NC STATE UNIVERSITY

IRR-D31 Oct-07

IRRIGATION COST SPREADSHEET

ENTER YOUR DATA IN THE YELLOW HIGHLIGHTED CELLS

Type: Center Pivot: 600 foot system, diesel powered

BRIEF DESCRIPTION:

600 ft sprinkler system plus end gun. Full circle covers 31.5 acres. Power source is a diesel pump and generator.
Adequate water requires drilling a new well. Well capacity of 400 GPMis required. System operates 40.6 hours to apply 1 acre inch of water.

Enter effective acreage covered ==> **31.5** **acres**
Enter hours required to apply 1 acre inch ==> **40.6** **hours**

INVESTMENT COST

Item	Unit	Quantity	Cost/unit	Total	Per Acre
6" PVC pipe and fittings	feet	600	$5.83	$3,500	$111.11
Sprinker system (3 towers)		1	$33,782.00	$33,782	$1,072.44
Pump, 40 HP		1	$15,000.00	$15,000	$476.19
Gearhead assembly and engine		1	$15,000.00	$15,000	$476.19
Well		1	$17,500.00	$17,500	$555.56
Total investment cost:				**$84,782**	**$2,691.49**

ANNUAL FIXED COSTS

Item	Investment Cost	Salvage Value	Useful Life Years	Deprec-iation[1]	Interest[2]	Tax & Ins[2]	Total DITI	Total Per Acre
Enter interest and property tax + insurance rate, as a percentage of value==>					8.50%	1.40%		
6" PVC pipe and fittings	$3,500	$0.00	20	$175.00	$148.75	$24.50	$348	$11.06
Sprinker system (3 towers)	$33,782	$0.00	20	$1,689.10	$1,435.74	$236.47	$3,361	$106.71
Pump, 40 HP	$15,000	$0.00	20	$750.00	$637.50	$105.00	$1,493	$47.38
Gearhead assembly and engine	$15,000	$0.00	20	$750.00	$637.50	$105.00	$1,493	$47.38
Well	$17,500	$0.00	20	$875.00	$743.75	$122.50	$1,741	$55.28
Total Fixed Cost	**$84,782**			**$4,239.10**	**$3,603.24**	**$593.47**	**$8,436**	**$267.80**

ANNUAL OPERATING COST

Item							
Fuel	**Hours per acre inch**	**Rated Horse Power**	**Fuel Use Gals/HP-hr[3]**	**Fuel Cost $/gallon**	**Acre inches applied[4]**	**Total**	**Total Per Acre**
Pump fuel	40.6	40	0.0746	$2.50	5.0	$1,514	$48.08
Generator fuel	40.6	20	0.0746	$2.50	5.0	$757	$24.04
Repairs and Maintenance	**Initial Cost**	**Cost Factor**					
6" PVC pipe and fittings	$3,500	0.00%				$0	$0.00
Sprinker system (3 towers)	$33,782	0.50%				$169	$5.36
Pump, 40 HP	$15,000	6.60%				$990	$31.43
Gearhead assembly and engine	$15,000	6.60%				$990	$31.43
Well	$17,500	0.00%				$0	$0.00
Labor	**Hours**	**Cost/hour**					
Labor	1.5	$9.03				$14	$0.43
Total operating cost						**$4,434**	**$140.76**

TOTAL ANNUAL COST

	Total	Per Acre
Total Fixed and Operating Cost	**$12,870**	**$408.57**

[1] Depreciation = (Initial cost - Salvage value) / years of life
[2] Based on the average investment = (Initial cost + Salvage value) / 2 multiplied by the indicated percentage rate
[3] Fuel consumption will vary by engine manufacturer
[4] The number of irrigation events likely will vary from 3 to 9 per season. A total application of five acre inches is used in this budget.

Costs estimates and the spreadsheet were developed by:
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