TABLE 1. Acreage Summary, San Juan County, Actual 2014

BUDGET AREA.....SAN JUAN COUNTY, 2002.
FARM SIZE.....80 ACRES
IRRIGATION TYPE.....SPRINKLER
NUMBER OF CROPS.....1...

ACREAGE SUMMARY:	LAND USE (ACRES)	WATER USE AC.IN. PER AC.	WATER USE TOTAL AC.IN.
ALFALFA ESTABLISHMENT	11.00	39	429
ALFALFA	69.00	46	3,174
TOTAL	80.00		3,603
ACRE FEET PER ACRE OF WATER RIGHTS			3.75

TABLE 2. Basic cost information for San Juan County, Actual 2014

Item				
Labor Wage Rate:				
Equipment operators		$/hour		$7.80
General & Irrigators		$/hour		$7.50
Purchased Inputs:				
Fertilizer:				
Phosphate (P205)		$/pound		$0.40
Seed:				
Alfalfa		$/pound		$6.00
Oats		$/pound		$0.64
Wire		$/pound		$1.32
Canal Water		$/acre foot		$30.50
Energy:				
Diesel fuel		$/gallon		$3.83
Gasoline		$/gallon		$2.55
Electricity		cents/KwHr		12.31
LP Gas		$/gallon		$2.80
Natural Gas		$/MCF		$4.00
(service charge)		$/month		$10.00
Employee Liability Insurance		$/$1,000 wages		$20.00
Employee Benefits		percent/wages		18.00%
Labor Downtime		percent		25.00%
Financial Rates:				
Operating Capital Interest Rate		percent		5.50%
Land Interest Rate		percent		5.00%
Equipment Interest Rate		percent		5.50%
Real Interest Rate		percent		3.00%
Land Taxes	$253.00	/acre (full value)		$2.45
Personal Property Tax Rate	- NR	$/$1,000	(Assessed	$29.00
	- R		Value)	$24.30
Supervision Factors				
Field Crop-Irrigation		$/labor hour		$1.00
Field Crop-Equipment & General		$/labor hour		$0.50
Management Rate		percent		7.00%

TABLE 3. Overhead cost information for San Juan County, Actual 2014

Item					
Electricity (Domestic & Shop)			$127.05	per month	$1,525
Telephone			$90.75	per month	$1,089
Accounting & Legal					$538
Misc. Supplies & Hand Tools					$908
Pickup and Auto					
miles	12,463	@	$0.500	per mile	$6,232
Insurance					
- general liability (non-employee)					$1,125
- fire/theft					$732
Property Taxes					
- non-farm land					$0
- other than land & machinery					$6,010
Building repairs and maintenance					$563
Dues, fees, publications					$278
Farmstead Equipment					$182
				Total	$19,181
			Total per planted acre		$277.98

Table 4. Pumping costs and data for irrigation, San Juan County, Actual 2014

INPUT DATA

DELIVERY PSI:		
BOOSTER PUMP	70	
GALLONS PER MINUTE (GPM)	800	
WORK HORSEPOWER	33	
EFFICIENCY FACTOR:		
ELECTRICITY	0.540	
NATURAL GAS	0.154	
LP GAS	0.154	
DIESEL	0.160	
FUEL COST PER UNIT:		
ELECTRICITY	12.31	CENTS/KwHr
NATURAL GAS	$4.00	$/MCF
LP GAS	$2.83	$/GAL
DIESEL	$3.83	$/GAL

PUMPING COSTS

ELECTRIC WELL:	
COST PER HOUR	$5.59
COST PER ACRE INCH	$3.16
NATURAL GAS WELL:	
COST PER HOUR	$2.40
COST PER ACRE INCH	$1.36
LP GAS WELL:	
COST PER HOUR	$16.48
COST PER ACRE INCH	$9.32
DIESEL WELL:	
COST PER HOUR	$14.07
COST PER ACRE INCH	$7.96

TABLE 5. Equipment summary for an 80 acre sprinkler-irrigated farm, San Juan County, Actual 2014

EQUIPMENT ITEM & SIZE	ANNUAL HOURS OF USE	NUMBER	TOTAL VALUE	VARIABLE COSTS: FUEL, OIL, LUBRICANT	REPAIR	FUEL, OIL PER HR	REPAIR PER HR	FIXED COSTS: DEPRECIATION	TAXES	TOTAL PER HR
TRACTOR 40 HP	51	1	$7,000	$491	$56	$9.54	$1.08	$360	$87	$8.67
TRACTOR 95 HP	65	1	$17,335	$1,526	$62	$23.32	$0.94	$525	$76	$9.18
SWATHER 14 FT	35	1	$3,900	$500	$20	$14.34	$0.58	$1,450	$140	$45.59
BALER, PTO 2 WIRE	46	1	$1,600		$7		$0.15	$385	$37	$9.22
BALE WAGON, PTO	44	1	$1,500		$56		$1.28	$800	$77	$20.12
DISC 12 FT	4	1	$2,250		$10		$2.79	$300	$22	$86.03
PLOW 3-14 IN	7	1	$3,350		$31		$4.15	$447	$32	$65.00
DITCHER (DOUBLE MOLDBOARD)	8	1	$1,250		$0		$0.05	$167	$12	$22.34
HARROW 12 FT	2	1	$300		$0		$0.01	$40	$3	$20.53
DRILL 12 FT	2	1	$2,200		$2		$1.06	$440	$21	$199.68
FERT SPREADER DEALER FURNISHED	4									
SIDEROLL SPRINKLER	2,038	1	$2,500		$0		$0.00	$333	$24	$0.18
NATURAL GAS BOOSTER PUMP	2,038	1	$2,500	$4,886	$0	$2.40	$0.00	$333	$24	$0.23
			$45,685	$7,403	$244			$5,579	$556	

EQUIPMENT LIST

ITEM	NEW VALUE	USED VALUE	YEARS LIFE	EQUIP CODE	MAX HOURS	FUEL UNIT/HR	LUBE COEF	ACCUM HOURS	AGE	INTEREST EXPENSE
TRACTOR 40 HP	17975.00	7000.00	50.00	1.00	800.00	3.40	0.10	772.05	15.00	494.31
TRACTOR 95 HP	15735.00	17334.50	30.00	1.00	800.00	5.54	0.10	1504.66	23.00	432.71
SWATHER 14 FT	29000.00	3900.00	20.00	2.00	800.00	3.12	0.20	488.32	14.00	797.50
BALER, PTO 2 WIRE	7700.00	1600.00	20.00	2.00	500.00			824.04	18.00	211.75
BALE WAGON, PTO	16000.00	1500.00	20.00	5.00	800.00			261.60	6.00	440.00
DISC 12 FT	4500.00	2250.00	15.00	3.00	300.00			59.84	16.00	123.75
PLOW 3-14 IN	6700.00	3350.00	15.00	3.00	300.00			117.92	16.00	184.25
DITCHER (DOUBLE MOLDBOARD)	2500.00	1250.00	15.00	4.00	300.00			120.00	15.00	68.75
HARROW 12 FT	600.00	300.00	15.00	4.00	300.00			33.44	16.00	16.50
DRILL 12 FT	4400.00	2200.00	10.00	8.00	100.00			30.03	13.00	121.00
FERT SPREADER DEALER FURNISHED										
SIDEROLL SPRINKLER	5000.00	2500.00	15.00	0.00	8742.00			30573.71	15.00	137.50
NATURAL GAS BOOSTER PUMP	5000.00	2500.00	15.00	0.00	8742.00			30573.71	15.00	137.50

USAGE LIST

ALFALFA EST	ALFALFA HAY	PER ACRE TOTALS
-----hours per acre-----		
0.10	0.73	0.83
1.87	0.65	2.52
0.16	0.48	0.64
0.21	0.63	0.84
0.20	0.60	0.80
0.34	0.00	0.34
0.67	0.00	0.67
0.10	0.10	0.20
0.19	0.00	0.19
0.21	0.00	0.21
0.05	0.05	0.10
22.06	26.02	48.09
22.06	26.02	48.09

INTEREST PRORATION

OAT HAY	ALFALFA HAY
-dollars per acre-	
0.96	7.01
12.37	4.30
3.66	10.97
0.97	2.91
2.02	6.06
11.25	0.00
16.75	0.00
0.86	0.86
1.50	0.00
11.00	0.00
0.00	0.00
1.49	1.76
1.49	1.76
64.31	35.62

ALFALFA ESTABLISHMENT ACRES: 11 PUMP WATER: 39.00

MACHINE	POWER UNIT	TIMES OVER	ACCOMPLISHMENT RATE	TOTAL	CUSTOM
PLOW	96 HP	1.00	0.67	0.67	
DISC	96 HP	2.00	0.17	0.34	
HARROW	96 HP	1.00	0.19	0.19	
FERTILIZE	96 HP	1.00	0.05	0.05	
DRILL	96 HP	1.00	0.21	0.21	
DITCHER	40 HP	2.00	0.05	0.10	
IRRIGATE		9.00	0.57	22.06	
SWATHER	14 FT	1.00	0.16	0.16	
BALER	96 HP	1.00	0.21	0.21	
BALE WAGON	96 HP	1.00	0.20	0.20	

ALFALFA HAY ACRES: 69 PUMP WATER: 46.00

MACHINE	POWER UNIT	TIMES OVER	ACCOMPLISHMENT RATE	TOTAL	CUSTOM
FERTILIZE	96 HP	1.00	0.05	0.05	
DITCHER	40 HP	2.00	0.05	0.10	
IRRIGATE		13.00	0.57	26.02	
SWATHER	14 FT	3.00	0.16	0.48	
BALER	40 HP	3.00	0.21	0.63	
BALE WAGON	96 HP	3.00	0.20	0.60	

ANNUAL REPAIR COSTS AS A PERCENT OF NEW VALUE

Hours of Use	1	2	3	4	5	6	7	8	9
	*	*	*	*	**	**	**	**	**
0	0.000060	0.000020	0.000620	0.000020	0.000080	0.000140	0.000040	0.000240	0.000200
50	0.000060	0.000020	0.000620	0.000020	0.000080	0.000140	0.000040	0.000240	0.000200
100	0.000060	0.000020	0.000500	0.000020	0.000140	0.000220	0.000100	0.000380	0.000300
200	0.000030	0.000030	0.000430	0.000040	0.000180	0.000260	0.000110	0.000510	0.000260
300	0.000030	0.000050	0.000390	0.000060	0.000230	0.000310	0.000140	0.000630	0.000400
400	0.000030	0.000060	0.000370	0.000090	0.000260	0.000340	0.000150	0.000710	0.000450
500	0.000030	0.000070	0.000360	0.000100	0.000280	0.000370	0.000170	0.000800	0.000630
600	0.000030	0.000090	0.000340	0.000120	0.000310	0.000390	0.000190	0.000860	0.000530
700	0.000030	0.000100	0.000340	0.000130	0.000330	0.000410	0.000200	0.000910	0.000560
800	0.000030	0.000110	0.000320	0.000150	0.000350	0.000430	0.000210	0.000980	0.000590
900	0.000030	0.000120	0.000320	0.000160	0.000370	0.000450	0.000230	0.001020	0.000600
1000	0.000090	0.000130	0.000310	0.000180	0.000380	0.000460	0.000230	0.001070	0.000630
1200	0.000045	0.000145	0.000305	0.000205	0.000405	0.000480	0.000245	0.001135	0.000710
1400	0.000045	0.000170	0.000300	0.000230	0.000435	0.000510	0.000410	0.001260	0.000765
1500	0.000150	0.000170	0.000300	0.000230	0.000435	0.000510	0.000410	0.001260	0.000765
1600	0.000150	0.000190	0.000285	0.000255	0.000465	0.000525	0.000135	0.001235	0.000805
1800	0.000075	0.000170	0.000285	0.000285	0.000485	0.000550	0.000295		
2000	0.000110	0.000265	0.000280	0.000305	0.000505	0.000565	0.000310		
2500	0.000056								
3000	0.000070								
3500	0.000082								
4000	0.000098								
4500	0.000108								
5000	0.000122								
5500	0.000136								
6000	0.000148								
6500	0.000162								
7000	0.000176								
7500	0.000188								
8000	0.000204								

* Based on unpublished data of D. R. Hunt, Department of Agricultural Engineering, University of Illinois.

** Based on "Agricultural Machinery Data" in Agricultural Engineers Yearbook, 1983.

Codes

1 tractors
2 balers, combines, forage harvesters, windrowers, pickups
3 rotary hoe, disks, moldboard plows, chisels, field cultivators row cultivators, laser plane
4 harrows, wagons, floats, roto buck, drag, roller, water furrow, bed shaper
5 balewagons, cotton pickers, cotton strippers, corn pickers corn heads, forage equipment, rotary mowers, stalk choppers, feed wagons, farm trucks
6 rakes, cutterbar mower
7 baler w/ engine, manure spreader
8 planters, drills, seeding equipment, mounted sprayers
9 fertilizer distributing equipment

TABLE 6. Alfalfa establishment, sprinkler-irrigated, budgeted per acre costs and returns for an 80 acre farm, San Juan County, Actual 2014
Planting dates: April 15 - June 1
Harvesting dates: June 15 - July 1

ITEM	PRICE	YIELD		TOTAL
GROSS RETURNS				
OAT HAY	$225.00	2.25	TONS (STACKED)	$506.25
GRAZING	$10.00	1.00	AUM	$10.00
TOTAL				$516.25

PURCHASED INPUTS	PRICE	QUANTITY		PURCHASED INPUTS	FIXED COST	TOTAL
ALFALFA SEED	$6.00	20	LBS	$120.00		$120.00
OAT SEED	$0.64	45	LBS	$28.80		$28.80
PHOSPHATE (P2O5)	$0.40	45	LBS	$18.00		$18.00
WIRE	$1.32	19	LBS	$25.45		$25.45
CANAL WATER		39	AC. IN.		$99.13	$99.13
CANAL WATER (MAINTENANCE)		1	ACRE		$8.00	$8.00
SUBTOTAL				$192.25	$107.13	$299.38

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE		PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
PLOW	96 HP	0.67	HR		$5.23	$15.63	$3.42	$49.70	$73.97
DISC (2X)	96 HP	0.34	HR		$2.65	$7.93	$1.27	$32.37	$44.22
HARROW	96 HP	0.19	HR		$1.48	$4.43	$0.18	$5.64	$11.74
FERTILIZE	96 HP	0.05	HR		$0.39	$1.17	$0.05	$0.46	$2.06
DRILL	96 HP	0.21	HR		$1.64	$4.90	$0.42	$43.86	$50.82
DITCHER (2X)	40 HP	0.10	HR		$0.78	$0.95	$0.11	$3.10	$4.95
IRRIGATE (9X)		2.25	HR		$16.88	$52.89	$0.00	$9.04	$78.80
SUBTOTAL		3.81	HR		$29.04	$87.90	$5.45	$144.18	$266.56
HARVEST OPERATIONS									
SWATHER	14 FT	0.16	HR		$1.25	$2.29	$0.09	$7.29	$10.93
BALER	96 HP	0.21	HR		$1.64	$4.90	$0.23	$3.86	$10.63
BALE WAGON	96 HP	0.20	HR		$1.56	$4.66	$0.44	$5.86	$12.53
SUBTOTAL		0.57	HR		$4.45	$11.86	$0.77	$17.02	$34.09
OVERHEAD EXPENSES									
DOWNTIME		1.74	HR		$13.53				$13.53
EMPLOYEE BENEFITS					$6.03				$6.03
INSURANCE				$0.67					$0.67
LAND TAXES								$2.45	$2.45
SUPERVISION AND MANAGEMENT					$42.93				$42.93
SUBTOTAL		1.74	HR	$0.67	$62.49			$2.45	$65.61
TOTAL OPERATING EXPENSES		6.12	HR	$192.92	$95.98	$99.75	$6.22	$270.77	$665.64
NET OPERATING PROFIT									($149.39)
INTEREST ON OPERATING CAPITAL		($120.51	@	5.50%)					$6.63
INTEREST ON EQUIPMENT INVESTMENT									$64.31
RETURN TO LAND AND RISK									($220.33)

TABLE 7. Alfalfa hay, sprinkler-irrigated, budgeted per acre costs and returns for an 80 acre farm, San Juan County, Actual 2014

Harvesting dates: June 1 - October 15

ITEM	PRICE	YIELD		TOTAL
GROSS RETURNS				
ALFAL FA HAY	$245.00	5.00	TONS (STACKED)	$1,225.00
GRAZING	$10.00	2.00	AUM	$20.00
TOTAL				$1,245.00

PURCHASED INPUTS	PRICE	QUANTITY		PURCHASED INPUTS	FIXED COST	TOTAL
PHOSPHATE (P2O5)	$0.40	40.00	LBS	$16.00		$16.00
INSECTICIDE (AERIAL)	$19.20	1.00	ACRE	$19.20		$19.20
WIRE	$1.32	43.00	LBS	$56.76		$56.76
LIVESTOCK FAC & EQUIP					$5.00	$5.00
ESTABLISHMENT: Principal		6.00	YEARS		$36.72	$36.72
: Interest					$16.46	$16.46
CANAL WATER		46.00	AC. IN.		$116.92	$116.92
CANAL WATER (MAINTENANCE)		1	ACRE		$8.00	$8.00
SUBTOTAL				$91.96	$183.10	$275.06

PREHARVEST OPERATIONS	POWER UNIT	ACCOMPLISHMENT RATE		PURCHASED INPUTS	LABOR	FUEL & LUBE	REPAIRS	FIXED COST	TOTAL
FERTILIZE	96 HP	0.05	HR		$0.39	$1.17	$0.05	$0.46	$2.06
DITCHER (2X)	40 HP	0.10	HR		$0.78	$0.95	$0.11	$3.10	$4.95
IRRIGATE (13X)		3.25	HR		$24.38	$62.38	$0.00	$10.66	$97.42
SUBTOTAL		3.40	HR		$25.55	$64.50	$0.16	$14.22	$104.43
HARVEST OPERATIONS									
SWATHER (3X)	14 FT	0.48	HR		$3.74	$6.88	$0.28	$21.88	$32.79
BALER (3X)	40 HP	0.63	HR		$4.91	$6.01	$0.78	$11.27	$22.97
BALE WAGON (3X)	96 HP	0.60	HR		$4.68	$13.99	$1.33	$17.58	$37.59
SUBTOTAL		1.71	HR		$13.34	$26.89	$2.39	$50.74	$93.35
OVERHEAD EXPENSES									
DOWNTIME		0.44	HR		$3.43				$3.43
EMPLOYEE BENEFITS					$7.00				$7.00
INSURANCE				$0.78					$0.78
LAND TAXES								$2.45	$2.45
SUPERVISION AND MANAGEMENT					$91.28				$91.28
OTHER EXPENSES				$277.98					$277.98
SUBTOTAL		0.44	HR	$278.76	$101.71			$2.45	$382.92
TOTAL OPERATING EXPENSES		5.55	HR	$370.72	$140.59	$91.39	$2.55	$250.50	$855.75
NET OPERATING PROFIT									$389.25
INTEREST ON OPERATING CAPITAL		($64.59	@	5.50%)					$3.55
INTEREST ON EQUIPMENT INVESTMENT									$35.62
RETURN TO LAND AND RISK									$350.07

BUDGET SUMMARY

GROSS RETURN		$1,245.00	
VARIABLE OPERATING EXPENSES	$464.66		
RETURN OVER VARIABLE EXPENSES		$780.34	(GROSS MARGIN)
FIXED EXPENSES	$250.50		
NET FARM INCOME		$529.84	(RETURN TO CAPITAL, LABOR, LAND & RISK)
LABOR AND MANAGEMENT COST	$140.59		
NET OPERATING PROFIT		$389.25	(RETURN TO CAPITAL, LAND & RISK)
CAPITAL COSTS	$39.18		
RETURN TO LAND AND RISK		$350.07	

TABLE 8. Summary of per acre costs and returns for an 80 acre farm, San Juan County, Actual 2014

	ALFALFA ESTABLISHMENT	ALFALFA HAY
	TONS	TONS
PRIMARY YIELD	2.25	5.00
PRIMARY PRICE	$225.00	$245.00
GOVERNMENT PAYMENTS	$0.00	$0.00
SECOND INCOME	$10.00	$20.00
GROSS RETURN	$516.25	$1,245.00
CASH OPERATING EXPENSES		
SEED	$148.80	
FERTILIZER	$18.00	$16.00
CHEMICALS		$19.20
CROP INSURANCE		
OTHER PURCHASED INPUTS	$25.45	$56.76
CANAL WATER		
FUEL, OIL & LUBRICANTS-EQUIPMENT	$46.86	$29.01
FUEL-IRRIGATION	$52.89	$62.38
REPAIRS	$6.22	$2.55
CUSTOM CHARGES		
LAND TAXES	$2.45	$2.45
OTHER EXPENSES	$0.67	$278.76
TOTAL CASH EXPENSES	$301.34	$467.10
RETURN OVER CASH EXPENSES	$214.91	$777.90
FIXED EXPENSES	$268.32	$248.06
TOTAL EXPENSES	$569.66	$715.16
NET FARM INCOME	($53.41)	$529.84
LABOR AND MANAGEMENT COSTS	$95.98	$140.59
NET OPERATING PROFIT	($149.39)	$389.25
CAPITAL COSTS		
INTEREST ON OPERATING CAPITAL	$6.63	$3.55
INTEREST ON EQUIPMENT INVESTMENT	$64.31	$35.62
TOTAL CAPITAL COSTS	$70.94	$39.18
RETURN TO LAND AND RISK	($220.33)	$350.07

TABLE 9. Whole farm summary, San Juan County, Actual 2014

GROSS RETURNS					
OAT HAY	11.00	ACRES			
CROP			$5,679		
ALFALFA HAY	69.00	ACRES			
CROP			$84,525		
GRAZING			$1,380		
GROSS RETURN					$91,584
CASH OPERATING EXPENSES					
SEED			$1,637		
FERTILIZER			$1,302		
CHEMICALS			$1,325		
CROP INSURANCE			$0		
OTHER PURCHASED INPUTS			$4,196		
CANAL WATER			$0		
FUEL, OIL & LUBRICANTS-EQUIPMENT			$2,517		
FUEL-IRRIGATION			$4,886		
REPAIRS			$244		
CUSTOM CHARGES			$0		
LAND TAXES			$196		
OTHER EXPENSES			$19,242		
TOTAL CASH EXPENSES				$35,545	
RETURN OVER CASH EXPENSES					$56,039
FIXED EXPENSES			$17,534		
TOTAL EXPENSES				$53,079	
NET FARM INCOME					$38,505
LABOR AND MANAGEMENT COSTS			$10,757		
NET OPERATING PROFIT					$27,748
CAPITAL COSTS					
INTEREST ON OPERATING CAPITAL			$318		
INTEREST ON EQUIPMENT INVESTMENT			$3,166		
TOTAL CAPITAL COSTS				$3,484	
RETURN TO LAND AND RISK					$24,265

LAND VALUE	RETURN TO RISK*	RETURN ON INVESTMENT**
$1,000 /ACRE	$21,865	22.08%
$2,500 /ACRE	$18,265	11.29%
$4,000 /ACRE	$14,665	7.59%
$5,500 /ACRE	$11,065	5.71%
$7,000 /ACRE	$7,465	4.58%
$8,500 /ACRE	$3,865	3.82%

* RETURN TO LAND AND RISK MINUS (INTEREST RATE TIMES LAND VALUE TIMES ACREAGE)
** NET OPERATING PROFIT DIVIDED BY (MACHINERY AND EQUIPMENT VALUE PLUS LAND VALUE)