,584	19,584	19,584	19,584	19,584	19,584	94,003
Precipitation Enhancement	62,669	62,669	62,669	62,669	62,669	62,669	282,010
<b>Total</b>	<b>117,555</b>	<b>139,619</b>	<b>161,683</b>	<b>201,397</b>	<b>223,461</b>	<b>245,525</b>	<b>36,714,609</b>

**Table E-15, Continued**  
**Wheeler**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	0	0	0	0	0	0	30,000
Change Crop Variety	0	0	0	0	0	0	0
Conservation Tillage	718	897	1,077	1,256	1,436	1,615	0
Convert to Dry	0	0	0	0	0	0	386,246
Irrigation Equipment	718	1,436	2,154	3,589	4,307	5,025	908,475
PET Network	797	797	797	797	797	797	3,823
Precipitation Enhancement	2,549	2,549	2,549	2,549	2,549	2,549	11,470
<b>Total</b>	<b>4,781</b>	<b>5,679</b>	<b>6,576</b>	<b>8,191</b>	<b>9,089</b>	<b>9,986</b>	<b>1,340,015</b>

**Total**

Strategy	Annual Costs						Capital Cost
	2010	2020	2030	2040	2050	2060	
Change Crop Type	\$0	\$0	\$0	\$0	\$0	\$0	\$45,730,320
Change Crop Variety	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Conservation Tillage	\$112,662	\$140,827	\$168,993	\$197,158	\$225,324	\$253,489	\$0
Convert to Dry	\$0	\$0	\$0	\$0	\$0	\$0	\$38,874,371
Irrigation Equipment	\$112,662	\$225,324	\$337,986	\$563,310	\$675,971	\$788,633	\$142,569,385
PET Network	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$600,000
Precipitation Enhancement	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$1,800,000
<b>Total</b>	<b>\$750,324</b>	<b>\$891,151</b>	<b>\$1,031,979</b>	<b>\$1,285,468</b>	<b>\$1,426,295</b>	<b>\$1,567,123</b>	<b>\$229,574,076</b>

**Table E-16**  
**Manufacturing WUGs with Needs of Approximately 1,000 ac-ft/yr**  
**Purchase Direct Reuse**

Owner: Manufacturing  
Quantity: 1,000 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Transmission System</b>					
Pipeline - Rural	12 inch	10,560	LF	\$28	\$295,700
Pump Station	30 HP	1	LS	\$280,000	\$280,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$186,700
<b>Subtotal for Transmission</b>					<b>\$764,900</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$764,900</b>
<b>Interest During Construction</b>			<b>(6 months)</b>		<b>\$16,600</b>
<b>Permitting and Mitigation</b>					<b>\$6,900</b>
<b>TOTAL CAPITAL COST</b>					<b>\$788,400</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$68,700
Electricity (Transmission)					\$3,700
Water Purchase (\$0.15 per 1,000 gal)					\$48,900
Operation and Maintenance					\$11,900
<b>Total Annual Cost</b>					<b>\$133,200</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$133</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.41</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$65</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.20</b>

**Table E-17**  
**Manufacturing WUGs with Needs of Approximately 1,700 ac-ft/yr**  
**Purchase Direct Reuse**

Owner: Manufacturing  
Quantity: 1,700 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Transmission System</b>					
Pipeline - Rural	16 inch	10,560	LF	\$37	\$390,700
Pump Station	45 HP	1	LS	\$370,000	\$370,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$246,700
<b>Subtotal for Transmission</b>					<b>\$1,009,900</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$1,009,900</b>
<b>Interest During Construction</b>			<b>(6 months)</b>		<b>\$21,900</b>
<b>Permitting and Mitigation</b>					<b>\$9,100</b>
<b>TOTAL CAPITAL COST</b>					<b>\$1,040,900</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$90,800
Electricity (Transmission)					\$5,500
Water Purchase (\$0.15 per 1,000 gal)					\$83,100
Operation and Maintenance					\$15,800
<b>Total Annual Cost</b>					<b>\$195,200</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$115</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.35</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$61</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.19</b>

**Table E-18**  
**Manufacturing WUGs with Needs of Approximately 2,000 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Manufacturing  
Quantity: 2,000 AF/Y

Item	Size	Quantity	Unit	Unit Price	Cost
<b>Capital Costs</b>					
<b>Wellfield and Treatment</b>					
Wells	700 gpm	3	Ea.	\$140,000	\$420,000
Connection to Pump Station		3	Ea.	\$100,000	\$300,000
Storage Tank (Closed)	400,000 Gal	1	Ea.	\$145,000	\$145,000
Engineering and Contingencies (35% for well field)					\$302,800
<b>Subtotal for Wellfield and Treatment</b>					<b>\$1,167,800</b>
<b>Transmission System</b>					
Pipeline - Rural	18 inch	10,560	LF	\$42	\$443,500
Pump Station	50 HP	1	LS	\$400,000	\$400,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$273,100
<b>Subtotal for Transmission</b>					<b>\$1,119,100</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$2,286,900</b>
<b>Interest During Construction (6 months)</b>					<b>\$49,600</b>
<b>Permitting and Mitigation</b>					<b>\$20,500</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$600,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$2,957,000</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$257,800
Electricity (Transmission)					\$6,100
Water Treatment (\$0.15 per 1,000 gal)					\$97,800
Operation and Maintenance					\$43,300
<b>Total Annual Cost</b>					<b>\$405,000</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$203</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.62</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$74</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.23</b>

**Table E-19**  
**Manufacturing WUGs with Needs of Approximately 2,500 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Manufacturing  
Quantity: 2,500 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	700 gpm	4	Ea.	\$140,000	\$560,000
Connection to Pump Station		4	Ea.	\$100,000	\$400,000
Storage Tank (Closed)	500,000 Gal	1	Ea.	\$155,000	\$155,000
Engineering and Contingencies (35% for well field)					\$390,300
<b>Subtotal for Wellfield and Treatment</b>					<b>\$1,505,300</b>
<b>Transmission System</b>					
Pipeline - Rural	18 inch	10,560	LF	\$42	\$443,500
Pump Station	75 HP	1	LS	\$510,000	\$510,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$311,600
<b>Subtotal for Transmission</b>					<b>\$1,267,600</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$2,772,900</b>
<b>Interest During Construction</b>					<b>\$60,100</b>
(6 months)					
<b>Permitting and Mitigation</b>					<b>\$24,800</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$750,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$3,607,800</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$314,500
Electricity (Transmission)					\$8,500
Water Treatment (\$0.15 per 1,000 gal)					\$122,200
Operation and Maintenance					\$54,100
<b>Total Annual Cost</b>					<b>\$499,300</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$200</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.61</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$74</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.23</b>

**Table E-20**  
**Manufacturing WUGs with Needs of Approximately 3,600 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Manufacturing  
Quantity: 3,600 AF/Y

Item	Size	Quantity	Unit	Unit Price	Cost
<b>Capital Costs</b>					
<b>Wellfield and Treatment</b>					
Wells	700 gpm	6	Ea.	\$140,000	\$840,000
Connection to Pump Station		6	Ea.	\$100,000	\$600,000
Storage Tank (Closed)	700,000 Gal	1	Ea.	\$203,000	\$203,000
Engineering and Contingencies (35% for well field)					\$575,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$2,218,100</b>
<b>Transmission System</b>					
Pipeline - Rural	20 inch	10,560	LF	\$51	\$538,600
Pump Station	100 HP	1	LS	\$620,000	\$620,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$378,600
<b>Subtotal for Transmission</b>					<b>\$1,539,700</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$3,757,800</b>
<b>Interest During Construction (6 months)</b>					<b>\$81,400</b>
<b>Permitting and Mitigation</b>					<b>\$33,600</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$1,080,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$4,952,800</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$431,800
Electricity (Transmission)					\$12,600
Water Treatment (\$0.15 per 1,000 gal)					\$176,000
Operation and Maintenance					\$74,400
<b>Total Annual Cost</b>					<b>\$694,800</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$193</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.59</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$73</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.22</b>

**Table E-21**  
**Manufacturing WUGs with Needs of Approximately 5,600 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Manufacturing  
Quantity: 5,600 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	800 gpm	8	Ea.	\$140,000	\$1,120,000
Connection to Pump Station		8	Ea.	\$100,000	\$800,000
Storage Tank (Closed)	1,250,000 Gal	1	Ea.	\$393,500	\$393,500
Engineering and Contingencies (35% for well field)					\$809,700
<b>Subtotal for Wellfield and Treatment</b>					<b>\$3,123,200</b>
<b>Transmission System</b>					
Pipeline - Rural	24 inch	10,560	LF	\$66	\$697,000
Pump Station	150 HP	1	LS	\$775,000	\$775,000
Easement - Rural	20 Feet	5	AC	\$500	\$2,500
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$480,400
<b>Subtotal for Transmission</b>					<b>\$1,954,900</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$5,078,100</b>
<b>Interest During Construction</b>					<b>\$110,000</b>
					(6 months)
<b>Permitting and Mitigation</b>					<b>\$45,400</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$1,680,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$6,913,500</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$602,800
Electricity (Transmission)					\$19,600
Water Treatment (\$0.15 per 1,000 gal)					\$273,700
Operation and Maintenance					\$101,100
<b>Total Annual Cost</b>					<b>\$997,200</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$178</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.55</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$70</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.22</b>

**Table E-22**  
**Steam Electric Power WUGs with Needs less than 200 ac-ft/yr**  
**Install New Groundwater Well**

Owner: Steam Electric Power  
Quantity: 200 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	300 gpm	1	Ea.	\$137,500	\$137,500
Connection to Pump Station		1	Ea.	\$100,000	\$100,000
Storage Tank (Closed)	50,000 Gal	1	Ea.	\$40,000	\$40,000
Engineering and Contingencies (35% for well field)					\$97,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$374,600</b>
<b>Transmission System</b>					
Pipeline - Rural	8 inch	10,560	LF	\$20	\$211,200
Pump Station	10 HP	1	LS	\$100,000	\$100,000
Easement - Rural	15 Feet	4	AC	\$500	\$1,800
Engineering and Contingencies (30% for pipelines, 35% for other items)					\$98,400
<b>Subtotal for Transmission</b>					<b>\$411,400</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$786,000</b>
<b>Interest During Construction</b>			<b>(6 months)</b>		<b>\$17,000</b>
<b>Permitting and Mitigation</b>					<b>\$7,100</b>
<b>Groundwater Rights/ Purchase</b>					<b>\$60,000</b>
<b>TOTAL CAPITAL COST</b>					<b>\$870,100</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$75,900
Electricity (Transmission)					\$1,100
Water Treatment (\$0.15 per 1,000 gal)					\$9,800
Operation and Maintenance					\$13,800
<b>Total Annual Cost</b>					<b>\$100,600</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$503</b>
Water Cost (\$ per 1,000 gallons)					<b>\$1.54</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$124</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.38</b>

**Table E-23  
Connecting to Palo Duro Reservoir**

Owner:	Palo Duro River Authority	
Quantity:	Cactus	2,265
	Dumas	1,760
	Sunray	370
	Gruver	146
	Spearman	331
	Stinnet	157
	<u>Total</u>	<u>5,029</u>

	Quantity	Units	1995 Dollars	Unit Price	Cost
<b>Water Treatment Plant</b>					
9 MGD Conventional Treatment Plant	1	LS		\$14,300,000	\$14,300,000
Engineering and Contingencies (35%)					\$5,005,000
<b>Subtotal for Water Treatment Plant</b>					<b>\$19,305,000</b>

	Construction	Capital
Cactus	\$6,440,600	\$8,694,800
Dumas	\$5,005,800	\$6,757,800
Sunray	\$1,052,200	\$1,420,400
Gruver	\$414,500	\$559,600
Spearman	\$940,600	\$1,269,800
Stinnet	\$446,400	\$602,600
check total	\$14,300,100	\$19,305,000

	Quantity	Units	1995 Dollars	Unit Price	Cost
<b>Pipeline System Components</b>					
24" line from Res. to WTP	9,000	LF		\$66	\$594,000
24" line from WTP to Spearman	51,000	LF		\$66	\$3,366,000
Crossings	1	LS	\$75,000		\$88,000
Connection to Spearman	1	LS	\$10,000		\$11,700
ROW	20	23		\$500	\$11,500
Engineering and Contingencies (30%)					\$1,217,900
<b>Pipeline Subtotal at Spearman</b>					<b>\$5,289,100</b>

	Construction	Capital	Electricity (\$)
Cactus	\$1,783,500	\$2,382,200	\$11,600
Dumas	\$1,386,200	\$1,851,500	\$9,000
Sunray	\$291,400	\$389,200	\$1,900
Gruver	\$114,800	\$153,300	\$700
Spearman	\$260,500	\$347,900	\$1,700
Stinnet	\$123,600	\$165,100	\$800
check total	\$3,960,000	\$5,289,200	\$25,700

**Table E-23, Continued**

	Quantity	Units	1995 Dollars	Unit Price	Cost
<b>8" line from Spearman to Gruver</b>	71,300	LF		\$20	\$1,426,000
Crossings	1	LS	\$65,000		\$76,200
Connection to Gruver	1	LS	\$10,000		\$11,700
ROW	15	AC		\$500	\$12,500
Engineering and Contingencies (30%)					\$454,200
<b>Pipeline Subtotal at Gruver</b>					<b>\$1,980,600</b>

	Construction	Capital	Electricity (\$)
Cactus	\$0	\$0	\$0
Dumas	\$0	\$0	\$0
Sunray	\$0	\$0	\$0
Gruver	\$1,426,000	\$1,980,600	\$300
Spearman	\$0	\$0	\$0
Stinnet	\$0	\$0	\$0
check total	\$1,426,000	\$1,980,600	\$300

	Quantity	Units	1995 Dollars	Unit Price	Cost
<b>24" line from Spearman to Stinnet</b>	133,500	LF		\$66	\$8,811,000
Crossings	1	LS	\$125,000		\$146,600
ROW	20	AC		\$500	\$30,500
Engineering and Contingencies (30%)					\$2,687,300
<b>Pipeline Subtotal at Stinnet</b>					<b>\$11,675,400</b>

	Construction	Capital	Electricity (\$)
Cactus	\$4,383,800	\$5,808,900	\$19,400
Dumas	\$3,407,200	\$4,514,900	\$15,100
Sunray	\$716,200	\$949,000	\$3,200
Gruver	\$0	\$0	\$0
Spearman	\$0	\$0	\$0
Stinnet	\$303,800	\$402,600	\$1,300
check total	\$8,811,000	\$11,675,400	\$39,000

	Quantity	Units	1995 Dollars	Unit Price	Cost
<b>8" line Stinnet Spur</b>	83,350	LF		\$20	\$1,667,000
Crossings	1	LS	\$200,000		\$234,600
Connection to Stinnet	1	LS	\$10,000		\$11,700
ROW	20	AC		\$500	\$19,000
Engineering and Contingencies (30%)					\$574,000
<b>Pipeline Subtotal at Stinnet</b>					<b>\$2,506,300</b>

	Construction	Capital	Electricity (\$)
Cactus	\$0	\$0	\$0
Dumas	\$0	\$0	\$0
Sunray	\$0	\$0	\$0
Gruver	\$0	\$0	\$0
Spearman	\$0	\$0	\$0
Stinnet	\$1,667,000	\$2,506,300	\$500
check total	\$1,667,000	\$2,506,300	\$500

**Table E-23, Continued**

	Quantity	Units	1995 Dollars	Unit Price	Cost
24" line from Stinnet Spur to Dumas	122,800	LF		\$66	\$8,104,800
Crossings	1	LS	\$115,000		\$134,900
Connection to Dumas	1	LS	\$10,000		\$11,700
ROW	20	56 AC		\$500	\$28,000
Engineering and Contingencies (30%)					\$2,475,400
<b>Pipeline Subtotal at Dumas</b>					<b>\$10,754,800</b>

	Construction	Capital	Electricity (\$)
Cactus	\$4,176,500	\$5,542,000	\$17,200
Dumas	\$3,246,100	\$4,307,400	\$13,300
Sunray	\$682,300	\$905,400	\$2,800
Gruver	\$0	\$0	\$0
Spearman	\$0	\$0	\$0
Stinnet	\$0	\$0	\$0
check total	\$8,104,900	\$10,754,800	\$33,300

	Quantity	Units	1995 Dollars	Unit Price	Cost
8" line Sunray Spur	28,000	LF		\$20	\$560,000
Crossings	1	LS	\$85,000		\$99,700
Pressure Reducing Valve	1	EA	\$20,000		\$23,500
Connection to Sunray	1	LS	\$10,000		\$11,700
ROW	15	10 AC		\$500	\$5,000
Engineering and Contingencies (30%)					\$208,500
<b>Pipeline Subtotal at Sunray</b>					<b>\$348,400</b>

	Construction	Capital	Electricity (\$)
Cactus	0	\$0	\$0
Dumas	0	\$0	\$0
Sunray	\$560,000	\$348,400	\$1,500
Gruver	0	\$0	\$0
Spearman	0	\$0	\$0
Stinnet	0	\$0	\$0
check total	\$560,000	\$348,400	\$1,500

	Quantity	Units	1995 Dollars	Unit Price	Cost
18" line from Dumas to Cactus	67,150	LF		\$42	\$2,820,300
Crossings	1	LS	\$165,000		\$193,600
Connection to Cactus	1	LS	\$10,000		\$11,700
ROW	20	31 AC		\$500	\$15,500
Engineering and Contingencies (30%)					\$907,700
<b>Pipeline Subtotal at Sunray</b>					<b>\$3,948,800</b>

**Table E-23, Continued**

	Construction	Capital	Electricity (\$)
Cactus	\$2,820,300	\$3,948,800	\$11,800
Dumas	0	\$0	\$0
Sunray	0	\$0	\$0
Gruver	0	\$0	\$0
Spearman	0	\$0	\$0
Stinnet	0	\$0	\$0
check total	\$2,820,300	\$3,948,800	\$11,800

Pump Station Components	Quantity	Units	1995 Dollars	Unit Price	Cost
9 MGD PS at intake	250	HP			\$1,065,000
9 MGD PS at WTP	250	HP			\$1,065,000
9 MGD PS at Spearman	400	HP			\$1,500,000
8.12 MGD at Stinnet Spur	400	HP			\$1,500,000
4.04 MGD at Dumas	100	HP			\$620,000
Engineering and Contingencies (35%)					\$2,012,500
<b>Pump Station Subtotal</b>					<b>\$7,762,500</b>

Construction Costs	9 MGD PS at intake	9 MGD PS at WTP	9 MGD PS at Spearman	8.12 MGD at Stinnet Spur	4.04 MGD at Dumas	
Cactus	\$479,700	\$479,700	\$675,600	\$746,300	\$348,900	
Dumas	\$372,800	\$372,800	\$525,100	\$580,000	\$271,100	
Sunray	\$78,400	\$78,400	\$110,400	\$121,900	\$0	
Gruver	\$30,900	\$30,900	\$43,500	\$0	\$0	
Spearman	\$70,100	\$70,100	\$98,700	\$0	\$0	
Stinnet	\$33,200	\$33,200	\$46,800	\$51,700	\$0	
check total	\$1,065,100	\$1,065,100	\$1,500,100	\$1,499,900	\$620,000	\$5,750,200

Capital Costs	9 MGD PS at intake	9 MGD PS at WTP	9 MGD PS at Spearman	8.12 MGD at Stinnet Spur	4.04 MGD at Dumas	
Cactus	\$647,500	\$647,500	\$912,000	\$1,007,500	\$471,000	
Dumas	\$503,300	\$503,300	\$708,900	\$783,100	\$366,000	
Sunray	\$105,800	\$105,800	\$149,000	\$164,600	\$0	
Gruver	\$41,700	\$41,700	\$58,700	\$0	\$0	
Spearman	\$94,600	\$94,600	\$133,200	\$0	\$0	
Stinnet	\$44,900	\$44,900	\$63,200	\$69,800	\$0	
check total	\$1,437,800	\$1,437,800	\$2,025,000	\$2,025,000	\$837,000	\$7,762,600

Ground Storage Tanks	Quantity	Units	1995 Dollars	Unit Price	Cost
3 MG at WTP	1	LS	\$1,200,000	\$589,000	\$589,000
3 MG at Spearman	1	LS	\$1,200,000	\$589,000	\$589,000
2.5 MG at Stinnet Spur	1	LS	\$1,000,000	\$510,000	\$510,000
1.5 MG at Dumas	1	LS	\$600,000	\$355,000	\$355,000
Engineering and Contingencies (35%)					\$715,100
<b>Pump Station Subtotal</b>					<b>\$2,758,100</b>

**Table E-23, Continued**

Construction Costs	3 MG at WTP	3 MG at Spearman	2.5 MG at Stinnet Spur	1.5 MG at Dumas	
Cactus	\$265,300	\$265,300	\$253,700	\$199,700	
Dumas	\$206,200	\$206,200	\$197,200	\$155,300	
Sunray	\$43,300	\$43,300	\$41,500	\$0	
Gruver	\$17,100	\$17,100	\$0	\$0	
Spearman	\$38,700	\$38,700	\$0	\$0	
Stinnet	\$18,400	\$18,400	\$17,600	\$0	
check total	\$589,000	\$589,000	\$510,000	\$355,000	\$2,043,000

Capital Costs	3 MG at WTP	3 MG at Spearman	2.5 MG at Stinnet Spur	1.5 MG at Dumas	
Cactus	\$358,100	\$358,100	\$342,600	\$269,700	
Dumas	\$278,300	\$278,300	\$266,200	\$209,600	
Sunray	\$58,500	\$58,500	\$56,000	\$0	
Gruver	\$23,000	\$23,000	\$0	\$0	
Spearman	\$52,300	\$52,300	\$0	\$0	
Stinnet	\$24,800	\$24,800	\$23,700	\$0	
check total	\$795,000	\$795,000	\$688,500	\$479,300	\$2,757,800

**TOTAL CONSTRUCTION COST**

Cactus	\$31,390,700
Dumas	\$21,328,600
Sunray	\$4,710,600
Gruver	\$2,881,600
Spearman	\$2,044,700
Stinnet	\$3,972,700
check total	\$66,328,900

**Interest During Construction**

(24 month)

Cactus	\$2,563,700
Dumas	\$1,741,900
Sunray	\$384,700
Gruver	\$235,300
Spearman	\$167,000
Stinnet	\$324,500
check total	\$5,417,100

**Permitting and Mitigation**

Cactus	\$244,200
Dumas	\$163,500
Sunray	\$41,100
Gruver	\$24,000
Spearman	\$15,700
Stinnet	\$31,100
check total	\$519,600

**Table E-23, Continued****TOTAL CAPITAL COST**

Cactus	\$34,198,600
Dumas	\$23,234,000
Sunray	\$5,136,400
Gruver	\$3,140,900
Spearman	\$2,227,400
Stinnet	\$4,328,300
check total	\$72,265,600

**Annual Costs - Cactus**

Debt Service (6 percent for 20 years)	\$2,981,600
Electricity	\$60,000
Price to Purchase Water (\$0.15 per 1,000 gal)	\$110,700
Operation and Maintenance	\$385,500
<b>Total Annual Cost</b>	<b>\$3,537,800</b>

**UNIT COSTS (Until Amortized)**

Water Cost (\$ per ac-ft)	\$1,562
Water Cost (\$ per 1,000 gallons)	\$4.79

**UNIT COSTS (After Amortization)**

Water Cost (\$ per ac-ft)	\$246
Water Cost (\$ per 1,000 gallons)	\$0.75

**Annual Costs - Dumas**

Debt Service (6 percent for 20 years)	\$2,025,600
Electricity	\$37,400
Price to Purchase Water (\$0.15 per 1,000 gal)	\$86,000
Operation and Maintenance	\$277,700
<b>Total Annual Cost</b>	<b>\$2,426,700</b>

**UNIT COSTS (Until Amortized)**

Water Cost (\$ per ac-ft)	\$1,379
Water Cost (\$ per 1,000 gallons)	\$4.23

**UNIT COSTS (After Amortization)**

Water Cost (\$ per ac-ft)	\$228
Water Cost (\$ per 1,000 gallons)	\$0.70

**Table E-23, Continued**

	<b>Cost</b>
<b>Annual Costs - Sunray</b>	
Debt Service (6 percent for 20 years)	\$447,800
Electricity	\$9,400
Price to Purchase Water (\$0.15 per 1,000 gal)	\$18,100
Operation and Maintenance	\$61,700
<b>Total Annual Cost</b>	<b>\$537,000</b>
<b>UNIT COSTS (Until Amortized)</b>	
Water Cost (\$ per ac-ft)	\$1,451
Water Cost (\$ per 1,000 gallons)	\$4.45
<b>UNIT COSTS (After Amortization)</b>	
Water Cost (\$ per ac-ft)	\$241
Water Cost (\$ per 1,000 gallons)	\$0.74
<b>Annual Costs - Gruver</b>	
Debt Service (6 percent for 20 years)	\$273,800
Electricity	\$1,000
Price to Purchase Water (\$0.15 per 1,000 gal)	\$7,100
Operation and Maintenance	\$29,300
<b>Total Annual Cost</b>	<b>\$311,200</b>
<b>UNIT COSTS (Until Amortized)</b>	
Water Cost (\$ per ac-ft)	2131.506849
Water Cost (\$ per 1,000 gallons)	\$6.54
<b>UNIT COSTS (After Amortization)</b>	
Water Cost (\$ per ac-ft)	\$256
Water Cost (\$ per 1,000 gallons)	\$0.79
<b>Annual Costs - Spearman</b>	
Debt Service (6 percent for 20 years)	\$194,200
Electricity	\$1,700
Price to Purchase Water (\$0.15 per 1,000 gal)	\$16,200
Operation and Maintenance	\$34,000
<b>Total Annual Cost</b>	<b>\$246,100</b>
<b>UNIT COSTS (Until Amortized)</b>	
Water Cost (\$ per ac-ft)	743.5045317
Water Cost (\$ per 1,000 gallons)	\$2.28
<b>UNIT COSTS (After Amortization)</b>	
Water Cost (\$ per ac-ft)	\$157
Water Cost (\$ per 1,000 gallons)	\$0.48

**Table E-23, Continued**

<b>Annual Costs - Stinnet</b>	<b>Cost</b>
Debt Service (6 percent for 20 years)	\$377,400
Electricity	\$2,600
Price to Purchase Water (\$0.15 per 1,000 gal)	\$7,700
Operation and Maintenance	\$37,600
<b>Total Annual Cost</b>	<b>\$425,300</b>
<b>UNIT COSTS (Until Amortized)</b>	
Water Cost (\$ per ac-ft)	\$2,708.92
Water Cost (\$ per 1,000 gallons)	\$8.31
<b>UNIT COSTS (After Amortization)</b>	
Water Cost (\$ per ac-ft)	\$305
Water Cost (\$ per 1,000 gallons)	\$0.94

**Table E-24**  
**Livestock WUGs with Needs of 250 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Unknown  
Quantity: 250 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	300 gpm	1	Ea.	\$97,500	\$97,500
Storage (stock ponds or troughs)	30,000 AF	1	Ea.	\$20,000	\$20,000
Engineering and Contingencies (35%)					\$41,100
<b>Subtotal for Wellfield and Treatment</b>					<b>\$158,600</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$158,600</b>
<b>Interest During Construction</b>			<b>(6 months)</b>		<b>\$3,400</b>
<b>TOTAL CAPITAL COST</b>					<b>\$162,000</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$14,100
Operation and Maintenance					\$3,500
<b>Total Annual Cost</b>					<b>\$17,600</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$70</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.22</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$14</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.04</b>

**Table E-25**  
**Livestock WUGs with Needs of 500 ac-ft/yr**  
**Install Additional Groundwater Wells in Ogallala Aquifer**

Owner: Unknown  
Quantity: 500 AF/Y

<b>Capital Costs</b>	<b>Size</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Cost</b>
<b>Wellfield and Treatment</b>					
Wells	600 gpm	1	Ea.	\$115,000	\$115,000
Storage (stock ponds or troughs)	50,000 AF	1	Ea.	\$30,000	\$30,000
Engineering and Contingencies (35%)					\$50,800
<b>Subtotal for Wellfield and Treatment</b>					<b>\$195,800</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$195,800</b>
<b>Interest During Construction</b>			<b>(6 months)</b>		<b>\$4,200</b>
<b>TOTAL CAPITAL COST</b>					<b>\$200,000</b>
<b>Annual Costs</b>					
Debt Service (6 percent for 20 years)					\$17,400
Operation and Maintenance					\$4,400
<b>Total Annual Cost</b>					<b>\$21,800</b>
<b>UNIT COSTS (Until Amortized)</b>					
Water Cost (\$ per ac-ft)					<b>\$44</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.13</b>
<b>UNIT COSTS (After Amortization)</b>					
Water Cost (\$ per ac-ft)					<b>\$9</b>
Water Cost (\$ per 1,000 gallons)					<b>\$0.03</b>