

## 13. 経 済 評 価

### 13.1 便 益

事業便益は以下のようにまとめることができる。

#### ① 給水人口の増加

目標年次の1987年には、給水人口が34,940人になると予測される。これは現状の41%増である。

#### ② 水圧の増加と時間給水の解消

現状の不十分な水圧が増加すると共に、“水無し地域”と時間制限給水の問題が解消される。また従来、受水者が用意していた水槽や加圧ポンプなどは不要となるはずである。

#### ③ 安全な水

現状では配水管が時として負圧となり、汚水を管内にひきこむ危険があるが、本事業完成後は水圧が上昇するので、このような危険の機会は大巾に減少することになる。

#### ④ 環境改善

24時間給水の実現によって、給水区域内の生活環境は大きく改善されよう。

#### ⑤ 雇用機会の促進

本事業の実施により、土木工事の面で市民に雇用の機会を与えることになる。

#### ⑥ 地価の上昇

水道施設の完備によって、土地の価値が上昇する。

#### ⑦ 火災損害の減少

本事業には、消火栓の設置および消火水量の貯水が含まれ、かつ水圧が増加するので消火活動の点から、火災時の損害を減少させるのに寄与する。

### 13.2 内部収益率

事業の経済的妥当性を判定するために投下資本と回収便益の比較検討を行った。これは数量化できるものが、できないものより必ずしも重要度が高いわけではないことを留意しておく必要がある。

ここでは数量化できる便益として、①給水量増加の便益、②水質改善の便益及び③火災損失の減少を計上した。

上記の数量化できる便益のほか、本事業の国民経済への波及効果を便益として計上した。

## タグピララン

本水道区の場合、LWUAの基準に従い上記3便宜の合計額の10%を本事業の国民経済への波及便益とみなした。

内部収益率の計算は次のような種々の換算係数を用いる感度解析によった。

### 1) 換算係数を用いない場合

### 2) 換算ケースA

- ・外貨……………1.25倍とする(外貨不足要因)
- ・普通入夫賃……………0.5倍とする(失業対策効果)
- ・その他の内貨……………0.95倍とする(間接税相当分の除外)

### 3) 換算ケースB

- ・外貨……………元の数値
- ・普通入夫賃……………ケースAと同じ
- ・その他の外貨……………ケースAと同じ

### 4) 換算ケースC

- ・外貨……………ケースAと同じく1.25倍
- ・普通入夫賃……………元の数値
- ・その他の内貨……………元の数値

上記のそれぞれの場合について内部収益率の計算結果は次のようになり、経済的に妥当である。

- |                  |     |
|------------------|-----|
| 1) 換算係数を用いない場合 : | 16% |
| 2) 換算ケースAの場合 :   | 15% |
| 3) " B " :       | 18% |
| 4) " C " :       | 14% |

財政評価分析表

(第一期)

## FINANCIAL TABLE 1

TAGBILARAN WATER SUPPLY PROJECT  
PROJECT COSTS BY YEAR OF CONSTRUCTION  
(P1,000's)

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Project Components By Major Elements	Costs as of 7-1-81 By Construction Year						
	Total	1983	1984	1985	1986	1987	1988
1. Vehicles	140	—	140				
2. Chlorinator	20	—	20				
3. Wells and Pumps	1,012	—	1,012				
4. Stored Material	229	—	229				
5. Meters & Pressure Gauges	1,719	—	1,719				
6. Distribution System	5,590	—	5,590				
7. Transmission System	1,209	—	1,209				
8. Fire Hydrants	623	—	623				
9. Valves	314	—	314				
10. Reservoir	1,372	—	1,372				
11. Elevated tank	407	—	407				
12. Engineering	1,327	1,327	—				
13. Supervision	442	—	442				
14. Land	37	—	37				
15. Physical Contingency	1,444	133	1,311				
16.							
17.							
18.							
TOTAL, 7-1-81	15,885	1,460	14,425				
ESCALATION FACTORS		1.322500	1.520875				
ESCALATED COSTS	23,870	1,931	21,939				

FINANCIAL TABLE 2  
 TAGBILARAN WATER SUPPLY PROJECT  
 OPERATION AND MAINTENANCE COSTS  
 (P1,000's)

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Year	Fixed, 7-1-81 Costs				Escalated Costs	
	Power	Chemicals	Others	Total	Factor <sup>1/</sup>	Amount
1981	239	69	314	622	1.000000	622
1982	247	71	366	684	1.150000	787
1983	257	74	455	786	1.322500	1,040
1984	267	77	568	912	1.520875	1,387
1985	269	77	619	965	1.703380	1,644
1986	283	81	737	1,101	1.907785	2,101
1987	300	86	825	1,211	2.136719	2,588
1988	300	86	825	1,211	2.393126	2,898
1989	300	86	825	1,211	2.680301	3,246
1990	300	86	825	1,211	2.948331	3,570
1991	300	86	825	1,211	3.243164	3,928
1992	300	86	825	1,211	3.567480	4,320
1993	300	86	825	1,211	3.924228	4,752
1994	300	86	825	1,211	4.316651	5,228
1995	300	86	825	1,211	4.748316	5,750
1996	300	86	825	1,211	5.223148	6,325
1997	300	86	825	1,211	5.745463	6,958
1998	300	86	825	1,211	6.320009	7,654

<sup>1/</sup> Escalation currently 15 percent per year to 1984 (1981 = 1.00),  
 12 percent per year between 1985 and 1989 and 10 percent per year  
 in 1990 and afterwards.

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FINANCIAL TABLE 3  
 TAGBILARAN WATER SUPPLY PROJECT  
 LOAN DISBURSEMENTS AND DEBT SERVICE  
 (P1,000's)

Year	Disbursement <u>1/</u>		Loans Outstanding		Interest Payments		Principal Payments <u>3/</u>	Total Debt Service
	Grant	Loan	Beginning	Ending	First Year <u>2/</u>	Later Years		
1981								
1982								
1983		1,931		2,018				
1984		21,939	2,018	25,126				
1985			25,126	25,054		2,261	72	2,333
1986			25,054	24,157		2,255	897	3,152
1987			24,157	23,260		2,174	897	3,071
1988			23,260	22,360		2,093	897	2,990
1989			22,360	21,466		2,012	897	2,909
1990			21,466	20,569		1,932	897	2,829
1991			20,569	19,672		1,851	897	2,748
1992			19,672	18,775		1,770	897	2,667
1993			18,775	17,878		1,690	897	2,587
1994			17,878	16,981		1,609	897	2,506
1995			16,981	16,084		1,528	897	2,425
1996			16,084	15,187		1,448	897	2,345
1997			15,187	14,290		1,367	897	2,264
1998			14,290	13,393		1,286	897	2,183

1/ From Financial Table 1.

2/ Disbursements assumed to be equally spread during year. Charge with 50 per cent of annual interest in first year.

3/ Principal payments made in equal yearly instalments.

4/ Interest capitalized during construction.

FINANCIAL TABLE 4  
 TAGBILARAN WATER SUPPLY PROJECT  
 CASH REQUIREMENTS PER REVENUE UNIT  
 (P1,000's)

Year	Debt Service	O & M	Total Costs	Estimated Reserves 1/	Cost With Reserves	Revenue Units 2/	Cost Per Revenue Unit 3/
1981		622	622		622	1,714	0.36
1982		787	787		787	1,832	0.43
1983		1,040	1,040		1,040	1,961	0.53
1984		1,387	1,387		1,387	2,158	0.64
1985	2,333	1,644	3,977	199	4,176	2,263	1.85
1986	3,152	2,101	5,253	263	5,516	2,405	2.29
1987	3,071	2,588	5,659	566	6,225	2,571	2.42
1988	2,990	2,898	5,888	589	6,477	2,571	2.52
1989	2,909	3,246	6,155	616	6,771	2,571	2.63
1990	2,829	3,570	6,399	640	7,039	2,571	2.74
1991	2,748	3,928	6,676	668	7,344	2,571	2.86
1992	2,667	4,320	6,987	699	7,686	2,571	2.99
1993	2,587	4,752	7,339	734	8,073	2,571	3.14
1994	2,506	5,228	7,734	773	8,507	2,571	3.31
1995	2,425	5,750	8,175	818	8,993	2,571	3.50
1996	2,345	6,325	8,670	867	9,537	2,571	3.71
1997	2,264	6,958	9,222	922	10,144	2,571	3.95
1998	2,183	7,654	9,837	984	10,821	2,571	4.21

1/ Reserve estimate equal to 10 per cent of total costs. (5 per cent for the first two years)

2/ Revenue units from Tables 9A, 9B and 9C.

3/ Revenue units divided into costs with reserves.

FINANCIAL TABLE 5 - A  
 TAGBIARAN WATER SUPPLY PROJECT  
 ABILITY TO PAY FOR WATER

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1 Year	2 Ave. Monthly Family Income <u>1/</u>	3 Available 5%	4 Average Family Size	5 Household Water Use		7 Revenue Units Per Month <u>2/</u>	8 Max. Ability Per Rev. Unit
				lpcd	Cubic Meters/ Month		
1981	642.00	36.23	5.73	84	14	30	1.21
1982	833.24	41.66	5.72	84	14	30	1.39
1983	958.23	47.91	5.71	83	14	30	1.60
1984	1,101.96	55.10	5.70	82	14	30	1.84
1985	1,234.19	61.71	5.69	85	15	31	1.99
1986	1,382.29	69.11	5.68	89	15	31	2.23
1987	1,548.17	77.41	5.67	93	16	32	2.42
1988	1,733.95	86.70	5.66	94	16	32	2.71
1989	1,942.03	97.10	5.65	97	16	32	3.03
1990	2,136.23	106.81	5.64	98	17	33	3.24
1991	2,349.85	117.49	5.63	101	17	33	3.56
1992	2,584.84	129.24	5.62	102	17	33	3.92
1993	2,843.32	142.17	5.61	102	17	33	4.31

1/ Average monthly income escalated by 15 per cent per year to 1984, 12 per cent per year between 1985 and 1989, and 10 per cent in 1990 and afterwards.

2/ Assumed 1/2" service.

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FINANCIAL TABLE 6 - A  
 TAGBILARAN WATER SUPPLY PROJECT  
 ILLUSTRATIVE CASH FLOW TABLE  
 ₱1,000's EXCEPT CHARGES PER UNIT

Year	Revenue Units 1/	Charges Per Unit	Gross Revenues	Net Revenue 2/		Basic Costs 3/	Required Reserves 4/	Total Costs 5/	Net Income	
				%	Amount				Annual	Cumulative
1981	1,714	0.43	737	95	700	622		622	78	78
1982	1,832	0.43	788	95	749	787		787	-38	40
1983	1,961	0.67	1,314	95	1,248	1,040		1,040	208	248
1984	2,158	1.10	2,373	96	2,278	1,387		1,387	891	1,139
1985	2,263	1.76	3,983	96	3,824	3,977	199	4,176	-352	787
1986	2,405	2.23	5,363	96	5,148	5,253	268	5,521	-373	414
1987	2,571	2.40	6,170	97	5,985	5,659	617	6,276	-291	123
1988	2,571	2.70	6,942	97	6,734	5,888	694	6,582	152	275
1989	2,571	3.00	7,713	97	7,482	6,155	771	6,926	556	831
1990	2,571	3.00	7,713	98	7,559	6,399	771	7,170	389	1,220
1991	2,571	3.50	8,999	98	8,819	6,676	900	7,576	1,243	2,463
1992	2,571	3.90	10,027	98	9,826	6,987	1,003	7,990	1,836	4,299
1993	2,571	3.90	10,027	98	9,826	7,339	1,003	8,342	1,484	5,783

1/ From Tables 9A, 9B and 9C.

2/ Gross revenues from water sales reduced by bad debt allowance.

3/ Total of project debt service, operation and maintenance costs.

4/ Ten percent of gross water sales, after completion of construction. (5 percent for the first two years)

5/ Includes the costs of replacing the first complement of project components with seven years of life expectancy.

FINANCIAL TABLE 7  
TAGBILARAN WATER SUPPLY PROJECT  
ILLUSTRATIVE RATE SCHEDULE

DOMESTIC AND GOVERNMENTAL SERVICE CONNECTIONS, 1/2"

Year	First 10 m <sup>3</sup> <u>1/</u>	Charge for Each Added m <sup>3</sup> <u>2/</u>			Charge <u>3/</u> per Revenue Unit
		11-20	21-45	over 45	
1981	10.75	0.52	0.60	0.73	0.43
1982	10.75	0.52	0.60	0.73	0.43
1983	16.75	0.80	0.94	1.14	0.67
1984	27.50	1.32	1.54	1.87	1.10
1985	44.00	2.11	2.46	2.99	1.76
1986	55.75	2.68	3.12	3.79	2.23
1987	60.00	2.88	3.36	4.08	2.40
1988	67.50	3.24	3.78	4.59	2.70
1989	75.00	3.60	4.20	5.10	3.00
1990	75.00	3.60	4.20	5.10	3.00
1991	87.50	4.20	4.90	5.95	3.50
1992	97.50	4.68	5.46	6.63	3.90
1993	97.50	4.68	5.46	6.63	3.90

Note: 1/ To obtain charge per m<sup>3</sup> for the first 10 m<sup>3</sup> classified by connection size, multiply R.U. charge shown in 3/ above by the following connection size factors.  
 Domestic : 1.0 for 3/8"; 2.5 for 1/2"; 4.0 for 3/4"; 8 for 1"  
 Commercial: 5.0 for 1/2"; 8.0 for 3/4"; 16.0 for 1"; 40.0 for 1 1/2"

2/ To obtain charge for each added m<sup>3</sup>, multiply R.U. charges shown in 3/ by the following block factors.  
 Domestic : 1.2 for 11-20 m<sup>3</sup>; 1.4 for 21-45 m<sup>3</sup>; 1.7 for over 45 m<sup>3</sup>  
 Commercial: 2.4 for 21-45 m<sup>3</sup>; 2.8 for 45-100 m<sup>3</sup>; 2.4 for over 100 m<sup>3</sup>

FINANCIAL TABLE 8

TAGBILARAN WATER SUPPLY PROJECT  
GROWTH IN POPULATION, SERVICE CONNECTIONS  
AND IN DELIVERED AND PROCURED WATER

Year	Ave. Number Service Connections	Number For Service	Persons Served	Daily Use lpcd <u>1/</u>	Annual Water Supply (1,000 M <sup>3</sup> )		
					Delivered	% Unacct.	Produced
1981	2,528	9.7	24,600	105	944	45	1,716
1982	2,818	9.1	25,500	105	1,012	43	1,776
1983	3,255	8.6	28,050	105	1,075	40	1,792
1984	3,783	8.2	30,900	105	1,185	40	1,975
1985	4,129	7.9	32,400	110	1,242	40	2,070
1986	4,337	7.6	33,000	115	1,324	37	2,102
1987	4,585	7.3	33,640	116	1,423	34	2,156
1988	4,585	7.3	33,640	116	1,423	34	2,156
1989	4,585	7.3	33,640	116	1,423	34	2,156
1990	4,585	7.3	33,640	116	1,423	34	2,156
1991	4,585	7.3	33,640	116	1,423	34	2,156
1992	4,585	7.3	33,640	116	1,423	34	2,156
1993	4,585	7.3	33,640	116	1,423	34	2,156

1/ Liters per capita per day.

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## FINANCIAL TABLE 9A

TAGBILARAN WATER SUPPLY PROJECT  
CALCULATION OF REVENUE UNITS

I

## A) AVERAGE NUMBER OF CONCESSIONAIRES

Year	Residential and Government					Commercial and Industrial					Total
	3/8"	1/2"	3/4"	1"	S-Total	1/2"	3/4"	1"	1 1/2"	S-Total	
1981	643	1,478	19	2	2,142	330	34	20	2	386	2,528
1982	729	1,676	22	2	2,429	332	35	20	2	389	2,818
1983	855	1,962	24	3	2,844	352	37	20	2	411	3,255
1984	1,010	2,324	31	3	3,368	355	37	21	2	415	3,783
1985	1,113	2,560	34	3	3,710	359	37	21	2	419	4,129
1986	1,174	2,701	35	4	3,914	363	37	21	3	423	4,337
1987	1,254	2,884	38	4	4,180	365	38	21	3	427	4,585
1988											
1989											
1990											
1991											
1992											
1993											

## B) SERVICE REVENUE UNITS PER CUBIC METER

Year	Residential and Government					Commercial and Industrial					Total
	1.00	2.50	4.0	8.0	S-total	5.0	8.0	16.0	40.0	S-Total	
1981	643	3,695	76	16	4,430	1,650	272	320	80	2,322	6,752
1982	729	4,190	88	16	5,023	1,660	280	320	80	2,340	7,363
1983	855	4,905	98	24	5,882	1,760	296	320	80	2,456	8,338
1984	1,019	5,810	124	24	6,977	1,775	296	336	80	2,487	9,464
1985	1,113	6,400	136	24	7,673	1,795	296	336	80	2,507	10,180
1986	1,174	6,753	140	32	8,099	1,815	296	336	120	2,567	10,666
1987	1,254	7,210	152	32	8,648	1,825	304	336	120	2,585	11,233
1988											
1989											
1990											
1991											
1992											
1993											

FINANCIAL TABLE 9B1  
 TABGILARAN WATER SUPPLY PROJECT  
 CALCULATION OF REVENUE UNITS

I

DOMESTIC

Year	Delivered Water (x1000 cum)	Service Connections (x 0.12)	Net	11 - 20 cum		21 - 45 cum		over 45 cum		Total CRU'S
				cum	x 1.2	cum	x 1.4	cum	x 1.7	
1981	840	257	583	257	308	326	456	-	-	764
1982	901	292	609	292	350	317	444	-	-	794
1983	957	341	616	341	409	275	385	-	-	794
1984	1,055	404	651	404	485	247	346	-	-	831
1985	1,105	445	660	445	534	215	301	-	-	835
1986	1,178	470	708	470	564	238	333	-	-	897
1987	1,266	502	764	502	602	262	367	-	-	969
1988	1,266	502	764	502	602	262	367	-	-	969
1989	1,266	502	764	502	602	262	367	-	-	969
1990	1,266	502	764	502	602	262	367	-	-	969
1991	1,266	502	764	502	602	262	367	-	-	969
1992	1,266	502	764	502	602	262	367	-	-	969
1993	1,266	502	764	502	602	262	367	-	-	969

FINANCIAL TABLE 9B2  
 TABGILARAN WATER SUPPLY PROJECT  
 CALCULATION OF WATER REVENUES UNITS

I

COMMERCIAL

Year	Delivered Water (x1000 cum)	Service Connections (x 0.12)	Net	11 - 45 cum		46 ~ 100 cum		Over 100 cum		Total CRU's
				cum	x 2.4	cum	x 2.8	cum	x 3.4	
1981	104	46	58	58	139	-	-	-	-	139
1982	111	47	64	64	154	-	-	-	-	154
1983	118	49	69	69	166	-	-	-	-	166
1984	130	50	80	80	192	-	-	-	-	192
1985	136	50	86	86	206	-	-	-	-	206
1986	146	51	95	95	228	-	-	-	-	228
1987	157	51	106	106	254	-	-	-	-	254
1988	157	51	106	106	254	-	-	-	-	254
1989	157	51	106	106	254	-	-	-	-	254
1990	157	51	106	106	254	-	-	-	-	254
1991	157	51	106	106	254	-	-	-	-	254
1992	157	51	106	106	254	-	-	-	-	254
1993	157	51	106	106	254	-	-	-	-	254

FINANCIAL TABLE 9C  
SUMMARY OF REVENUE UNITS

I

Year	Residential and Governmental				Commercial and Industrial				Total All
	Service		Total R & C	Service		Total C & I			
	RU/Serv. Connection	Multiplied by 0.12		Commodity Rev. Units	RU/Serv. Connection		Multiplied by 0.12	Commodity Rev. Units	
1981	4,430	532	764	1,296	2,322	279	139	418	1,714
1982	5,023	603	794	1,397	2,340	281	154	435	1,832
1983	5,882	706	794	1,500	2,456	295	166	461	1,961
1984	6,977	837	831	1,668	2,487	298	192	490	2,158
1985	7,673	921	835	1,756	2,507	301	206	507	2,263
1986	8,099	972	897	1,869	2,567	308	228	536	2,405
1987	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1988	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1989	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1990	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1991	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1992	8,648	1,038	969	2,007	2,585	310	254	564	2,571
1993	8,648	1,038	969	2,007	2,585	310	254	564	2,571





經濟 評 価 分 析 表

( 第 一 期 )

ECONOMIC TABLE 1  
    TAGBILARAN     WATER SUPPLY PROJECT  
 SUMMARY OF PROJECT COST

I

Costs as of July 1, 1981 in 1,000 Pesos

Components	Total Cost	Foreign Currency Portion	Local Currency Portion
1. Vehicles	140	70	70
2. Chlorinator	20	18	2
3. Wells and Pumps	1,012	607	405
4. Stored Materials	229	179	50
5. Meters & Pressure Gauge	1,719	1,326	393
6. Distribution System	5,590	3,746	1,844
7. Transmission System	1,209	810	399
8. Fire Hydrants	623	411	212
9. Valves	314	229	85
10. Reservoir	1,372	343	1,029
11. Elevated tank	407	102	305
12. Engineering	1,327	796	531
13. Supervision	442	265	177
14. Land	37	-	37
15.			
16.			
17.			

Source: From Cost Estimates

ECONOMIC TABLE 2  
TAGABILARAN WATER SUPPLY PROJECT  
ANNUAL DEMAND AND GROSS PRODUCTION IN 1,000 M<sup>3</sup>

I

1 Year	2 Average Connections	3 Persons Per Service Connection	4 Population Served	5 Average Water Use		6 Water Delivered Annually	7 Net Increase in Delivered Volume	8 Unaccounted Percentage	9 Annual Production
				Liters/ Capita Per Day	Per Day				
1981	2,528	9.7	24,600	105	944			45	1,716
1982	2,818	9.1	25,500	105	1,012			43	1,776
1983	3,255	8.6	28,050	105	1,075			40	1,792
1984	3,783	8.2	30,900	105	1,185		110	40	1,975
1985	4,129	7.9	32,400	110	1,242		167	40	2,070
1986	4,337	7.6	33,000	115	1,324		249	37	2,102
1987	4,585	7.3	33,640	116	1,423		348	34	2,156
1988	4,585	7.3	33,640	116	1,423		348	34	2,156
1989	4,585	7.3	33,640	116	1,423		348	34	2,156
1990	4,585	7.3	33,640	116	1,423		348	34	2,156
1991	4,585	7.3	33,640	116	1,423		348	34	2,156
1992	4,585	7.3	33,640	116	1,423		348	34	2,156
1993	4,585	7.3	33,640	116	1,423		348	34	2,156

ECONOMIC TABLE 3-A  
 TAGBILARAN WATER SUPPLY PROJECT  
 CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST  
 Costs as of July 1, 1981 in 1,000 Pesos

Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.25	Labor x 0.5	Residual x 0.95	
1. Vehicles	70	70	-	70	87.5	-	66.5	154
2. Chlorinator	18	2	0.2	1.8	22.5	0.1	1.7	24.3
3. Wells and Pumps	607	405	202.5	202.5	758.8	101.3	192.4	1,052.5
4. Stored Materials	179	50	-	50	223.8	-	47.5	271.3
5. Meters & Gauge	1,326	393	78.6	314.4	1,657.5	39.3	298.7	1,995.5
6. Distribution System	3,746	1,844	737.6	1,106.4	4,682.5	368.8	1,051.1	6,102.4
7. Transmission System	810	399	99.8	299.2	1,012.5	49.9	284.2	1,346.6
8. Fire Hydrant	411	212	84.8	127.2	513.8	42.4	120.8	677
9. Valves	229	85	34	51	286.3	17	48.5	351.8
10. Reservoir	343	1,029	668.9	360.1	428.8	334.5	342.1	1,105.4
11. Elevated tank	102	305	198.2	106.8	127.5	99.1	101.5	328.1
12. Engineering	796	531	-	531	995	-	504.5	1,499.5
13. Land	-	37	-	37	-	-	35	35
14. Supervision	265	177	-	177	331	-	168	499
15.								
16.								
17.								

ECONOMIC TABLE 3-B

TAGBILARAN WATER SUPPLY PROJECT

CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST

Costs as of July 1, 1981 in 1,000 Pesos

I

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Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.0	Labor x 0.5	Residual x 0.95	
1. Vehicles	70	70	-	70	-	-	66.5	136.5
2. Chlorinators	18	2	0.2	1.8	18	0.1	1.7	19.8
3. Wells and Pumps	607	405	202.5	202.5	607	101.3	192.4	900.7
4. Stored Materials	179	50	-	50	179	-	47.5	226.5
5. Meters & Gauge	1,326	393	78.6	314.4	1,326	39.3	298.7	1,664
6. Distribution System	3,746	1,844	737.6	1,106.4	3,746	368.8	1,051.1	5,165.9
7. Transmission System	810	399	99.8	299.2	810	49.9	284.2	1,144.1
8. Fire Hydrants	411	212	84.8	127.2	411	42.4	120.8	574.2
9. Valves	229	85	34	51	229	17	48.5	294.5
10. Reservoir	343	1,029	668.9	360.1	343	334.5	342.1	1,019.5
11. Elevated tank	102	305	198.2	106.8	102	991	101.5	302.6
12. Engineering	796	531	-	531	796	-	504.5	1,300.5
13. Land	-	37	-	37	-	-	35	35
14. Supervision	265	177	-	177	265	-	168	433
15.								
16.								
17.								

ECONOMIC TABLE 3-C  
 TAGBILARAN WATER SUPPLY PROJECT  
 CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST  
 Costs as of July 1, 1981 in 1,000 pesos

Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.25	Labor x 1.0	Residual x 1.0	
1. Vehicles	70	70	-	70	87.5	-	70	157.5
2. Chlorinators	18	2	0.2	1.8	22.5	0.2	1.8	24.5
3. Wells and Pumps	607	405	202.5	202.5	758.8	202.5	202.5	1,163.8
4. Stored Materials	179	50	-	50	223.8	-	50	273.8
5. Meters	1,326	393	78.6	314.4	1,657.5	78.6	314.4	2,050.5
6. Distribution System	3,746	1,844	737.6	1,106.4	4,682.5	737.6	1,106.4	6,526.5
7. Transmission System	810	399	99.8	299.2	1,012.5	99.8	299.2	1,411.5
8. Fire Hydrants	411	212	84.8	127.2	513.8	84.8	127.2	725.8
9. Valves	229	85	34	51	286.3	34	51	371.3
10. Reservoir	343	1,029	668.9	360.1	428.8	668.9	360.1	1,457.8
11. Elevated tank	102	305	198.2	106.8	127.5	198.2	106.8	432.5
12. Engineering	796	531	-	531	995	-	531	1,526
13. Land	-	37	-	37	-	-	37	37
14. Supervision	265	177	-	177	331	-	177	508
15.								
16.								
17.								

ECONOMIC TABLE 4-0  
 TAGBILARAN WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 ₱ x 1,000

I

Value without CONVERSION

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicles	140	-	140				
2. Chlorinators	20	-	20				
3. Wells and Pumps	1,012	-	1,012				
4. Stored Materials	229	-	229				
5. Meters & Gauges	1,719	-	1,719				
6. Distribution System	5,590	-	5,590				
7. Transmission System	1,209	-	1,209				
8. Fire Hydrants	623	-	623				
9. Valves	314	-	314				
10. Reservoir	1,372	-	1,372				
11. Elevated tank	407	-	407				
12. Engineering	1,327	1,327	-				
13. Land	37	-	37				
14. Supervision	442	-	442				
15.							
16.							
17.							
18.							
Total	14,441	1,327	13,114				

ECONOMIC TABLE 4-A  
 TAGBILARAN WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 ₱ x 1,000

I

Value with CONVERSION A

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicles	154	-	154				
2. Chlorinators	24	-	24				
3. Wells and Pumps	1,053	-	1,053				
4. Stored Materials	271	-	271				
5. Meters & Gauges	1,996	-	1,996				
6. Distribution System	6,102	-	6,102				
7. Transmission System	1,347	-	1,347				
8. Fire Hydrants	677	-	677				
9. Valves	352	-	352				
10. Reservoir	1,105	-	1,105				
11. Elevated tank	328	-	328				
12. Engineering	1,500	1,500	-				
13. Land	35	-	35				
14. Supervision	499	-	499				
15.							
16.							
17.							
18.							
Total	15,443	1,500	13,943				



ECONOMIC TABLE 4-B  
 TAGBILARAN WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 P x 1,000

I

Value with CONVERSION B

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicles	137	-	137				
2. Chlorinators	20	-	20				
3. Wells and Pumps	901	-	901				
4. Stored Materials	227	-	227				
5. Meters & Gauges	1,664	-	1,664				
6. Distribution System	5,166	-	5,166				
7. Transmission System	1,144	-	1,144				
8. Fire Hydrants	574	-	574				
9. Valves	295	-	295				
10. Reservoir	1,020	-	1,020				
11. Elevated tank	303	-	303				
12. Engineering	1,301	1,301	-				
13. Land	35	-	35				
14. Supervision	433		433				
15.							
16.							
17.							
18.							
<b>Total</b>	<b>13,220</b>	<b>1,301</b>	<b>11,919</b>				

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ECONOMIC TABLE 4-C  
 TAGBILARAN WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 P x 1,000

I

Value with CONVERSION C

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicles	158	-	158				
2. Chlorinators	26	-	26				
3. Wells and Pumps	1,164	-	1,164				
4. Stored Materials	274	-	274				
5. Meters	2,051	-	2,051				
6. Distribution System	6,527	-	6,527				
7. Transmission System	1,412	-	1,412				
8. Fire Hydrants	726	-	726				
9. Valves	371	-	371				
10. Reservoir	1,458	-	1,458				
11. Elevated tank	433	-	433				
12. Engineering	1,526	1,526	-				
13. Land	37	-	37				
14. Supervision	508	-	508				
15.							
16.							
17.							
18.							
Total	16,671	1,526	15,145				

## ECONOMIC TABLE 5

**TAGBILARAN WATER SUPPLY PROJECT**  
**OPERATION AND MAINTENANCE EXPENSES**  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Year	Power	Chemicals	Others	Total	Net Costs
1981	239	69	314	622	
1982	247	71	366	684	
1983	257	74	455	786	102
1984	267	77	568	912	228
1985	269	77	619	965	281
1986	283	81	737	1,101	417
1987	300	86	825	1,211	527
1988	300	86	825	1,211	527
1989	300	86	825	1,211	527
1990	300	86	825	1,211	527
1991	300	86	825	1,211	527
1992	300	86	825	1,211	527
1993	300	86	825	1,211	527

Base Year = 1983

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ECONOMIC TABLE 6-0

TAGBILARAN WATER SUPPLY PROJECT  
LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
 ₱ x 1,000

I

Value without CONVERSION

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicles	140				140
2. Chlorinator	20				20
3. Stored Materials	229				229
4. Wells and Pumps		1,102			1,102
5. Meters & Pressure Gauges		1,719			1,719
6. Distribution System			5,590		5,590
7. Transmission System			1,209		1,209
8. Fire Hydrants			623		623
9. Valves			314		314
10. Reservoir			1,372		1,372
11. Elevated Tank			407		407
12. Land				37	37

7 Year Items	Years of Installation				Years of Replacement			
	1984				1991	1998	2005	2012
1. Vehicles	1984				1991	1998	2005	2012
2. Chlorinator	1984				1991	1998	2005	2012
3. Stored Materials	1984				1991	1998	2005	2012
4.								

15 Year Items	Years of Installation				Years of Replacement			
	1984				1999			
1. Wells and Pumps	1984				1999			
2. Meters & Pressure Gauges	1984				1999			
3.								
4.								

ECONOMIC TABLE 6-A

TAGBILARAN WATER SUPPLY PROJECT  
 LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
 P x 1,000

I

Value with CONVERSION A

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicles	154				154
2. Chlorinator	24				24
3. Stored Materials	271				271
4. Wells and Pumps		1,053			1,053
5. Meters & Pressure Gauge		1,996			1,996
6. Distribution System			6,102		6,102
7. Transmission System			1,347		1,347
8. Fire Hydrants			677		677
9. Valves			352		352
10. Reservoir			1,105		1,105
11. Elevated Tank			328		328
12. Land				35	35

7 Year Items	Years of Installation				Years of Replacement			
	1984				1991	1998	2005	2012
1. Vehicles	1984				1991	1998	2005	2012
2. Chlorinator	1984				1991	1998	2005	2012
3. Stored Materials	1984				1991	1998	2005	2012
4.								

15 Year Items	Years of Installation				Years of Replacement			
	1984				1999			
1. Wells and Pumps	1984				1999			
2. Meters & Gauge	1984				1999			
3.								
4.								

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ECONOMIC TABLE 6-B

TAGBILARAN WATER SUPPLY PROJECT  
LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
P x 1,000

I

Value with CONVERSION B

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicles	137				137
2. Chlorinator	20				20
3. Stored Materials	227				227
4. Wells and Pumps		901			901
5. Meters & Gauge		1,664			1,664
6. Distribution System			5,166		5,166
7. Transmission System			1,144		1,144
8. Fire Hydrants			574		574
9. Valves			295		295
10. Reservoir			1,020		1,020
11. Elevated Tank			303		303
12. Land				35	35

7 Year Items	Years of Installation				Years of Replacement				
1. Vehicles	1984				1991	1998	2005	2012	
2. Chlorinator	1984				1991	1998	2005	2012	
3. Stored Materials	1984				1991	1998	2005	2012	
4.									

15 Year Items	Years of Installation				Years of Replacement				
1. Wells and Pumps	1984				1999				
2. Meters & Gauge	1984				1999				
3.									
4.									

ECONOMIC TABLE 6-C

TAGBILARAN WATER SUPPLY PROJECT  
 LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
 ₱ x 1,000

I

Value with CONVERSION C

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicles	158				158
2. Chlorinator	26				26
3. Stored Materials	274				274
4. Wells and Pumps		1,164			1,164
5. Meters & Gauge		2,051			2,051
6. Distribution System			6,527		6,527
7. Transmission System			1,412		1,412
8. Fire Hydrants			726		726
9. Valves			371		371
10. Reservoir			1,458		1,458
11. Elevated Tank			433		433
12. Land				37	37

7 Year Items	Years of Installation					Years of Replacement				
	1984					1991	1998	2005	2012	
1. Vehicles	1984					1991	1998	2005	2012	
2. Chlorinator	1984					1991	1998	2005	2012	
3. Stored Materials	1984					1991	1998	2005	2012	
4.										

15 Year Items	Years of Installation					Years of Replacement				
	1984					1999				
1. Wells and Pumps	1984					1999				
2. Meters & Gauge	1984					1999				
3.										
4.										

ECONOMIC TABLE 7-0  
TAGBILARAN WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

I

Value without CONVERSION

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
Infinite Life, Year Purchased			
1984	37	75%	28
50 Year Life, Year Constructed			
1 1984	9,515	42%	3,996
15 Year Life, Year of Replacement			
1 1999	2,731	7%	191
7 Year Life, Years of Final Replacement			
1 2012	389	86%	335
Total			4,550



ECONOMIC TABLE 7-A  
 TAGBILARAN WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 ₱ x 1,000

I

Value with CONVERSION A

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
Infinite Life, Year Purchased			
1984	35	75%	26
50 Year Life, Year Constructed			
1 1984	9,911	42%	4,163
15 Year Life, Year of Replacement			
1 1999	3,049	7%	213
7 Year Life, Years of Final Replacement			
1 2012	449	86%	386
Total			4,788

ECONOMIC TABLE 7-B  
 TAGBILARAN WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

I

Value with CONVERSION B

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
Infinite Life, Year Purchased			
1984	35	75%	26
50 Year Life, Year Constructed			
1 1984	8,502	42%	3,571
15 Year Life, Year of Replacement			
1 1999	2,565	7%	180
7 Year Life, Years of Final Replacement			
1 2012	384	86%	330
Total			4,107

ECONOMIC TABLE 7-C  
 TAGBILARAN WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

I

Value with CONVERSION C

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
Infinite Life, Year Purchased			
1 1984	37	75%	28
50 Year Life, Year Constructed			
1 1984	10,927	42%	4,589
15 Year Life, Year of Replacement			
1 1999	3,215	7%	225
7 Year Life, Years of Final Replacement			
1 2012	458	86%	394
Total			5,236

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ECONOMIC TABLE 8-0

TAGBILARAN WATER SUPPLY PROJECT  
SUMMARY OF ALL PROJECT COSTS  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Value without CONVERSION

Year	Cost of Facilities	Net O & M	Replacement Costs	Total	Salvage	Net Cost
1982						
1983	1,327	102		1,429		
1984	13,114	228		13,342		
1985		281		281		
1986		417		417		
1987		527		527		
1988		527		527		
1989		527		527		
1990		527		527		
1991		527	389	916		
1992		527		527		
1993		527		527		
1994		527		527		
1995		527		527		
1996		527		527		
1997		527		527		
1998		527	389	916		
1999		527	2,731	3,258		
2000		527		527		
2001		527		527		
2002		527		527		
2003		527		527		
2004		527		527		
2005		527	389	916		
2006		527		527		
2007		527		527		
2008		527		527		
2009		527		527		
2010		527		527		
2011		527		527		
2012		527	389	916		
<b>Total</b>	<b>14,441</b>	<b>14,730</b>	<b>4,287</b>	<b>33,458</b>	<b>4,550</b>	<b>28,908</b>

## ECONOMIC TABLE 8-A

TAGBILARAN WATER SUPPLY PROJECT  
SUMMARY OF ALL PROJECT COSTS  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Value with CONVERSION A

Year	Cost of Facilities	Net O & M	Replace-ment Costs	Total	Salvage	Net Cost
1982						
1983	1,500	102		1,602		
1984	13,943	228		14,171		
1985		281		281		
1986		417		417		
1987		527		527		
1988		527		527		
1989		527		527		
1990		527		527		
1991		527	449	976		
1992		527		527		
1993		527		527		
1994		527		527		
1995		527		527		
1996		527		527		
1997		527		527		
1998		527	449	976		
1999		527	3,049	3,576		
2000		527		527		
2001		527		527		
2002		527		527		
2003		527		527		
2004		527		527		
2005		527	449	976		
2006		527		527		
2007		527		527		
2008		527		527		
2009		527		527		
2010		527		527		
2011		527		527		
2012		527	449	976		
<b>Total</b>	<b>15,443</b>	<b>14,730</b>	<b>4,845</b>	<b>35,018</b>	<b>(4,788)</b>	<b>30,230</b>

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ECONOMIC TABLE 8-B

TAGBILARAN WATER SUPPLY PROJECT  
SUMMARY OF ALL PROJECT COSTS  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Value with CONVERSION B

Year	Cost of Facilities	Net O & M	Replace-ment Costs	Total	Salvage	Net Cost
1982						
1983	1,301	102		1,403		
1984	11,919	228		12,147		
1985		281		281		
1986		417		417		
1987		527		527		
1988		527		527		
1989		527		527		
1990		527		527		
1991		527	384	911		
1992		527		527		
1993		527		527		
1994		527		527		
1995		527		527		
1996		527		527		
1997		527		527		
1998		527	384	911		
1999		527	2,565	3,092		
2000		527		527		
2001		527		527		
2002		527		527		
2003		527		527		
2004		527		527		
2005		527	384	911		
2006		527		527		
2007		527		527		
2008		527		527		
2009		527		527		
2010		527		527		
2011		527		527		
2012		527	384	911		
Total	13,220	14,730	4,101	32,051	(4,107)	27,944

ECONOMIC TABLE 8-C  
 TAGBILARAN WATER SUPPLY PROJECT  
 SUMMARY OF ALL PROJECT COSTS  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Value with CONVERSION C

Year	Cost of Facilities	Net O & M	Replace-ment Costs	Total	Salvage	Net Cost
1982						
1983	1,526	102		1,628		
1984	15,145	228		15,373		
1985		281		281		
1986		417		417		
1987		527		527		
1988		527		527		
1989		527		527		
1990		527		527		
1991		527	458	985		
1992		527		527		
1993		527		527		
1994		527		527		
1995		527		527		
1996		527		527		
1997		527		527		
1998		527	458	985		
1999		527	3,215	3,742		
2000		527		527		
2001		527		527		
2002		527		527		
2003		527		527		
2004		527		527		
2005		527	458	985		
2006		527		527		
2007		527		527		
2008		527		527		
2009		527		527		
2010		527		527		
2011		527		527		
2012		527	458	985		
Total	16,671	14,730	5,047	36,448	(5,236)	31,212

## ECONOMIC TABLE 9

TAGBILARAN WATER SUPPLY PROJECT  
 BENEFITS AT 1981 PRICES  
 (P x 1,000)

I

Year	Volume	Qualitative	Fire Loss Reduction	Total	National Interest Adjustment
1982					
1983					
1984	407	398	206	1,011	1,112
1985	618	795	227	1,640	1,804
1986	921	1,193	250	2,364	2,600
1987	1,288	1,193	280	2,761	3,037
1988	1,288	1,193	280	2,761	3,037
1989	1,288	1,193	280	2,761	3,037
1990	1,288	1,193	280	2,761	3,037
1991	1,288	1,193	280	2,761	3,037
1992	1,288	1,193	280	2,761	3,037
1993	1,288	1,193	280	2,761	3,037
1994	1,288	1,193	280	2,761	3,037
1995	1,288	1,193	280	2,761	3,037
1996	1,288	1,193	280	2,761	3,037
1997	1,288	1,193	280	2,761	3,037
1998	1,288	1,193	280	2,761	3,037
1999	1,288	1,193	280	2,761	3,037
2000	1,288	1,193	280	2,761	3,037
2001	1,288	1,193	280	2,761	3,037
2002	1,288	1,193	280	2,761	3,037
2003	1,288	1,193	280	2,761	3,037
2004	1,288	1,193	280	2,761	3,037
2005	1,288	1,193	280	2,761	3,037
2006	1,288	1,193	280	2,761	3,037
2007	1,288	1,193	280	2,761	3,037
2008	1,288	1,193	280	2,761	3,037
2009	1,288	1,193	280	2,761	3,037
2010	1,288	1,193	280	2,761	3,037
2011	1,288	1,193	280	2,761	3,037
2012	1,288	1,193	280	2,761	3,037
Total	35,434	33,404	7,963	76,801	84,478



## ECONOMIC TABLE 10-0

TAGBILARAN WATER SUPPLY PROJECT  
INTERNAL RATE OF RETURN COMPUTATION

I

Cost Value without CONVERSION

Year	Total Cost	Total Benefit	Net Benefit	Present Net Benefit
1982				
1983	1,429	-	-1,429	-1,429
1984	13,342	1,112	-12,230	-10,540
1985	281	1,804	1,523	1,131
1986	417	2,600	2,183	1,397
1987	527	3,037	2,510	1,385
1988	527	3,037	2,510	1,193
1989	527	3,037	2,510	1,029
1990	527	3,037	2,510	886
1991	916	3,037	2,121	646
1992	527	3,037	2,510	658
1993	527	3,037	2,510	567
1994	527	3,037	2,510	489
1995	527	3,037	2,510	421
1996	527	3,037	2,510	363
1997	527	3,037	2,510	313
1998	916	3,037	2,121	228
1999	3,258	3,037	-221	-20
2000	527	3,037	2,510	200
2001	527	3,037	2,510	173
2002	527	3,037	2,510	149
2003	527	3,037	2,510	128
2004	527	3,037	2,510	111
2005	916	3,037	2,121	81
2006	527	3,037	2,510	82
2007	527	3,037	2,510	71
2008	527	3,037	2,510	61
2009	527	3,037	2,510	53
2010	527	3,037	2,510	45
2011	527	3,037	2,510	39
2012	916	3,037	6,671*	89*
Salvage(-)	4,550			
Total	28,908	84,478	55,570	-1

Rate of Return = 0.16

ECONOMIC TABLE 10-A  
TAGBILARAN WATER SUPPLY PROJECT  
INTERNAL RATE OF RETURN COMPUTATION

Cost Value with CONVERSION A

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,602	-	-1,602	-1,602
1984	14,171	1,112	-13,059	-11,371
1985	281	1,804	1,523	1,155
1986	417	2,600	2,183	1,441
1987	527	3,037	2,510	1,443
1988	527	3,037	2,510	1,256
1989	527	3,037	2,510	1,094
1990	527	3,037	2,510	953
1991	976	3,037	2,061	681
1992	527	3,037	2,510	722
1993	527	3,037	2,510	629
1994	527	3,037	2,510	548
1995	527	3,037	2,510	477
1996	527	3,037	2,510	415
1997	527	3,037	2,510	362
1998	976	3,037	2,061	258
1999	3,576	3,037	-539	-59
2000	527	3,037	2,510	239
2001	527	3,037	2,510	208
2002	527	3,037	2,510	181
2003	527	3,037	2,510	158
2004	527	3,037	2,510	137
2005	976	3,037	2,061	98
2006	527	3,037	2,510	104
2007	527	3,037	2,510	91
2008	527	3,037	2,510	79
2009	527	3,037	2,510	69
2010	527	3,037	2,510	60
2011	527	3,037	2,510	52
2012	976	3,037	6,849*	124*
Salvage (-)	4,788			
Total	30,230	84,478	54,248	2

\* Values include salvage.

Rate of Return = 0.15

ECONOMIC TABLE 10-B  
 TAGBILARAN WATER SUPPLY PROJECT  
 INTERNAL RATE OF RETURN COMPUTATION

I

Cost Value with CONVERSION B

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,403	-	-1,403	-1,403
1984	12,147	1,112	-11,035	-9,385
1985	281	1,804	1,523	1,102
1986	417	2,600	2,183	1,343
1987	527	3,037	2,510	1,313
1988	527	3,037	2,510	1,117
1989	527	3,037	2,510	950
1990	527	3,037	2,510	808
1991	911	3,037	2,126	582
1992	527	3,037	2,510	584
1993	527	3,037	2,510	497
1994	527	3,037	2,510	423
1995	527	3,037	2,510	359
1996	527	3,037	2,510	306
1997	527	3,037	2,510	260
1998	911	3,037	2,126	187
1999	3,092	3,037	-55	-4
2000	527	3,037	2,510	160
2001	527	3,037	2,510	136
2002	527	3,037	2,510	116
2003	527	3,037	2,510	98
2004	527	3,037	2,510	84
2005	911	3,037	2,126	60
2006	527	3,037	2,510	61
2007	527	3,037	2,510	51
2008	527	3,037	2,510	44
2009	527	3,037	2,510	37
2010	527	3,037	2,510	32
2011	527	3,037	2,510	27
2012	911	3,037	6,233*	57*
Salvage(-)	4,107			
Total	27,944	84,478	56,534	2

\* Values include salvage.

Rate of Return = 0.18

## ECONOMIC TABLE 10-C

I  
TAGBILARAN WATER SUPPLY PROJECT  
INTERNAL RATE OF RETURN COMPUTATION

Cost Value with CONVERSION C

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,628	-	-1,628	-1,628
1984	15,373	1,112	-14,261	-12,547
1985	281	1,804	1,523	1,179
1986	417	2,600	2,183	1,487
1987	527	3,037	2,510	1,504
1988	527	3,037	2,510	1,323
1989	527	3,037	2,510	1,164
1990	527	3,037	2,510	1,024
1991	985	3,037	2,052	737
1992	527	3,037	2,510	793
1993	527	3,037	2,510	698
1994	527	3,037	2,510	614
1995	527	3,037	2,510	540
1996	527	3,037	2,510	475
1997	527	3,037	2,510	418
1998	985	3,037	2,052	301
1999	3,742	3,037	-705	-91
2000	527	3,037	2,510	285
2001	527	3,037	2,510	250
2002	527	3,037	2,510	220
2003	527	3,037	2,510	194
2004	527	3,037	2,510	171
2005	985	3,037	2,052	123
2006	527	3,037	2,510	132
2007	527	3,037	2,510	116
2008	527	3,037	2,510	102
2009	527	3,037	2,510	90
2010	527	3,037	2,510	79
2011	527	3,037	2,510	70
2012	985	3,037	7,288*	178*
Salvage (-)	5,236			
Total	31,212	84,478	53,266	1

\* Values include salvage.

Rate of Return = 0.14