APPENDIX A-8-5

Capacity Calculation of the Water Treatment Plants

Capacity Calculation for Treatment Plant Treatment Plant: T 3 (Khlong Khata)

```
: Item : Total System ( for 2011 )
                Total System ( for 2011 )
:Planned Flow : Q= 13,900 cu m/d

: (Daily Max) : = 579 cu m/hr

: = 9.7 cu m/min

: = 0.161 cu m/sec
: (1)
:Receiving Well :
: Dia 3.0 m
     : v= 18 cu m
: t= 1.8 min
: (2)
: (2)
:Mixing Tank
: Criteria : T= 1.0 min
      .
     Dimension: Square x 4 units: L m x W m x D m x units: 1.2 1.5 1.5 4
       : v = 11 cu m
       : t = 1.1 min
       Mixer: Mechanical Flush Mixer
```

Capacity Calculation for Treatment Plant Treatment Plant: T 3 (Khlong Khata)

: Item	: Total System (for 2011) :
:(3) Coagulant Mix	ing
	: Hydraulic Mixing : Solid Aluminum Sulphate (Al2(SO4)3) : containing 15 % Al2-O3 :
	Dosage Rate: 10-25 mg-solid alum/l : Average 10 mg/l :
: : :	Coagulant Solution: 5 % solution Dosage Amount: 139 kg-Alum/day
:	Coagulant Solution (5 % solution)
	= 3 cu m/day
No. of Mixer	2 units
Type	Batch Type Mixing
Capacity	1.4 cu m/unit :
Dimension	Square x 2 units (1 stand by): L m x W m x D m x units 1.0 1.5 2.0 2
	v = 3.0 cu m/unit
	Total V = 3.0 cu m :

Item	Total System (for 2011)
(4) Flocculator	•
Type	: : Hydraulic Flocculation
No.	N = 2 lines x 2 units 4 units
Unit Flow Criteria	q = 2.41 cu m/min/unit T = 30 min
en e	W m x L m x D m x n lines 1.5 20.0 2.5 2 v = 75 cu m/unit t = 31.1 min

```
Capacity Calculation for Treatment Plant
Treatment Plant: T 3 (Khlong Khata)
```

Treatment Plant:	T 3 (Khlong Khata)
Item	Total System (for 2011) :
: (5) :Sedimentation Bas	
Type	Rectanglar, Horizontal Flow
No.	N = 2 line x 2 basins
•	= 4 basins
: Unit Flow	q = 144.8 cu m/hr/basin
: Criteria	Retention Time T = 4 hours
Dimension	W m x L m x D m x N : 5 30 4.0 4 :
:	v = 600 cu m/basin
	t = 4.1 hours
: :Flow velocity	v = 12.1 cm/min
: : Surface Load	a = 23.2 m3/m2/day
: :Sludge Removal :	Hydraulic Removal
: Sludge Amount	
Solid Amount (ton-DS) : : :	So = Q(K(T1-T2)+0.16xB)x10^-6 where So:Sludge dry weight(ton) Q:Treated water amount(m3/d) K:Coefficient converting turbi to SS (0.8-1.5 ->>1.2) T1:Turbidity in raw water (ave T2:Turbidity after Sedimentati B:Alum dosage rate (ave.= 10 m
	So = 0.14 ton-DS/day
•	Water Contents of Drained Sludge
	w = 99.5 %
:	Sludge Volume
:	v = 28 cu m/d

Capacity Calculation for Treatment Plant Treatment Plant: T 3 (Khlong Khata)

•	1 3 (Kniong Knata)
Item	Total System (for 2011) :
(6) Rapid Sand Filter	
Туре	Down Flow, Single Media
: : (N = 2 lines x 4 units
	= 8 units
: : Unit Flow	q = 1,738 cu m/day/unit :
Criteria :	Surface Load : 120 - 150 m3/m2/day :
Dimension	: W m x L m x N units : 3.0 4.5 8 :
•	a = 14 sq m/unit :
: : Surface Load :	: La = 128.7 m3/m2/day :
:Filter Washing : Frequency	Once every other day for each filter:
Rate	Surface Washing
	0.2 m3/m2/min x 5 min
	Backwashing :
	0.6 m3/m2/min x 10 min
: : Water Amount	: Surface Washing :
required:	v = 14 sq m/unit x 8 units
	\times 0.2 m3/m2/min x 5 min x (1/2) :
•	= 54 cu m/day
•	Backwashing
	v = 14 sq m/unit x 8 units
•	x = 0.6 m3/m2/min x = 10 min x = (1/2):
• •	= 324 cu m/day :
: :	: Total q= 378 cu m/day :

Capacity Calculation for Treatment Plant Treatment Plant: T 3 (Khlong Khata)

```
A THE SALE SHEET SEED SHEET SH
                                            Item : Total System ( for 2011 )
                                                                                       و المراقع المر
                          Solid Amount :
                          in Wastewater:
                          Solid Amount :
                                                                                                                          So = Q*K*(T1-T2)*10^-6
                                                       (ton-DS):
                                                                                                                                  where So:Sludge dry weight(ton)
                                                                                                                                                                                               Q: Treated water amount (m3/d)
                                                                                                                                                                                                K : Coefficient converting turbi
                                                                                                                                                                                                               to SS (0.8-1.5 \rightarrow > 1.2)
                                                                                                                                T1 : Turbidity before filter (ave
                                                                                                                                                                                              T2 : Turbidity after filter( ave
                                                                                                                                                                So = 0.12 \text{ ton-DS/day}
                                                                                                                                                          s = 309 mg/l
                                      SS Contents:
:Clear Water Reservoir
                                                    No. : N =
                                                                                                                                                                      1 units
                                      Criteria
                                                                                                                : Retention Time
             Required Volume: V = 4,633 cu m
                                     Dimension: L m x W m x D m x N units: 32 15 5 2
                                                                                                                : Total Volume
                                                                                                                v = 4,800 \text{ cu m}
                   Retention Time : t = 8.3 hours
```

Total System (for 2011) :Chlorination Equipment : Injection Point : at the Inlet of Clear Water Reservoir Dosage Rate : 2.0 ppm Type : Liquid Chlorine (50 kg cylinder) 28 kg- Cl gas/day Amount : Injector : Vacuum Type Injector 2 units : No. of unit (excl. 1 units stand-by) : Rate 0.58 kg/h/unit 10 kg/h/unit : Capacity Storage: 1 month : Storage Amount : 28 kg /day x 30 day = 834 kg : = 17 cylinders (50 kg): :(9) Clear Water Pump No. : N = 3 units + 1 stand-by : Flow per unit : q = 4.5 cu m/min/unit : Diameter : D = 200 mm 40 m Head : H = 50 KW : Motor output : P = Total Capacity: Q = 19,460 cu m/day

Capacity Calculation for Treatment Plant Treatment Plant: T 4 (Bang Nieo Dam)

Treatment Plant:	T 4 (Bang Nieo Dam)
: Item	: Total System (for 2011) :
, 1 & 3,1111	Q= 21,000 cu m/d = 875 cu m/hr = 14.6 cu m/min = 0.243 cu m/sec
:No. of Treatment:	Line : 2 Lines : : 10,500 cu m/d x 2 lines :
: (1) :Receiving Well : Criteria : : : : : : : : : : : : : : : : : : :	T= 1.5 min d= 3.0 m 1 unit Circular Dia 3.0 m v= 21 cu m t= 1.5 min
: (2) :Mixing Tank : Criteria	T= 1.0 min
Dimension Dimension Control Dimension	Square x 4 units L m x W m x D m x units 1.5 2.0 1.5 4 v = 18 cu m t = 1.2 min
: Mixer :	: Mechanical Flush Mixer

Capacity Calculation for Treatment Plant Treatment Plant: T 4 (Bang Nieo Dam)

: Item : Total System (for 2011) : :(3) Coagulant Mixing Type: Hydraulic Mixing Coagulant: Solid Aluminum Sulphate (Al2(SO4)3) containing 15 % Al2-03 : Dosage Rate : 10-25 mg-solid alum/l Average 10 mg/l : Coagulant Solution : 5 % solution : Dosage Amount : 210 kg-Alum/day : Coagulant Solution (5 % solution) = 4 cu m/day No. of Mixer : 2 units Type : Batch Type Mixing : 2.1 cu m/unit Capacity : Square x 3 units (1 s : L m x W m x D m x units : 1.0 1.5 2.0 3 Dimension 3 units (1 stand by): 2.0 3.0 cu m/unit : Total V = 6.0 cu m

Capacity Calculation for Treatment Plant Treatment Plant: T 4 (Bang Nieo Dam)

: Item	: Total System (for 2011) :
: (4) :Flocculator	
Type	: Hydraulic Flocculation
: No.	: N = 2 lines x 2 units :
: :	: = 4 units :
Unit Flow	: q = 3.65 cu m/min/unit :
: Criteria	: T = 30 min :
Dimension	: W m x L m x D m x n lines : 2.0 24.0 2.5 4 :
	v = 120 cu m/unit
	t = 32.9 min
	<u>: </u>

Capacity Calculation for Treatment Plant Treatment Plant: T 4 (Bang Nico Dam)

```
and and a second second
: Item : Total System ( for 2011 )
:Sedimentation Basin
                                     Type : Rectanglar, Horizontal Flow
                                                         : N = 2 \text{ line } x 2 basins
                                                                                                       4 basins
           Unit Flow :
                                                          : q = 218.8 cu m/hr/basin
                    Criteria : Retention Time
                                                           : T = 4 hours
                Dimension: W m x L m x D m x N: 6 38 4.0
                                                              : v = 912 cu m/basin
                                                                                           4.2 hours
                                                        15.2 \text{ cm/min}
:Flow velocity
                                                         : v =
: Surface Load : a = 23.0 \text{ m}3/\text{m}2/\text{day}
:Sludge Removal : Hydraulic Removal
        Sludge Amount:
             Solid Amount :
             (ton-DS): So = Q(K(T1-T2)+0.16xB)x10^-6
                                                                 where So:Sludge dry weight(ton)
Q:Treated water amount(m3/d)
K:Coefficient converting turbi
to SS (0.8-1.5 ->>1.2)
T1:Turbidity in raw water (ave
T2:Turbidity after Sedimentati
                                                                                                        B:Alum dosage rate (ave. = 5 mg
                                                                                           So = 0.19 \text{ ton-DS/day}
                                    : Water Contents of Drained Sludge :
: Sludge Volume
```

Capacity Calculation for Treatment Plant
Treatment Plant: T 4 (Bang Nieo Dam)

Item	: Total System (for 2011) :
(6) Rapid Sand Filter	
Type	: Down Flow, Single Media
No.	: N = 2 lines x 4 units
	: = 8 units :
Unit Flow	: $q = 2,625 \text{ cu m/day/unit}$:
Criteria	: Surface Load : 120 - 150 m3/m2/day :
Dimension	: W m x L m x N units : 4.0 5.0 8 :
	: a = 20 sq m/unit :
Surface Load	: La = 131.3 m3/m2/day :
Filter Washing Frequency	: : Once every other day for each filter :
Rate	: Surface Washing :
	: 0.2 m3/m2/min x 5 min :
	: Backwashing :
	: 0.6 m3/m2/min x 10 min :
Water Amount	: : Surface Washing :
required	v = 20 sq m/unit x 8 units
	x 0.2 m3/m2/min x 5 min x (1/2):
	: : 80 cu m/day :
	: Backwashing :
	v = 20 sq m/unit x 8 units
	x 0.6 m3/m2/min x 10 min x (1/2):
	= 480 cu m/day :
	Total q= 560 cu m/day :

Capacity Calculation for Treatment Plant Treatment Plant: T 4 (Bang Nieo Dam)

```
Item : Total System (for 2011) :
: Solid Amount :
: in Wastewater:
Q:Treated water amount(m3/d)
K:Coefficient converting turbi
                                                                                                       to SS (0.8-1.5 \rightarrow 1.2)
                                                        : T1 :Turbidity before filter(ave
                                                                                              T2: Turbidity after filter( ave
                                                                                 So = 0.18 ton-DS/day
 : SS Contents : s = 315 \text{ mg/l}
 : (7)
:Clear Water Reservoir
                       No. : N = 1 units
                                                     · Programme Control of the Control o
        Criteria
                                                       : Retention Time
                        T = 8 \text{ hours}
 : Required Volume : V = 7,000 cu m
                  Dimension : L m x W m x D m x N units : 35 20 5 2
                                                                                                                      5 2
                                             : Total Volume
                                                      v = 7,000 \text{ cu m}
         Retention Time : t = 8.0 hours
                             .
```

Capacity Calculation for Treatment Plant
Treatment Plant: T 4 (Bang Nieo Dam)

Item	: Total System (for 2011) :
:(8) :Chlorination Equi	
: Injection Point	: at the Inlet of Clear Water Reservoir
Dosage Rate	2.0 ppm
Type	Liquid Chlorine (50 kg cylinder)
: Amount	42 kg- Cl gas/day
: Injector	Vacuum Type Injector
:	: No. of unit 2 units : (excl. 1 units stand-by) :
: :	: Rate 0.88 kg/h/unit :
:	Capacity 10 kg/h/unit
: Storage	1 month
: Storage Amount	42 kg /day x 30 day = 1,260 kg
:	= 26 cylinders (50 kg):
:(9) Clear Water Pu	imp :
: No.	N = 3 units + 1 stand-by
: Flow per unit	q = 6.8 cu m/min/unit
: Diameter	D = 200 mm
: Head	H = 40 m
: Motor output	P = 80 KW
Total Capacity:	Q = 29,400 cu m/day :

-	1 0 (Aone 1)
Item	: Total System (for 2011) :
Planned Flow	: Q= 17,800 cu m/d :
	= 742 cu m/hr
	: = 12.4 cu m/min
	: = 0.206 cu m/sec :
No. of Treatment I	
	: 2 Lines :
jantaria. 1911 - Paris III. da iran da i	8,900 cu m/d x 2 lines :
(1)	
Receiving Well	, m
Criteria	· · · · · · · · · · · · · · · · · · ·
	d= 3.0 m
No.	1 unit
Dimension :	Circular
	Dia 3.0 m
	Dia 3.0 m : $v = 21 \text{ cu m}$
	t= 1.7 min :
(2) Mixing Tank	
Criteria :	T= 1.0 min
Dimension	Square x 2 units : L m x W m x D m x units : 1.5 2.0 2.0 2 :
en e	v = 12 cu m
	t = 1.0 min
Mixer :	Mechanical Flush Mixer

ر المراقع ا : Item : Total System (for 2011) :(3) Coagulant Mixing Type: Hydraulic Mixing Coagulant: Solid Aluminum Sulphate (Al2(SO4)3) containing 15 % Al2-03 : Dosage Rate : 5-10 mg-solid alum/l Average 5 mg/l : Coagulant Solution : 5 % solution : Dosage Amount : 89 kg-Alum/day : Coagulant Solution (5 % solution) 2 cu m/day No. of Mixer : 2 units Type : Batch Type Mixing 0.9 cu m/unit Capacity : Square x 2 units (1 stand by): : L m x W m x D m x units : : 1.0 1.5 2.0 2 : Dimension 3.0 cu m/unit 3.0 cu m : Total V =

: Item	Total System (for 2011) :	
: (4) :Flocculator		_
: Type	: Hydraulic Flocculation :	
No.	$N = 2 \text{ lines } x \qquad 2 \text{ units} \qquad \vdots$	
: :	: = 4 units :	
: : Unit Flow	q = 3.09 cu m/min/unit	
: Criteria	T = 30 min	
: Dimension :	: W m x L m x D m x n lines : 2.0 20.0 2.5 4 :	
: :	: v = 100 cu m/unit :	
	t = 32.4 min	

Capacity Calculation for Treatment Plant Treatment Plant: T 5 (Zone 7)

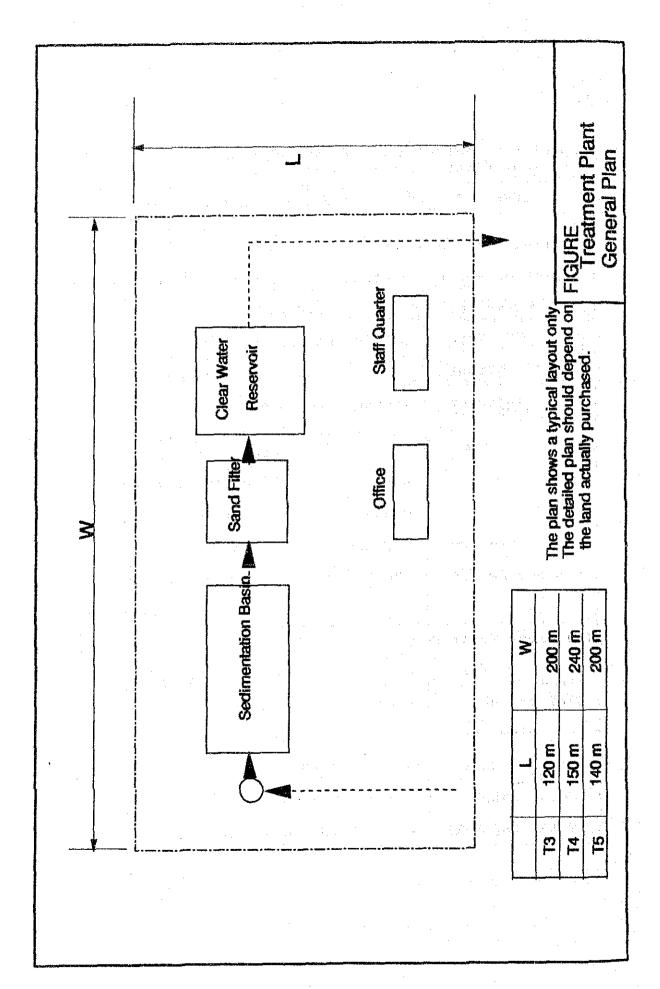
```
: Item : Total System (for 2011) :
:Sedimentation Basin
               : Rectanglar, Horizontal Flow
         No. : N = 2 line x 2 basins
                 = 4 basins
    Unit Flow : q = 185.4 \text{ cu m/hr/basin}
               : Retention Time
    Criteria
               : T = \frac{4 \text{ hours}}{4}
               : W m x L m x D m x N
    Dimension
               : 6 32 4.0 4
                v = 768 \text{ cu m/basin}
                        4.1 hours
                : t =
                v = 12.9 \text{ cm/min}
:Flow velocity
: Surface Load : a = 23.2 m3/m2/day
:Sludge Removal : Hydraulic Removal
   Sludge Amount:
   Solid Amount
                 So = Q(K(T1-T2)+0.16xB)x10^-6
       (ton-DS):
                   where So:Sludge dry weight(ton)
                           Q: Treated water amount(m3/d)
                           K : Coefficient converting turbi
                             to SS (0.8-1.5 \rightarrow >1.2)
                          .T1 :Turbidity in raw water (ave
                           T2 : Turbidity after Sedimentati
                           B :Alum dosage rate (ave. = 5 mg
                        So = 0.16 \text{ ton-DS/day}
                : Water Contents of Drained Sludge
                       w = 99.5 \%
                : Sludge Volume
                        v = 33 \text{ cu m/d}
```

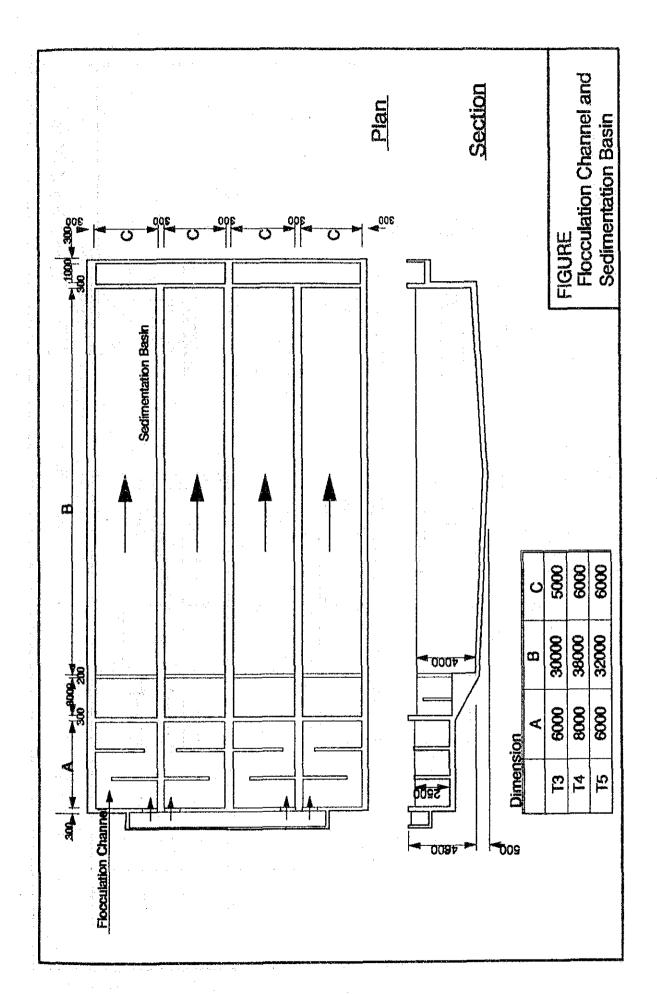
Item	: Total System (for 2011) :
THE REAL PROPERTY COME AND THE THE THE THE PART AND THE PART AND THE	. Total System (Tot 2011) .
(6) Rapid Sand Filter	
Туре	: Down Flow, Single Media :
No.	$: N = 2 \text{ lines } x \qquad 4 \text{ units} \qquad :$
	: : 8 units :
Unit Flow	: q = 2,225 cu m/day/unit :
Criteria	Surface Load : 120 - 150 m3/m2/day :
Dimension	: W m x L m x N units : 3.5 5.0 8 :
	: a = 17.5 sq m/unit :
Surface Load	: La = 127.1 m3/m2/day ::
Filter Washing Frequency	: Once every other day for each filter :
Rate	: Surface Washing :
`	: 0.2 m3/m2/min x 5 min :
	: Backwashing :
stantista. Paragraphysia	: 0.6 m3/m2/min x 10 min :
Water Amount	: Surface Washing :
required	v = 18 sq m/unit x 8 units
	: $x = 0.2 \text{ m} 3/\text{m} 2/\text{min } x = 5 \text{ min } x = (1/2)$:
	: = 70 cu m/day :
	: Backwashing*
	: $v = 18 \text{ sq m/unit x } 8 \text{ units}$:
	: $x = 0.6 \text{ m} 3/\text{m} 2/\text{min } x = 10 \text{ min } x = (1/2)$:
	: : 420 cu m/day :
.	•
! • • • • • • • • • • • • • • • • • • •	: Total q= 490 cu m/day :

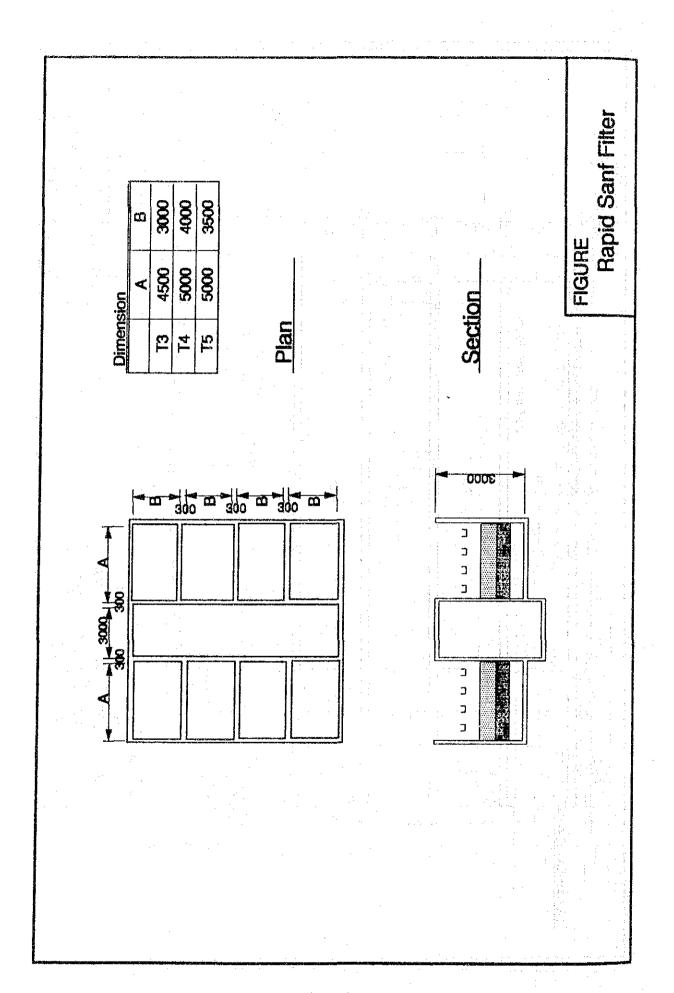
Capacity Calculation for Treatment Plant

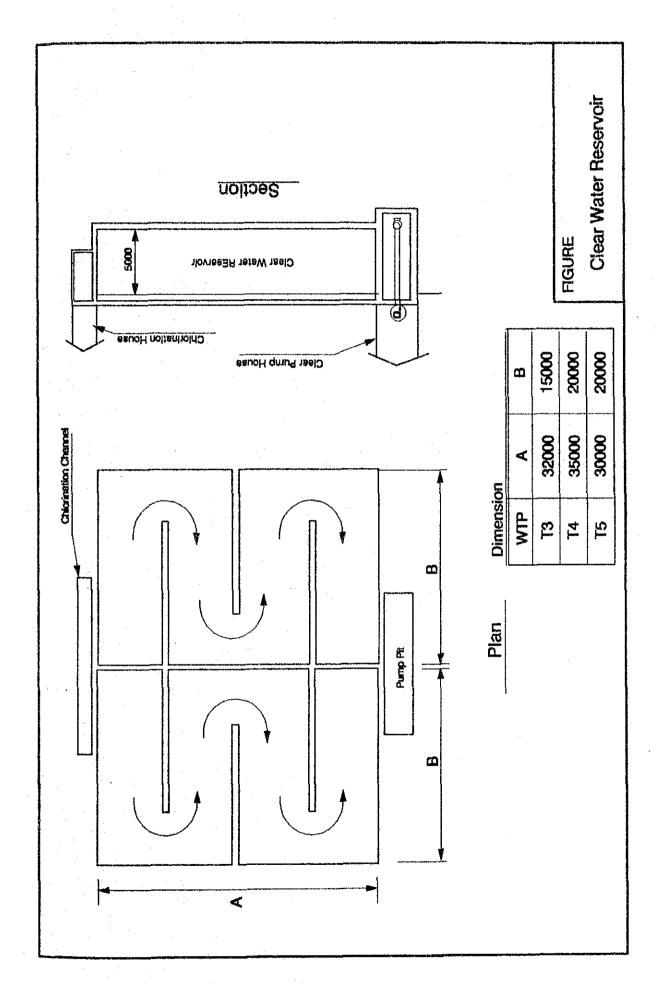
```
Treatment Plant: T 5 (Zone 7)
     Item : Total System ( for 2011 ) ;
   Solid Amount :
   in Wastewater:
   Solid Amount : (ton-DS) : So = Q*K*(T1-T2)*10^-6
                 where So:Sludge dry weight(ton)
                      Q: Treated water amount (m3/d)
                     K : Coefficient converting turbi
                         to SS (0.8-1.5 ->>1.2)
                     T1 :Turbidity before filter(ave T2 :Turbidity after filter( ave
                  So = 0.15 \text{ ton-DS/day}
    SS Contents: s = 305 \text{ mg/l}:
: Retention Time
             : T = 8 hours
: Required Volume : V = 5,933 cu m
    Dimension: L m x W m x D m x N units: 30 20 5 2
             : Total Volume
             : v = 6,000 cu m
  Retention Time : t = 8.1 hours
```

	: Total System (for 2011) :
و عدد الله الله الله الله الله الله الله ال	. IOCAL DYSCEM (IOL ZOIL)
(8) Chlorination Equi	pment :
Injection Point	: at the Inlet of Clear Water Reservoir :
Dosage Rate	: 2.0 ppm :
Туре	: : Liquid Chlorine (50 kg cylinder) :
Amount	: : 36 kg- Cl gas/day :
Injector	: Vacuum Type Injector :
	: No. of unit 2 units : (excl. 1 units stand-by) :
	: Rate 0.74 kg/h/unit :
	: Capacity 10 kg/h/unit :
Storage	1 month
Storage Amount	: 36 kg /day x 30 day = 1,068 kg :
	: : = 22 cylinders (50 kg) :
(9) Clear Water P	ump :
No.	: N = 3 units + 1 stand-by :
Flow per unit	: $q = 5.8 \text{ cu m/min/unit}$
Diameter	: D = 200 mm :
Head	: : H = 40 m
Motor output	: P = 70 KW :
Total Capacity	: Q = 24,920 cu m/day :









APPENDIX A-8-6

Distribution Network Analysis

TITLE: Phuket Zone 6 (WTP Bangwat)
NO. OF PIPES: 23
NO. OF NODES: 23
PEAK FACTOR: 1.755
MAX HEADLOSS/Km: 10
MAX UNBAL(LPS): 0

PIPE	FROM	ТО	LENGTH	DIA	HWC	FLOW	VELOCITY	HEAD	LOSS
NO.	Node	Node	(M)	(MM)	***	(LPS)	(MPS)	(M/KM)	(M)
1	100	33	1000.00	400	110	18.14	0.14LO	0.09	0.09
2	33	34	1000.00	300	110	4.88	0.07LO		0.03
3	34	35	720.00	300	110	4.06	0.06LO		
4	35	36	280.00	150	100	3.23	0.18LO		0.15
5	36	37	600.00	150	100	2.41	0.14LO		0.19
6	37	38	360.00	150	100	1.58	0.09LO		0.05
7	38	39	370.00	150	100	0.76	0.04LO	0.04	0.01
8	40	39	260.00	150	100	0.06	0.00LO		0.00
9	41	40	165.00	150	100	0.89	0.05LO	0.05	0.01
10	42	41	280.00	300	110	5.01	0.07LO	0.03	0.01
11	43	42	240.00	300	110	5.84	0.08LO	0.05	0.01
12	44	43	150.00	300	110	6.66	0,09LO	0.06	0.01
1.3	45	44	920.00	300	110	7.48			0.07
14	46	45	460.00	300	110	8.31	0.12LO	· ·	0.04
15	47	46	760.00	300	110	9.96	0.14LO	0.12	0.09
16	48	47	680.00	300	110	11.61	0.16LO	0.16	
17	33	48	550.00	300	110	12.43	0.18LO	0.19	0.10
18	41	49	600.00	150	100	3.30	0.19LO		0.34
19	49	50	930.00	150	100	2.47	0.14LO	0.33	0.31
20	50	51	450.00	150	100	1.65	0.09LO	0.16	0.07
21	51	52	730.00	150	100	0.82	0.05LO	0.04	0.03
22	46	53	1200.00	150	110	0.82	0.05LO	0.04	0.04
23	47	54	1200.00	150	110	0.82	0.05LO	0.04	0.04

		•	•		
	NODE	FLOW	ELEVATION	H G L	PRESSURE
	NO.	(LPS)	(M)	(M)	(M)
	100 R	18.139	43.00	43.00	0.00
	33	-0.824	20.10	42.91	22.81
	34	-0.824	23.00	42.87	19.87
:	35	-0.824	29.20	42.86	13.66
	36	-0.824	25.30	42.71	17.41
	37	-0.824	29.80	42.52	12.72
	38	-0.824	30.20	42.47	12.27
	39	-0.824	29.30	42.45	13.15
	40	-0.824	28.60	42.45	13.85
	41	-0.824	28.30	42.46	14.16
	42	-0.824	27.70	42.47	14.77
	43	-0.824	27.30	42.48	15.18
	44	-0.824	26.50	42.49	15.99

Page 1 of PK-6

	A Company		· "我们是我们的	
NODE	FLOW	ELEVATION	H G L PR	ESSURE
NO.	(LPS)	(M)	(M)	(M)
45	-0.824	21.70	42.56	20.86
46	-0.824	15.50	42.60	27.10
47	-0.824	18.40	42.69	24.29
48	-0.824	20.50	42.80	22.30
49	-0.824	27.10	42.12	15.02
50	-0.824	21.70	41.82	20.12
51	-0.824	17.50	41.75	24.25
52	-0.824	18.40	41.72	23.32
53	-0.824	10.00	42.55	32.55
54	-0.824	17.00	42.65	25.65

Page 2 of PK-6

Phuket Zone 10 (WTP Bangwat)

T I T L E : NO. OF PIPES : NO. OF NODES : 28 1.755 10 .006 PEAK FACTOR .
MAX HEADLOSS/Km :
MAX UNBAL(LPS) :

PIPE NO.	FROM Node	TO Node	LENGTH (M)	DIA (MM)	HWC	FLOW (LPS)	VELOCITY (MPS)	HEADLO	oss (M)
1	200	35	50.00	400	110	191.91	1.53	7.28	0.36
2	35	9	100.00	400	110	184.80	1.47	6.79	0.68
3	9	10	1090.00		100	50.50	0.71	2.98	3.25
4	10	11	360.00	250	100	43.39		5.47	1.97
5	11	12	680.00	200	100	28.43		7.42	5.05
6	12	13	210.00	200	100	21.32		4.36	0.92
7	13	14	270.00	150	100	7.11		2.32	0.63
8	13	36	400.00	150	100	$7.\overline{11}$	0.40	2.32	0.93
9	9	15	20.00	300	100	127.20	1.80	16.47HI	0.33
10	15	16	1075.00	300	100	65.32	0.92	4.80	5.16
11	16	17	370.00	300	100	25.67		0.85	0.32
12	11	17	210.00	150	100	7.85		2.79	0.59
13	17		650.00	300	100		0.37	0.90	0.58
14	18	19	290.00	200	100	19.31	0.61	3.63	1.05
15	19	20	295.00	150	100	12.20		6.30	1.86
16	20	21	10.00	150	100	12.70	0.72	6.79	0.07
17	26	20	300.00	150	110	7.61	0.43	2.20	0.66
18	27	21	300.00	150	110	6.45		1.62	0.49
19	21	22	700.00	150	100	12.04	0.68	6.15	4.30
20	22	23	335.00	150	100	4.93	0.28LO	1.18	0.40
21	23	24	400.00	150	100	7.11	0.40	2.32	0.93
22	15	28	780.00	300	100	54.77	0.77	3.47	2.70
23	28	29	240.00	300	100	47.66		2.68	0.64
24	29	30	150.00	300	100			1.39	0.21
25	29	31	640.00	150	100	7.11	0.40	2.32	1.48
26	30	26	880.00	200	110	26.34	0.84	5.40	4.75
27	16	25	850.00	300	100	32.54		1.32	1.12
28	25	26	400.00		110	25.43		5.06	2.03
29	26	27	20.00	200	100	37.05			0.24
30	27	33	720.00	200	110	23.50		4.37	3.15
31	33	34	340.00	200	110	16.39		2.25	0.76
32	34	23	400.00	150	110	9.28	0.53	3.18	1.27

NODE NO.	FLOW (LPS)	ELEVATION (M)	H G L (M)	PRESSURE (M)
200 R	191.909	30.00	30.00	0.00
35	-7.108	28.00	29.64	1.64
9	-7.108	15.18	28.96	13.78
10	-7.108	6.50	25.71	19.21

Page 1 of PK-10

NODE NO.	FLOW (LPS)	ELEVATION (M)	HGL PH	RESSURE (M)	
11	-7.108	2.90	23.73	20.83	
12	-7.108	3.80	18.69	14.89	
13	-7.108	2.80	17.77	14.97	
14	-7.108	4.00	17.15	13.15	
15	-7.108	15.20	28.63	13.43	. *
16	-7.108	6.50	23.47	16.97	
17	-7.108	2.90	23.15	20.25	
18	-7.108	3.20	22.56	19.36	
19	-7.108	2.70	21.51	18.81	
20	-7.108	2.50	19.66	17.16	2 2
21	-7.108	2.50	19.59	17.09	-
22	-7.108	3.90	15.28	11.38	
23	-7.108	2.50	14.89	12.39	
24	-7.108	2.30	13.96	11.66	
25	-7.108	5.50	22.34	16.84	٠.
26	-7.108	4.50	20.32	15.82	
27	-7.108	4.50	20.07	15.57	
28	-7.108	12.00	25.92	13.92	z=
29	-7.108	11.00	25.28	14.28	
30	-7.108	10.50	25.07	14.57	
31	-7.108	10.00	23.80	13.80	NAME OF THE STREET
33	-7.108	4.50	16.92	12.42	
34	-7.108	4.50	16.16	11.66	+1
36	-7.108	4.00	16.84	12.84	No. of
	,		10,00		
4					
					.*
					1.
	* 4	e de la companya de			4 - De
· ·		6.0		*;	1 N

Page 2 of PK-10

Phuket Zone 11 (WTP Bangwat)

T I T L E : Pho NO. OF PIPES : 12 NO. OF NODES : 12 PEAK FACTOR : 1. 1.755 MAX HEADLOSS/Km : 10 MAX UNBAL(LPS) : 0

PIPE NO.	FROM Node	TO Node	LENGTH (M)	DIA (MM)	HWC	FLOW (LPS)	VELOCITY (MPS)	HEADI (M/KM)	LOSS
1 2 3 4 5 6 7 8 9 10 11 12	200 1 2 3 4 1 6 7 8 9 5	1 2 3 4 5 6 7 8 9 5	1200.00 400.00 700.00 1300.00 1500.00 500.00 1000.00 1400.00 1500.00 650.00 800.00	300 300 200 200 200 200 200 200 200 200	110 110 110 110 110 110 110 110 110 110	64.17 30.97 25.14 19.31 13.47 27.36 21.53 15.70 9.86 4.03 11.67 5.83	0.91 0.44 0.80 0.61 0.43 0.87 0.69 0.50 0.31 0.13L0 0.37 0.33	3.90 1.01 4.96 3.04 1.56 5.80 3.72 2.07 0.88 0.17 1.20 1.35	4.67 0.40 3.47 3.95 2.34 2.90 3.72 2.07 1.23 0.25 0.78 1.08

				· ·
NODE NO.	FLOW (LPS)	ELEVATION (M)	H G L (M)	PRESSURE (M)
200 R	64.170	45.00	45.00	0.00
1	-5.834	4.00	40.33	36.33
2	-5.834	3.00	39.92	36.92
3	-5.834	3.00	36.45	33.45
4	-5.834	22.00	32.50	10.50
5	-5.834	10.00	30.15	20.15
6	-5.834	5.00	37.43	32.43
7	-5.834	5.00	33.71	28.71
8	-5.834	20.00	31.63	11.63
9	-5.834	10.00	30.40	20.40
10	-5.834	22.00	29.37	7.37
11	-5.834	3.00	28.29	25.29

Page 1 of pk-11

			m)) (7 0		10075 121 1	li vai liigi lii		
TIT				Zone 3	& 4 (1	WTP Khlon	g Katha,		Programme Commencer
	F PIPE		38						11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	F NODE		38				•		specification of
PEAK	FACTOR		1.755						Part of Species
	EADLOS		10				100	Military and	The Market
MAX U	NBAL (L	PS) :	. 0						
PIPE	FROM	TO	LENGTH	DIA	HWC	FLOW	VELOCITY	HEAD	LOSS
NO.	Node	Node	(M)	(MM)		(LPS)	(MPS)	(M/KM)	(M)
3	103	102	960.00	500	110	0.84	0.00LO	0.00	0.00
4	104	103	1170.00	500	110	1.67	0.01LO	0.00	0.00
5	104	105	1520.00	400		154.10	1,23	4.85	7.38
6	105	106	270.00		110	153.26	1.22	4.80	1.30
7	106	107	280.00	400	110	152.43	1.21	4.76	1.33
8	107	108	160.00	400	110	90.55	0.72	1.81	0.29
9	108	109	800.00	400	110	89.72	0.71	1.78	1.43
10	109	110	320.00	400	110	88.88	0.71	1.75	0.56
11	110	111	770.00	400	110	27.00	0.21LO	0.19	0.15
12	111	112	770.00	400	110	26.17	0.21LO		0.14
13	112	113	960.00	400	110	25.33	0.20LO		0.17
14	113	114	1600.00	400	110	24.49	0.19LO	0.16	0.26
15	114	115	600.00	400	110	23.66	0.19LO	0.15	0.09
16	115	116	1250.00	400	110	22.82	0.18LO	0.14	0.18
17	116	117	480.00	200	110	21.99	0.70	3.87	1.86
18	117	118	1200.00	200	110	21.15	0.67	3.60	4.32
19	118	119	330.00	200	110	20.31	0.65	3.34	1.10
21	107	121	1000.00	250	110	61.04	1.24	8.63	8.63
22	110	122	1000.00	250	110	61.04	1.24	8.63	8.63
23	1	104	1000.00	500	110	156.61	0.80	1.69	1.69
24	100	9	1000.00	500	110	190.53	0.97	2.42	2.42
25	1	2	800.00	150	110	8.74	0.49	2.85	2.28
26	2	3	700.00	150	110	6.75	0.38	1.77	1.24
27	3	4	1000.00	150	110	4.75	0.27LO	0.92	0.92
28	4	5	1150.00	150	110	2.76	0.16LO	0.34	0.39
29	5	6	700.00	150	110	0.76		0.03	0.02
30	7	6	1500.00	150	110	1.23	0.07LO	0.08	0.11
31	8	1	1000.00	500	110		0.85	1.91	1.91
32	9		1000.00	500	110	169.34	0.86	1.95	1.95
33	9	10	1000.00	200	110	19.19	0.61	3.01	3.01
34	10	11	1000.00	200	110	17.20	0.55	2.46	2.46
35	11	7	1600.00	200	110	15.20	0.48	1.95	3.13
36	7	12	1000.00	150	110	11.97		5.10	5.10
37	12	13	1300.00	150	110	9.98	0.56	3.64	4.73
38	13	$\frac{13}{14}$	1000.00	150	110	7.98	0.45	2.41	2.41
39	14	15	1300.00	150	110	5.99	0.34	1.41	1.84
40	15	16	700.00	150	110	3.99	0.23LO	0.67	0.47
41	16	17	1250.00	150	110	$\frac{3.99}{2.00}$	0.11LO	0.19	0.23
41	10	3. f	1700.00	100	110	۵,00	0.1110		J, 20

Page 1 of pk-3&4

-							
•	· .	NODE	5 . 37	FLOW (LPS)	ELEVATION (M)	H G L (M)	PRESSURE (M)
		102		-0.836	14.60	42.03	27.43
		103		-0.836	16.00	42.03	26.03
		104		-0.836	21.90	42.03	20.13
		105		-0.836	11.20	34.66	23.46
13.5	44.	106		-0.836	10.40	33.36	22.96
		107		-0.836	9.00	32.03	23.03
		108		-0.836	14.69	31,74	17.05
	* \$	109		-0.836	11.06	30.31	19.25
• •		110		-0.836	4.64	29.75	25.11
		111		-0.836	5.50	29.60	24.10
		112		-0.836	5.44	29.46	24.02
	100	113		-0.836	14.90	29.30	14.40
		114		-0.836	7.60	29.04	21.44
		115		-0.836	6.30	28.95	22.65
		116		-0.836	20.70	28.77	8.07
	110	117		-0.836	8.10	26.91	18.81
	44.5	118		-0.836	2.50	22.59	20.09
		119	•	-20.312	2.70	21.49	18.79
	21	121		-61.039	10.00	23.40	13.40
	1.4	122		-61.039	5.00	21.12	16.12
	43.4	100	R	190.532	10.00	50.00	40.00
		1		-1.995	20.00	43.72	23.72
		2		-1.995	12.00	41.44	29.44
		3		-1.995	10.50	40.20	29.70
		4		-1.995	11.00	39.28	28.28
	5.6%	5		-1.995	9.00	38.89	29.89
		6		-1.995	10.00	38.87	28.87
		7		-1.995	7.00	38.99	31.99
		. 8	: .	-1.995	16.00	45.63	29.63
	45.0	9		-1.995	9.00	47.58	38.58
	1.	10		-1.995	14.50	44.57	30.07
		11		-1.995	12.00	42.11	30.11
	6.1	. 12	1.	-1.995	8.00	33.88	25.88
,		13		-1.995	8.00	29.15	21.15
		. 14	٠.	-1.995	22.00	26.74	4.74
		15		-1.995	10.00	24.90	14.90
		16		-1.995	3.00	24.44	21.44
		17	4.25	-1.995	6.00	24.20	18.20
				1 .			
*				150			

Page 2 of pk-3&4

Phuket Zone 1 & 2 (WTP Bang Neow Dam)
28
29
1.755
10

T I T L E : NO. OF PIPES : NO. OF NODES : PEAK FACTOR : MAX HEADLOSS/Km :

PIPE	FROM	OT	LENGTH	DIA	HWC	FLOW	VELOCITY	HEAD	LOSS
NO.	Node	Node	(M)	(MM)		(LPS)	(MPS)	(M/KM)	(M)
1	100	1	400.00	700	110	247.27	0.64	0.76	0.31
2	1	2	4280.00	700	110	245.67	0.64	0.75	3.22
3	3	2	1000.00	400	110	98.43	0.78	2.12	2.12
4	4	3	1200.00	400	110	100.03	0.80	2.18	2.62
5	5	4	1200.00	400	110	101.64	0.81	2.25	2.70
6	6	5	1250.00	400	110	103.24	0.82	2.31	2.89
7	7	6	1400.00	400	110	104.84	0.83	2.38	3.33
8	2	8	1300.00	600	110	342.50	1.21	2.95	3.84
9	8	9	1300.00	600	110	340.90	1.21	2.93	3.80
10	, 9	10	1300.00	600	110	339.30	1.20	2.90	3.77
11	10	30	1000.00	600	110	337.70	1.19	2.88	2.88
12	30	31	1000.00	600	110	336.10	1.19	2.85	2.85
13	31	32	1000.00	600	110	334.50	1.18	2.83	2.83
14	32	33	900.00	600	110	332.90	1.18	2.80	2.52
15	33	34	250.00	600	110	331.30	1.17	2.78	0.69
16	34	35	200.00	600	110	329.70	1.17	2.75	0.55
17	35	36	800.00	600	110	328.10	1.16	2.73	2.18
18	36	37	800.00	150	110	3.19	0.18L0	0.44	0.35
19	37	38	3800.00	100	110	1.60	0.20LO	0.88	3.36
20	36	39	900.00	600	110	313.74	1.11	2.51	2.26
21	36	40	2750.00	200	110	9.58	0.30	0.83	2.29
22	40	41	940.00	150	110	7.98	0.45	2.41	2.26
23	41	42	600.00	150	110	6.38	0.36	1.59	0.96
24	42	43	600.00	100	110	4.79	0.61	6.74	4.05
25	43	44	950.00	100	110	3.19	0.41	3.19	3.03
26	44	45	1600.00	100	110	1.60	0.20LO	0.88	1.41
27	200	7	11000.00	400	110	106.44	0.85	2.45	26.92
28	39	300	1000.00	600	110	312.14	1.10	2.49	2.49

NODE NO.	FLOW (LPS)	ELEVATION (M)	H G L (M)	PRESSURE (M)
100 R	247.267	50.00	70.00	20.00
1	-1.601	25.00	69.69	44.69
2	-1.601	7.00	66.47	59.47
3	-1.601	9.00	68.59	59.59
4	-1.601	10.00	71.21	61.21
5	-1.601	15.00	73.90	58.90
6	-1.601	17.00	76.79	59.79
7	-1.601	13.00	80.12	67.12

Page 1 of pk1&2

	NODE NO.	FLOW (LPS)	ELEVATION (M)	H G L	PRESSURE (M)
$(x,y) = \frac{1}{2} g(x)$	8	-1.601	5.50	62.63	57.13
	9	-1.601	5.00	58.83	53.83
	10	-1.601	4.90	55.06	50.16
	30	~1.601	4.90	52.18	47.28
	31	-1.601	5.00	49.33	44.33
	32	-1.601	15.00	46.51	31.51
	33	-1.601	5.00	43.99	38.99
	34	-1.596	6.00	43.29	37.29
	35	-1.596	7.00	42.74	35.74
	36	-1.596	9.00	40.56	31.56
a di Santa d	37	-1.596	14.50	40.21	25.71
•	38	-1.596	17.50	36.85	19.35
	39	-1.596	20.00	38.30	18.30
	40	-1.596	28.00	38.27	10.27
	41	-1,596	25.00	36.01	11.01
	42	-1.596	17.00	35.05	18.05
	43	-1.596	14.00	31.01	17.01
	44	-1.596	12.00	27.98	15.98
	45	-1.596	10.00	26.57	16.57
	200	106.437	60.00	107.04	47.04
	300	-312.143	10.00	35.82	25.82

Page 2 of pk1&2

TITLE: Phuket Zone 8 (WTP Bang Neow Dam)

NO. OF PIPES : 9
NO. OF NODES : 10
PEAK FACTOR : 1.755
MAX HEADLOSS/Km : 10

					The second secon			
PIPE NO.	FROM Node	TO Node	LENGTH DIA (MM)	HWC	FLOW (LPS)	VELOCITY (MPS)	HEADI (M/KM)	LOSS (M)
							F F O	
1	100	11	400.00 300	110	77.33	1.09	5.50	2.20
2	11	12	1950.00 300	110	71.05	1.01	4.70	9.17
		13	760.00 300	110	64.76	0.92	3.96	3.01
3	12			– – –		The state of the s		
4	13	14	400.00 150	110	12.57	0.71	5.58	2.23
15	14	15	1600.00 150	110	6.29	0.36	1.55	2.48
	1.3	16	1000.00 300	110	45.90	0.65	2.10	2.10
6								
7	16	17	1000.00 300	110	39.61	0.56	1.60	1.60
8	17	18	1000.00 200	110	33,33	1.06	8.35	8.35
_	. .			110	5.41	0.1710	0.29	0.40
Q	1.8	19	1400.00 200	110	Ω • 4 ∓	OFFITIO	0.20	0.40

NODE NO.	FLOW (LPS)	ELEVATION (M)	H G L (M)	PRESSURE (M)
100 R	77.332	50.00	50.00	0.00
11	-6.286	25.00	47.80	22.80
12	-6.286	9.00	38.63	29.63
13	-6.286	8.00	35.62	27.62
14	-6.286	6.00	33.39	27.39
15	-6.286	3.00	30.91	27.91
16	-6.286	8.00	33.52	25.52
17	-6.286	6.00	31.93	25.93
18	-27.919	5.00	23.58	18.58
19	-5.409	2.00	23.17	21.17

Page 1 of pk-8

T I T L E : Phuket Zone 9 (WTP Bang Neow Dam)
NO. OF PIPES : 4
NO. OF NODES : 5
PEAK FACTOR : 1.755

MAX HEADLOSS/Km : 10

PIPE NO.	FROM Node	TO Node	LENGTH (M)	DIA (MM)	HMC	FLOW (LPS)	VELOCITY (MPS)	HEAD	LOSS (M)
1 2	200 20	20 21	800.00 850.00	200 150	110 110	21.64 16.23	0.69 0.92	3.75 8.95	3.00 7.61
3 4	21 21	22 23	1000.00	$\begin{array}{c} 150 \\ 150 \end{array}$	$\begin{array}{c} 110 \\ 110 \end{array}$	5.41 5.41	0.31 0.31	$1.17 \\ 1.17$	$\frac{1.17}{1.17}$

NO. (LPS) (M) (M) (M 200 R 21.636 35.00 35.00 0. 20 -5.409 3.00 32.00 29. 21 -5.409 3.00 24.39 21. 22 -5.409 3.00 23.21 20.	_		1000		410	J + 4 L	0.21	-
NO. (LPS) (M) (M) (M) 200 R 21.636 35.00 35.00 0. 20 -5.409 3.00 32.00 29. 21 -5.409 3.00 24.39 21. 22 -5.409 3.00 23.21 20.	:	10.						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		5					PRESSURE (M)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.00 29.00	•
		21		-5.409	3.00	24.39	21.39	
						· ·	20.21	
		P		17.31				
						. *		
						e e		
	ž.		7			· *:		

Page 1 of pk-9

TITLE: Phuket Zone 7 (WTP Zone 7)

T I T L E : Phuke NO. OF PIPES : 19 NO. OF NODES : 20 PEAK FACTOR : 1.755 MAX HEADLOSS/Km : 10

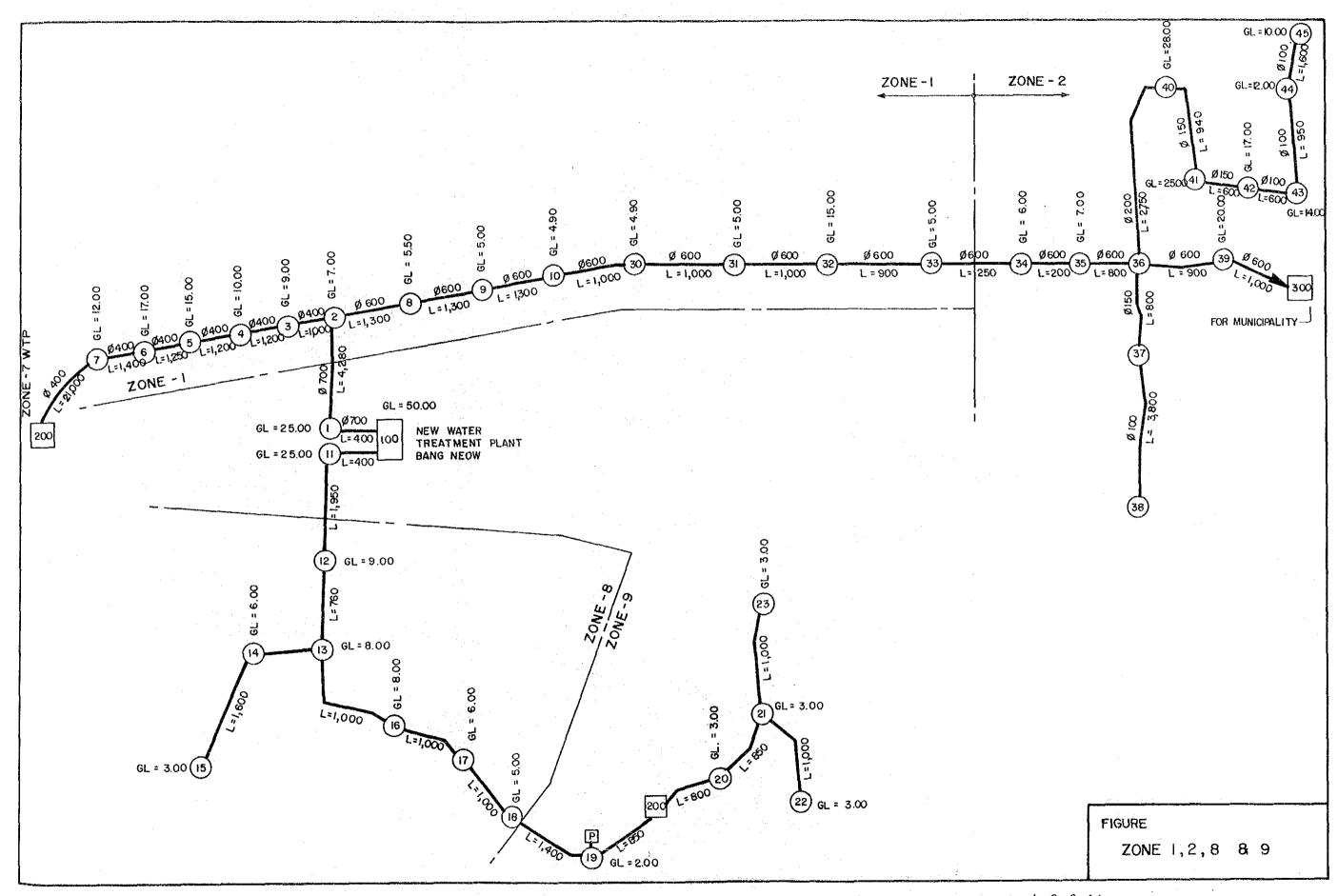
PIPE	FROM	TO	LENGTH	DIA	HWC	FLOW	VELOCITY	HEADI	LOSS
NO.	Node	Node	(M)	(MM)		(LPS)	(MPS)	(M/KM)	(M)
1	200	1	450.00	400	110	115.78	0.92	2.86	1.29
$\tilde{2}$	1	2	2000.00	400	110	85.31	0.68	1.63	3.25
3	2	3	1000.00	300	110	79.22	1.12	5.75	5.75
4	3	4	1000.00	300	110	73.12	1.03	4.96	4.96
5	4	5	1000.00	300	110	67.03	0.95	4.22	4.22
6	5	. 6	1000.00	300	110	60.94	0.86	3.54	3.54
7	6	7	1000.00	200	110	18.28	0.58	2.75	2.75
8	7	8	1200.00	150	110	12.19		5.27	6.33
9	8	9	1400.00	150	110	6.09	0.34	1.46	2.05
10	6	10	1000.00	200	110	36.56	1.16	9.91	9.91
$\overline{11}$	10	11	1000.00	200	110	30.47	0.97	7.07	7.07
12	11	12	1000.00	200	110	24.37	0.78	4.68	4.68
13	12	13	1000.00	200	110	18.28	0.58	2.75	2.75
14	13	14	1000.00	150	110	12.19	0.69	5.27	5.27
15	14	15	1000.00	150	110	6.09	0.34	1.46	1.46
16	1	16	1650.00	200	110	24.37		4.68	7.72
17	16	17	1000.00	200	110	18.28	0.58	2.75	2.75
18	17	18	1000.00	150	110	12.19	0.69	5.27	5.27
19	18	19	1000.00	150	110	6.09	0.34	1.46	1.46

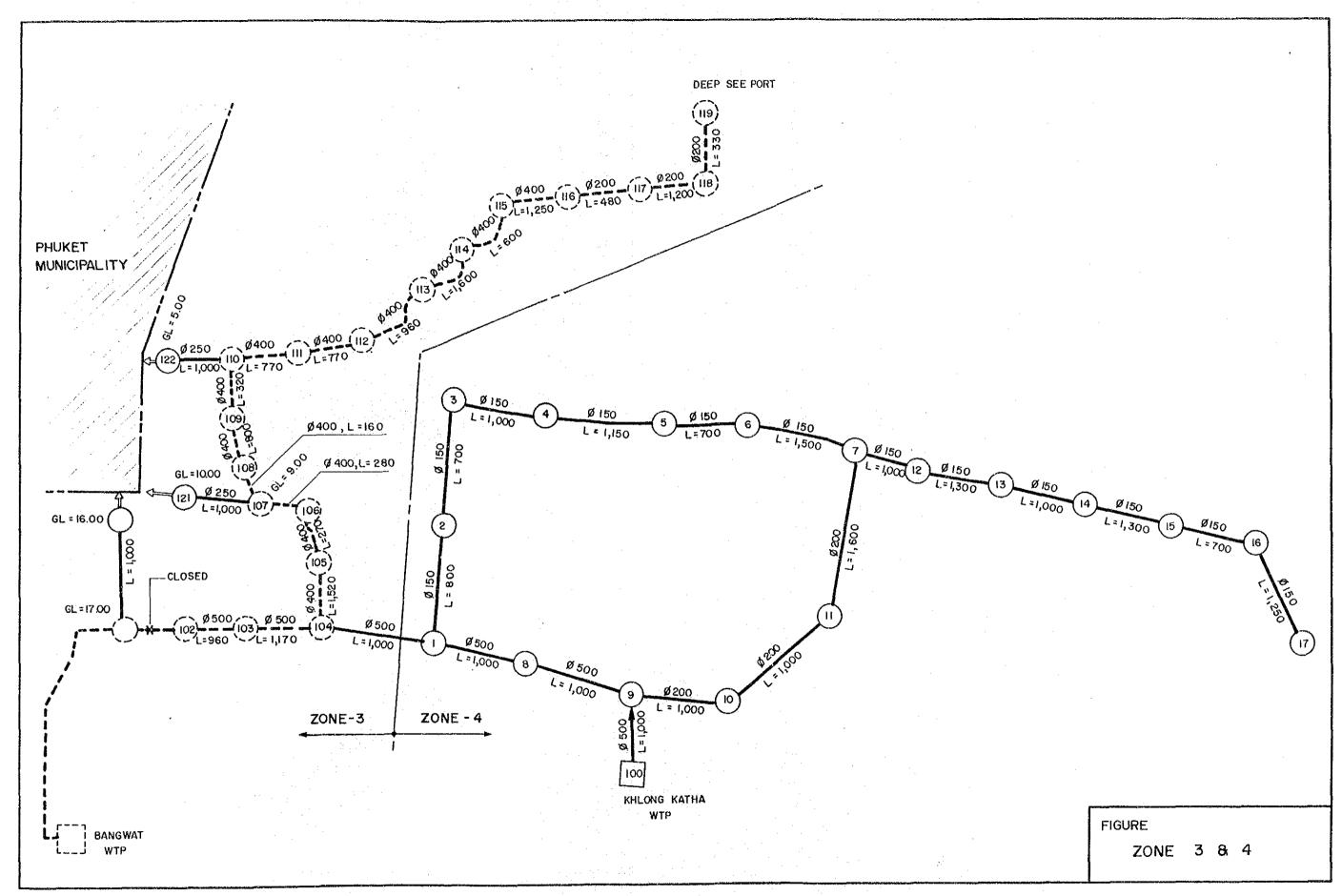
		1 10 1	and the second second	
NODE	FLOW	ELEVATION		
NO.	(LPS)	(M)	(M)	(M)
200	R 115.781	70.00	70.00	0.00
1	-6.094	40.00	68.71	28.71
2	-6.094	17.00	65.46	48.46
3	-6.094	15.00	59.71	44.71
4	-6.094	10.00	54.75	44.75
5	-6.094	10.00	50.53	40.53
6	-6.094	10.00	46.99	36.99
7	-6.094	15.00	44.24	29.24
8	-6.094	25.00	37.91	12.91
9	-6.094	15.00	35.87	20.87
10	-6.094	7.00	37.08	30.08
11	-6.094	5.00	30.00	25.00
12	-6.094	5.00	25.32	20.32
13	-6.094	3.00	22.57	19.57
14	-6.094	3.00	17.30	14.30
15	-6.094	3.00	15.84	12.84
16	-6.094	17.00	60.99	43.99

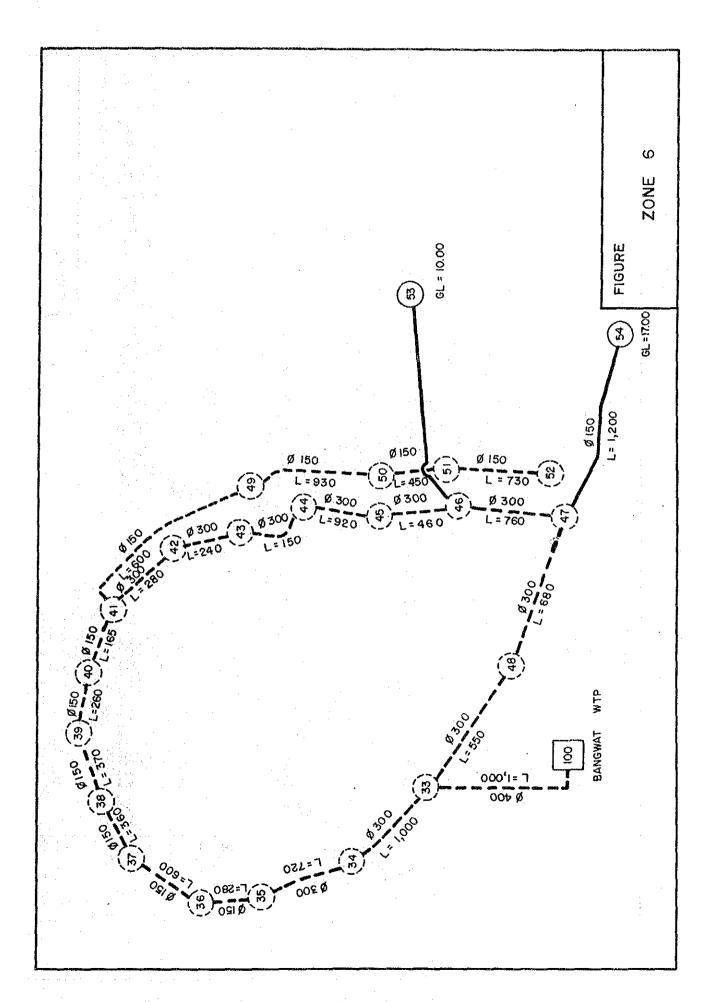
Page 1 of pk-7

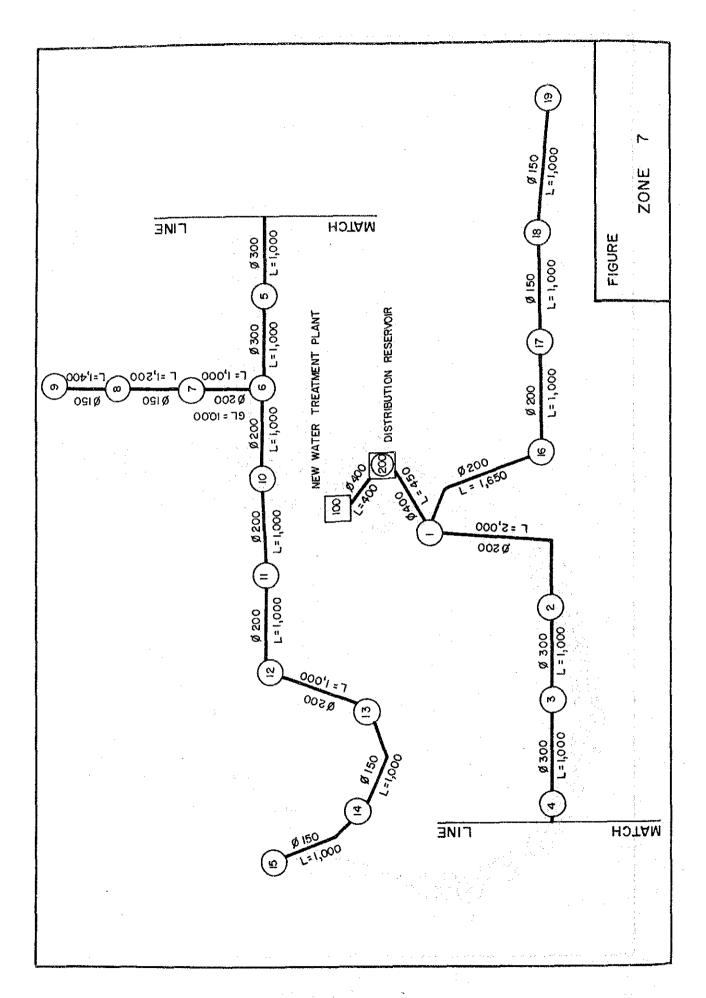
NODE	FLOW	ELEVATION (M)	H G L	PRESSURE
NO.	(LPS)		(M)	(M)
17	-6.094	16.00	58.24	42.24
18	-6.094	15.00	52.97	37.97
19	-6.094	15.00	51.51	36.51

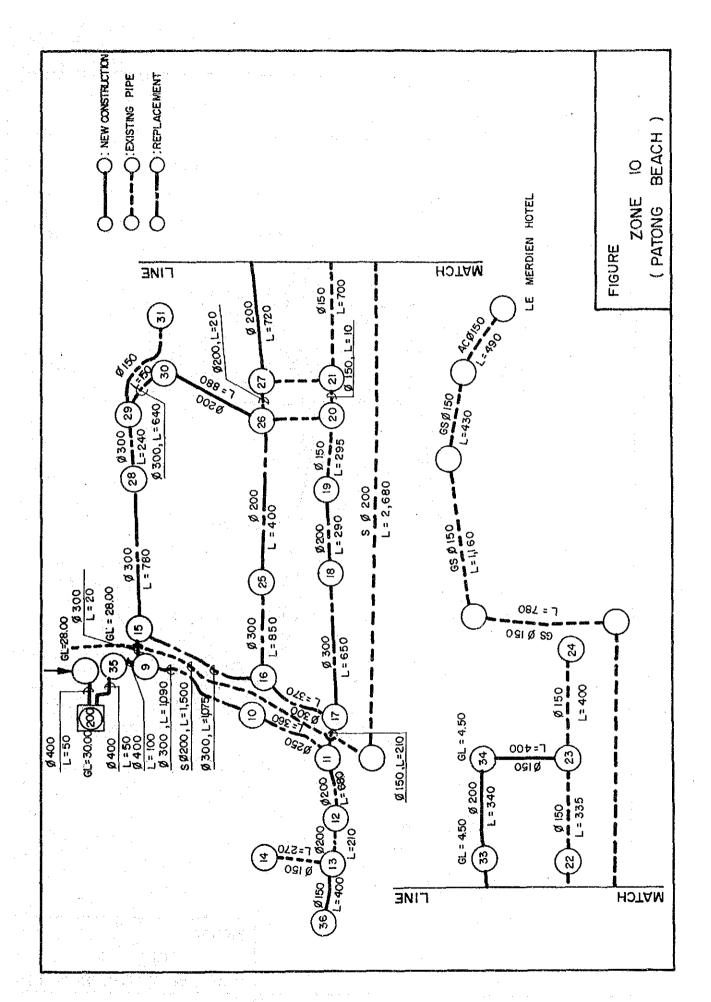
Page 2 of pk-7

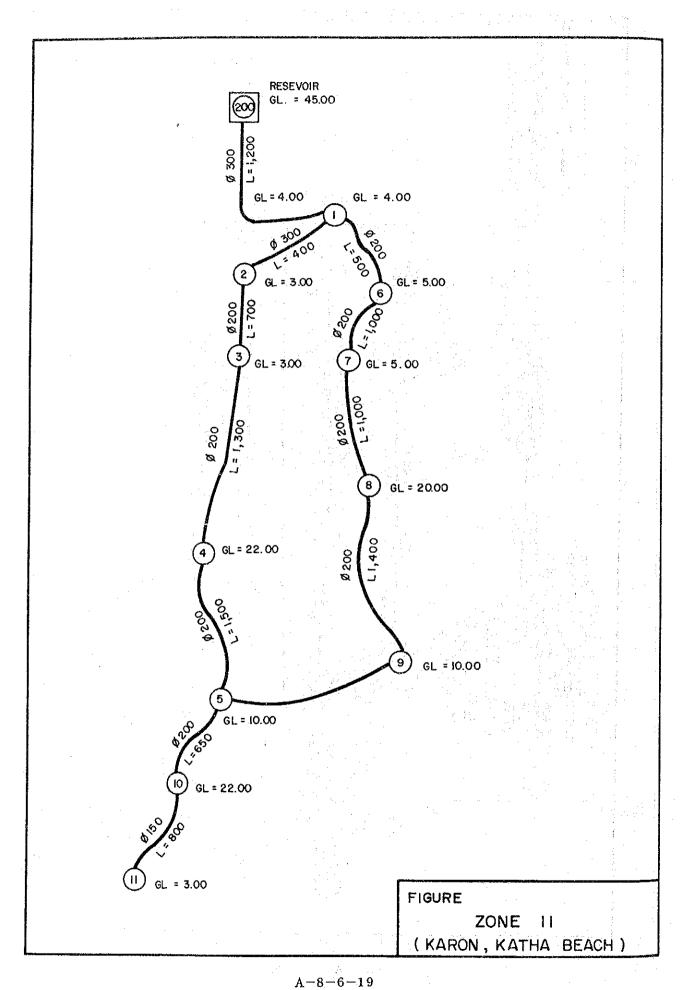












APPENDIX A-9-1

Estimation on the Possible Water Supply Amount and Operation Cost for Alternatives

Itea	1390	1991	1992	.66[. 7	1 1994	1995	1996	1997	8661	1399	2000	2003	2002	2003	1002	2005	2006	2007	2008	2003	2010	2011
A. Potencial Ester Densad	72														·							
A-1. Daily Average Down										: -	:											
Lose 1	-	-	308	33			£37	465	195	527	995	585	643	693	745	800	353	306	150	333	1,956	٠.
Zone 2	3	202	236	25	:		318	378	396	423	{\$}	28	516	350	203	248	695	3	789	338	880	
Lone 3	1,503	1, 557	1,595	1,63			111	1,812	1,851	1,892	1,935	1,979	2,039	2,102	2, 168	2,236	2,307	1,380	2,456	7,534	3,616	~
- 9864	e >	0	989		s .		1,057	1.09	1,133	1,171	1,211	1,253	1,292	1,332	1,375	1,420	1,467	1,504	1,543	1,584	3,626	
Zone 5	24,855	25, 448	25,054	_		:	28,60	23, 290	29,990	30,703	31,430	32,170	33,005	33,856	34,724	35,603	36,511	37,384	12, 85	39,179	(0,100	=
9 9007	235	210	266				386	183	430	-63	111	28	537	574	112	63	189	730	169	828	851	
Lone 7	0	0	2,411	_			4,290	4,512	4,735	4,959	5,18	5,410	3,436	5, 464	5,494	5,525	5,557	5,584	2.61	5,640	5,669	v.
Jone 8	-	0	986	_	_		1,694	1, 785	1,817	1,970	2,065	2,160	2, 190	2, 221	2,254	2,283	2,335	2,353	1,382	2,412	2,43	
20se 9	0	_	2		_		330	851	872	893	315	337	369	235	375	993	1,004	.015	1.927	1,33	1,052	∴
fore 10	9,983	10,022	10,01				10,294	10,343	10,391	10,439	10,486	10,533	10,447	10, 363	10,283	10,206	10,132	10,058.	5,987	9,918	3,852	9,738
Tone 11		2,430	2,12	7 2,578	29 2 9	1 2,674	2,723	2,779	2,836	2,832	2,949	3,007	3,020	3,034	3,848	3,063	3,073	3,034	3,109	3,125	3,142	.~.
fotai	36,517	39,952	16,105	85,11,688	6 49,228	8 50,821	52,437	53, 710	55,004	55,322	57,562	59,026	60,076	61,161	52,281	63,436	64,626	65,747	159,69	68,013	69,291	30,53
A-2. Daily Marings Desage	rad))))																	
Tone I	~	-	ē	1	_		568	503	149	685	728	114	835	300	696	1,041	911'1	1,175	1,236	1,293	1,365	- 13
20ne 2	•	267	367			60) (0	450	182	515	550	286	\$29	575	123	184	843	303	963	1,025	1,630	1,156	
lone 3	1,954	2,024	2,07	_		_	2,307	2,355	2,406	2,450	2,515	2,573	7,651	2,733	2,818	196'2	3,000	3,094	3,153	3, 295	3,401	rs .
Sone 4	•	-	1,18				1,374	1,422	1,431	1,522	1,574	1,629	1,679	1,732	1,787	1,845	1,907	1,356	3,000	5,059	7,114	~
Lone 5	32,311	11,081	13,81	~			37,185	38,93	38,386	39,91	10,859	11,821	12,306	H, 013	17,11	16,232	11,404	48,500	62.53	50,333	32,130	3
Zone 6	307	312	÷			_	200	530	559	£8.	620	651	826	146	795	918	838	96	000	1,053	1,106	~ * 1
Lone 1		0	3,142		_	_	5,578	5,855	6,156	6,43	8,73	1,633	130'	1,105	1,10	151	1.225		ĸ,	E !	2	<u>-</u> آ
Lone 8	-		1,26	_			2,203	2,32]	2,441	2,562	2,584	2,808	2,846	2,887	2,930	2,975	3,023	1,059	3,097	3,136	3,175	~*
g and		•	80				1,079	1,138	1,133	1,161	1,189	1,219	1,33	1,250	1,267	1,286	1,305	1,320	123	132	1,36	<u>.</u>
10ae 10	12,977	13,029	13,095	_	_	_	13,383	13,446	13,509	13,371	13,632	13,693	13,58	13,472	13,368	13,268	13, 13	13,075	12,983	12,894	12,897	:
fone il		3,224	3,28	3,346	1,41	~~	3,541	3,813	3,686	3,760	3,834	3,309	3,326	3,944	3,962	3,982	1,002	1,022	£,042	4,063	\$20°5	-+
	***																					,,,

Phuket Possible Water Supply Capacity (Afternative !)

1000 1000	1939	1881	2351	1933	1881	1985	1996	1981	1338	1999	2000	1902	2002	2063	3004	5002	2006	2007	8002	300	2010	2011
 Mater Sources Arallable (Daily average supply capacity = 105 I of daily average desand) 	Daily ave.	rage bupp	ily capacit	'y = 105 1	f of daily	ayerage 1	deaned!															i
B.1. Bangwat Speter Bangwat FTP: Maximum Copecity = {Bais.} Maximum effective capacity (Quan) = {Bais.} Equivalent Daily average deasad(Qda)	apacity = fective or Daily av	apacity (erage des	es Azimum Capacity = Azimum effective capacity (Quar) = Equivalent Dally average demand(Qds)=	24,000 cu : 23,301 cu : 17,924 cu :	75) p/m nz 19/m nz 19/m nz 19/m nz 19/m nz	s/d (incl. 3% of treatment loss) u/d u/d (qexx/1.3)	í treatsel	at loss)			-											
(1) Daily dre. Supply Capacity a. Bangual Reservoir b. Bang Tho Bang Reservoir c. Texporary Pupping	11,700	11,700	11,700	11,708	8,500	9,600	11,700 9,600	11,700 9,600	9,600	11,700 9,500	11,700 9,600	9,600	9,500	002,11 9,600	9,600	9,600	11,760	11,700 1	9,600	9,600	11,706	9,600
Total	11,700	11,700 11,700	17,924	17,934	21,300	21,300	21,300	21,300	21,300	21,300	21,300	21,300	21,390	21,300	21,300	21,300	21 300	21,300	21,300	21,300	21,300	23,389
(2) Daily Average Supply Amount Love E Loue 10 20se 11 20se 5	236 9,983 0,1881	248 10,022 2,480 (1,042)	286 10,076 2,527 1 5,054	294 10,131 2,576 4,923	323 10,185 2,624 4,791	354 10,240 2,674 4,657	386 10,294 2,725 4,523	10, 107 10, 313 2, 179 4, 394	19,391 2,838 4,267	453 10,439 2,892 4,139	177 10,486 2,349 4,611	501 3,007 3,007	517 10,447 3,020 1,920	574 10,363 3,034 3,953	612 10,283 3,048 3,931	651 10,206 3,063 4,004	691 10,132 3,079 4,022	730 10,058 3,094 4,043	769 2,987 3,109 4,059	310 3,125 4,071	351 3,852 3,142 4,079	893 3,159 4,083
Total	11,700	11,706	11,700 11,700 17,924	17,924	17,924	17,924 17,924	17,926	11,924	17,924	17,924	17,924	17,924	17,924	17,921	17,324	17,924	17,924	17,924	17,924	12,924	17,924	17,924
8-2. Phiret Maniespality System Panket Waries Capacity = [Exis.] Maxieus effective capacity (Gux.) = Guivaledt Daily average demond(dda)	ster apacity = [fective c	apacity erage de	ipality System Mariana Capacity = Maxiana effective capacity (Guax) = Equivalent Dally average deamod(Qda)=	17,700 cu 17,210 cu 13,238 cu	cu n/d (i.	n/d (inc). 3.% of treatment loss) n/d (dia * 1.3) n/d (Marium Raw Water Supply Capacity/f.08)	f treatme	at lossi pply Capa	city/1.0\$													
(1) Daily Are. Supply. Capacity a. Kining Pitz	cily 13,900	13,300	13,900 13,900 13,900	13,906	13,900	13,990	13,900 13,500	13,500	13,990	13,300	13,900 13,900 13,900 13,900		13,900	13,900	13,900	13,908	13,900	13,900	11,906	13,300	13,300	13,900
Total	13,900	13,900	13,900	13,900	13,908	13,900	13,900	13,900	13,900	13,900	13,900	13,900	13,900	13,300	13,900	13,900	13,300	13,900	13,900	13,900	13,500	13,900
(2) Daily Average Supply Amount Sone 5	Amount 13,238	13,238	13,238 13,238 13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	12,238	13,238	13,238	13,238	13,238
8-1. Kilag Katha Systes Khlong Katha 1972: (Proposed)	Maximum Capacity = Maximum effective co	apacity iffective it Daily	Aninus Capacity = Kaninus effective capacity (quar) = Equivalest Daily average denant(qds)	(qaar) = #8nd(qda)		13,900 cm m/d (imel. 3 f of treatment loss) 13,495 cm m/d (qda * 1.3) 18,381 cm m/d (Anzimum Kaw Kaler Supply Capacity/1.85)	icl. 3 % o la # 1.3] uximum Raw	f treathe Paler Sa	nt loss) pply Capa	city/1.85	.	* * <u>:</u>										
(1) Daily Ave.Supply Capacity a, thiong fatha Reversoir	city				10,900	10,960	13,900	16,500	16,980	10,300	10,390	10,900	10,900	10,900	10,990	10,900	10,900	006'01	10,900	10,900	006,01	10,900
Total	0	-	₽	Û	10,300	10,900	18,900	10,900	06 SI	10,300	10,900	10 300	10, 300	10,900	10,900	16,300	10,900	10,300	005'01	10,900	10, 300	10,900
(2) Daily Average Supply Acount Lone 1 Lone 6 Lone 5	Arount O		000	000	1,679 982 7,720	1,725 1,019 7,636	1,774	1,812	1,131	1,892 1,131	1,235	1,253	2,039 1,292 7,050	2,102 1,332 6,947	2,158 1,375 6,838	2,236 1,120 6,725	2,307 1,467 6,607	2,380 1,504 6,496	2,456	2,534	2,616 1,626 6,139	2,706 1,670 6,011
fatal	=	•	6	g	10.381	10.381	10.381	10.381	10.381	10.381	10.381	182.81	10.381	10.381	10.381	10.381	10.381	10.381	10,381	10 381	10,385	10,381

-
(Altergative
Capacity
Supply
Yater
Possible
laket

]tes	1930	1990 1991	1992	1993	1994	1995	.3661	1997	1998	1939	2000	2091	2002	2003	2004	2002	2002	2002	8007	5002	2010	11.02
S-i. Bang Meogr Dan System Bang Teon Dan Mill: [Proposed]		wacity = fective Daily a	Karimus Capacity = Maximom effective capacity (Rmax) = Equivalent Daily average demand(Qda	Quax = and (Qds.)	20,429 0	cv n/d {incl. 3 % cu n/d (Qda * 1.3) cu n/d (Kakiuun Ra	ci. 3 % o la # 1.3) rimon Raw	cv s/d (incl. 1 t of treatment loss) cu s/d (Qda * 1.1) cu s/d (Kariuus Raw Waler Supply Capacity/1.05)	nt loss)	sity/1.08								1				
(1) Daily Ave. Supply Capacity a. Bang Neon dan Reservoir b. Che Tra Reservoir	acity	ja sa			8,500	8,900	8,900	8,300	9,960	8,908	8,900	8,300	8,906	8,900	8,300	8,900	8,300 7,500	3,900	8,399	8,986	8,300 7,506	8,900
Total	0	0	8	.0	8,906	8,980	8,900	8,300	8,900	8,900	2,900	8,900	8,900	8,900	8,900	16,500	16,500	16,500	16,500	16,500	16,509	16,509
[2] Baily Average Supply Amount		•			-		. :		. :	;		į		;	;	;	;	;				
Lone 1	=	-	- -	e =	371	3 2	<u> </u>	¥ 5	E	524	88 1	S	\$ £	8 8	745	8 5	66 56 66 56	Ž	35.	33	965. 1	
4 00 07 00 07	9 09	, es			38	1,512	1,694	1,785	1,877	1,970	2,665	2,160	2,190	2,231	2,254	2,285		2,333	2,382	1,411	3,	4.3
Lone 5	~	00		. o	792 5,699	5,435	830 5, 169	881 5,004	872 4,836	6,653	. 38 . 48 . 48 . 48	. 36 . 36 . 36	949	362 1,041	975 3,899	989 10,988	1,604	1,015	1,027 10,566	10,039	1,052 10,280	1,065
Total	0	0	•	0	8,476	8,476	8,476	8,476	8,476	8, (76	8,476	8,476	8,476	8,476	8,476	15,714	112,211	15,714	15,714	15,714	15,714	15,714
8-5. fone 7 System Lone 7 WP: [Proposed]	Kaxiaca Capacity = Kaxiaca effective (Equivalent baily av	apacity = fective baily a	Raniaus Capacity = Raniaus effective capacity (Quax) = Equivalent Dally average desand(Qda	Quex) = and(Qda)	17,800 c 17,259 c 13,276 c	10 11/4 (in 10 11/4) (in 11/4) (in 11/4) (in 11/4) (in 11/4) (in 11/4)	cl. 3 % o	17,390 cu v/d (incl. 3 % of treathent loss) 17,259 cu v/d (qda * f.3) 19,276 cu v/d (Maximum Water Supply Asount)	nt loss) Amount)	f i i i i i i		; 1 1 1 1 1 1 1	1 1 4 1 1 1 1 1									
(1) Daily are. Supply Capacity a. Ehlong to Yung Reservoir	acity oir	:				21,400	21,400	21,460	21,400	21,100	21,486	21,400	21,400	21,400	21, 100	21,408	21,400	21,400	21,400	21,400	21,400	21,400
Total	0	-	0	0	0	21 400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,100	21,498	21,400	21,400	21,490	21,400	21,400
(2) Daily Average Sopply Amount Kone T Lone 5 (couveyed thru Malong Katha System)	Amount of System?	Ø 62	& G	0	~ 0	3,821	1,290	4,512 (822)	4,735 256	1,959	5,184	3,597	5,436	5, 654	5,434	5,525	5,557	5,584	5,611	5,640	5,683	5,708
Total	0	0	0	0		802	2,418	3,690	4,985	6,303	7,643	9,007	10,01	11,142	12,262	6,118	7,369	8,489	839'6	10,821	12,033	13,276
(3) Available Bater for Thai Ruang Resort	د	6	6	. 🖙	0	20,598	18,982	17,710	16,415	15,097	13,757	12,333	11,343	852,01	9,138	15,222	14,031	12.911	11,750	10,579	9,367	8,124
	1 1 1 1 1 1 1 1 1 1 1 1			• • • • • • • • • • • • • • • • • • •					1 1 1 1 1 1 1								· · · · · · · · · · · · · · · · · · ·	; ; ; ; ;		t 		
																				,		

Parket Possible Water Supply Capacity (Alternative 1)

1971)	1331	1992	1993	1881	1995	1336	1991	1998	1339	2002	2001	2002	2003	1002	5002	2006	2002	2002	2009	2016	2011
C. Fosnible Kater Supply C-1. Total of Possible Rater Supply Amount	ter Supply ,	Anount																				
Zone 1	:	0	~	0	371	£03	133		495	527	560	595	643	693			328	906	351	959	1,050	_=
Zone 2	-	<u></u>	-	0	285	316	318		388	(3)	<u> </u>	981	\$18	999	٠		563	141	100	90	608	
Tone	- 0	9	===	0	1.679	1,725	1,774		38	1.892	1,935	1.979	2,033	2,102			2,307	2,380	2,456	2.536	2,516	-3
Zone 4	0	47	0	•	932	1,019	1.057		131	1711	1.711	1.25	1,292	133			1.1	153	1.543	5	1,626	
Loae 5	14, 720	12,136	18.292	18.161	31,448	27.948	28, 604		79, 990	30, 703	31,430	32, 170	33,005	31,858	•		18.81	37.384	38.274	39, 179	10.100	-
Lone 6	23.55	240	366	78-1	323	35	385	101	00	(53	177	s	13	225	513	559		730	532	U S	. S	203
Lone ?	0	0	0	0	~	3,821	062.1	٠.	133	910	5.186	5,410	5. (36	3,464			5.557	28	5,611	5.540	5.859	
20ne 8	-	0	•	-	1,331	1,512	1 694		1,877	1,976	2,065	2, 160	2,190	2,221			2,375	35	2,382	2,412	7 (1)	-3
Zone 9	_	0		9	192	-	830		633	883	333	33	363	296			1.004	1 015	133	63	3 352	-
Lone 10	9,983	10,022	10,076	10,131	10;185	10,240	10,294		10,391	10, 139	10,486	10,533	10,447	10,363			10, 132	10 058	5,387	9.2	525	9
fore 11	-	08) '2	2,527	2,576	2,624	1,574	2, 723		2,838	2,892	2,949	1,007	3,028	3,034			2,674	3 09 (3,109	3,115	3,192	6-3
10131	24,938	24,938	31,162	31,162	50,019	128'05	52, (37	53,710	55,004	55,322	299'15	.920'65	60,076	81,161	52,28]	923,63	979,43	65 747	168,33	68,073	69, 257	76,533
C-2. Shortage Amount against Potencial Demand ([A-1]-[G	nst Potencia	al Deusnd	3)-(r-r))	=			;				;											
Sone 1	-	~	308		=	- -	0	c	-	•	0		0	0	0	0	ď	e	æ	~	G	
202e 2	0	205	230	228	0	0	0	0	=	0	0	0	0	0	0	0	Ð	0	0	0	0	
2 ago2	1,503	1,557	1,595	1 638	0	- -		0	6	0	ů	0	•	0	-	0	6	0	0	0	•	
Tone 1	-	0	606	318	0	es	<i>ح</i> ە	0	0	0	ت		0	0	0	9	0	0	0	0	6	
Zone 3	10,135	13,252	1,763	8,511	(4,144)	0	0		0	-	.	0	0	•	0	٠	9	<u>.</u>	Ů	60	0	
tone 6	€>	0	6	0	c	0	0	0	⇔	0	0	0	e	9	0		6	O	63	÷	0	
Lone T		0	2,417	2,885	3,353	-	9	<u></u>	0	c >	-	0	-	0	0	0	0	0	-	⇔	-	
Zone 8	•	0	969	1,149	0	.	3		-	0	æ	43	٥	0	-		•	G	0	0		
Lone 9	0	0	126	113	6	c3	.	~	~	-	0	6	0	0	0	=>	0	0	0	0	• :	
Lose 10	-	ເລ	~	-	0	0	0	-	0	0	0		0	O		0		0	=	0	÷	
Lone 11	o '	Ċ	9	•	0	0	5	0	Φ.	0	0	e.	¢.	0	8	9	¢> '	⇔ '	ø	6	0	٠.
Total	11,638	15,014	14,94	16,494	(792)	•	. 👴	. 0	6	· •	0	. -	€ .	. 😅	. 6	6	0	•	, O	٠	0	
>								1														İ

Phykel Fosmible Water Supply Capacity (Alternative 1)

D. Water Transmission Cost D.1 Basgwat System a. Raw Rater Temporary Pressing (Kilong San Yai) Qda-	**********											•										
Par Characteristics No. of Operating Purp	% सं स्ट	fai) Qda: Fead	6,224 50 m,	6,224	000	S 11	10.0 cu	n/nia,	Kotor	150 Ev.	É	en En	in i		: : : : : : : : :	: : : : :	4 8 8 9 9 1 1	1 0 1 0 1 1	i. 1. 1. 1. 1.			
d. Clear fater for Jone 18 à 11 Pary Characteristies	686.6	9,983 12,562 12,604 Head [20 (These figure sho	12,502 12,604 Head [20 m, (these figne shows		12,706 [2,889 [2,913 [3,018 [3,122 [3,227 [3,33] [3,436] 0] 0] 0] 0] 0	12,913 s, 9 = cteristics	13,018 5.3 cm	13,122 cu m/min, clear wate	13,227 Kotor er and the	13,331 12,436 360 Kv, Bo.		13,540 3 mi	13,467 units	13,397	13,331	13,269	13,211	77 171 171	13,896	13,043	12,99€	12,947
Mo.of Operat's Pusp	~		€>		e->	•	-	e->	p-3	e-3	era ,	ers.	دعه	۳,	643	era		4-3		e.s		
a. Chinng Ketha System a. Chear Raier for Jone 3, 4 8 Parp Characteristics No. of Operat's Purp	-	Verd O		o 4 6	10,393 200 m	10,381 1, q ≈	10,381 4.2 cu	10,381 cu s/nin,	10,381 Motor	10,581 10,381 40, Kv. Ho.	10,381	10,381 3 un	10,331 units	10,381	10,381	181	18,381	10,331	10,331	16,381	18,381	10,331
a. Glear Water a. Glear Water for Jone 1,2,8,9 & 5 Pup Characteristics Ro.of Operat's Pusp		Read O	8 0 0	o .: o	3 476 330 ms	65 4. 9 4. 45 7. 4	8,476 6.4 ca	8,476 ce a/site,	8,476 Rotor 2	8,476 60 Re 2	8,476 , 80.	8,476 3 sn	8,476 anits	8,476	8. 2. 2.	15,714	15,714	15,714	15,714	15,714	15,734	15,714
D-4 lone 7 System 3. And Vater From Chinag to Yang Pang Characteristics No.of Operat's Punp	9 0	Head 0	କ ପୁଟ କ	9 ei e.	000°	248 = 9 -	2,539 3,875 5.7 cu m/min,	3,875 m/win,	5,235 Motor 1	6,618 40 are,	,618 8,025 40 fm, No.	9,457 3 Eni	10,560 enits 2	699	528.52	50	221, 7	20 E1 E2	221 <u>-</u> 01	2 2 11	12,535	13,940
b. Clear Faler for Jose 7 & 5 Purp Characteristics No. of Operat's Purp	0,0	Read 0	.	Dia.	300	802 i, q = 0	2,418 5,4 cu	418 3,690 5,4 cu m/min. I 1	4,985 Kotor 1	6;303 50 KW,	50 Kv, 80.	9,007 3 uni	18,057 units 2	1,142 3	12,262	.138	1,369	\$51°%	9,619	10,821	12,033	13,276
D-5 Eversy Requirement fotal Output (Kw) Energy Consumption (Kwh/day)	32g 5,061	480 6,338	930	930	122'6 921	728 9,733	9,515	810 10,216	816 10,929	910 - 11,654 - 1	500	900	900	990	930 12,719	878	369 12,491	\$60 13,005	966 13,534	960 14,078	1,050	14,359
D-6 Energy Cost (Baht 1000) Denand Charge Energy Charge	879	1,319	2,556	2,558	1,979	1,979	2,226	2,226	2,228	2,226	2,473 5,101	2,473 5,410	2,473	2,721 5,488	2,721	2,391	2,638	5, 7, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8,	2,638	2,638	5,203	3,335
Potal	3, 152	4,165	\$1,418	5,433	61119	6,348	6,498	6,813	7,133	7,458	7,575	7,883	8,104	8,208	8,431	8, 167	8,246	8,477	8,714	8,958 Total Cost	9,689	9,332 159,719

621 996 1,012 1,016 1,016 1,026 1,132 1,149 1,176 1,197 1,218 1,214 1,241 1,287 1,319 1,333 1,336 1,380	. Treatment Chemical Cont (4da cu m/d) Total Treatment Anount (4da cu m/d) 24,938 24,938 31,162 Chemical Cost (8aht 1000)	Chemical Cont	137 53,710	1998	1998 1999 2000 5,500 51,662	2000	2001	2002	2603	2004	2004 2005 2006 52,231 53,436 64,625	2006	3007	2008	2007 2008 2009 2010 63,747 66,897 68,079 69,291	2010	2011
	191 (91 62]		045 1,070	1,096	1,122	1,149	1,176	1,197	1,218	1,241	1,264	1,297	1,310	1, 333	1,356	1,380	1.485
															Fotal Cost		23,890

Energy Costs are based on the 1988 EPA's charge rates as follows:
Deaand Charge Saht 229 /Kayso x 12 zo/year x Wotor Octput (Ew)
Energy Charge = Baht 1:23 /Kay x Energy Consumption(Reh/ddy) x 365 days/year

Chemical Gost
Alon (Average Dosage, 5 mg/1): Saht
Line (Average Dosage, 2.5 mg/1): Baht
L.25 /kg
Cl gas (Average Dos. 2.0 mg/1): Baht
L.560 /kg

1102

2, 700 1, 679 1, 679 2, 700 2, 700 1, 955 3, 139 3, 139 1,433 1,225 3,510 2,171 1,161 1,161 1,384 1,384 4,107 4,107 182,83 1,050 890 2,616 1,626 0,100 0,100 2,143 1,052 1,052 3,142 3,142 1,365 1,156 1,401 2,114 2,136 1,106 1,106 1,270 3,176 1,367 1,367 1,367 1,367 1,367 1,367 1,367 88,679 999 838 2,534 1,584 19,179 810 5,540 1,039 1,039 3,918 1,239 1,299 3,235 2,059 1,053 1,053 1,053 1,135 1,351 368,83 951 783 763 763 763 763 763 763 1,027 1,027 3,109 1,236 1,625 3,193 2,006 19,756 1,000 1,234 1,335 1,335 1,342 4,042 55,717 204 741 741 2,380 11,504 130 130 2,353 11,015 11,015 3,034 3,175 963 3,094 1,956 48,600 1,259 3,059 3,059 1,020 1,022 4,022 929')9 858 695 2,307 1,467 6,511 691 5,527 1,004 6,132 9,079 81,914 1,116 903 3,000 1,907 17,464 898 7,225 3,023 1,305 1,305 4,002 4,002 800 648 2,236 1,420 5,603 651 5,525 2,289 0,206 3,063 1,041 843 2,907 1,846 16,292 846 846 7,182 2,978 1,286 13,258 3,382 3,382 503 503 1,375 1,375 14,724 612 5,494 2,254 975 10,283 2,818 1,787 1,787 1,787 1,141 1,267 1,368 3,368 2,723 1,732 550 2,102 1,332 3,856 3,856 5,464 5,464 2,221 2,221 3,034 3,034 543 2,039 1,292 3,005 3,005 537 5,436 2,130 2,130 3,020 3,030 3,130 3,030 3,13 835 2,551 1,673 1,673 1,057 2,868 1,057 1, 595 (80 1,979 1,253 32,170 501 5,410 2,160 2,160 2,160 3,400 10,533 920,63 774 624 2,573 1,625 11,625 11,821 651 7,033 2,808 1,218 1,218 1,218 3,909 560 471 1,211 1,211 11,211 11,211 11,430 2,143 2,065 2,065 2,065 2,915 2,919 728 586 1,574 1,574 6,735 6,735 6,735 1,189 3,632 3,634 56,322 527 1,892 1,892 1,171 1,171 653 4,958 1,970 893 893 803 2,892 585 550 2,460 1,522 19,914 589 5,447 1,161 544 2,406 3,471 5,156 5,156 3,503 3,503 3,503 505 482 1,422 1,422 530 530 1,422 1,136 1,136 1,146 1,510 1,161 1, 465 370 370 1,812 1,094 4,513 1,785 851 0,343 2,779 568 450 2,307 1,374 17,185 77,185 2,503 2,203 2,203 11,079 11,079 3,541 437 346 1,774 1,057 8,564 386 4,296 1,694 0,294 2,723 50,821 10.725 11,725 11,019 17,948 33,421 1,512 811 811 9,240 524 409 2,241 1,325 16,332 4,988 4,988 1,966 1,054 1,054 1,054 1,312 3,476 371 285 1,679 1,679 27,304 27,304 3,353 1,331 1,231 1,231 10,185 2,624 19,228 482 370 3,183 1,276 426 426 4,359 1,730 1,730 1,730 1,730 3,412 3,412 255 255 1,636 1,636 2,673 2,885 1,1149 773 2,576 2,576 446 333 2,127 1,228 34,675 34,675 3,750 1,494 1,604 1,604 13,170 3,348 308 230 230 1,595 26,054 26,054 754 10,076 2,527 400 299 2,074 1,181 1,181 3,142 3,142 1,260 11,260 12,099 3,286 3,286 thaket Possible Water Supply Asount (Alternative 2) 205 1,557 1,557 240 240 0 0 0 0 0 0 25,448 240 2,400 2,400 2,480 267 2,024 33,083 33,083 13,029 13,029 3,224 51,938 36,577 1,503 1,503 236 0 0 0 0 0 0 0 0 0 1,954 1,954 10,311 303 0 0 0 0 0 0 0 i. Potencial Mater Desand Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 Zone 8 Zone 9 Zone 10 Zone 10 Zone 10

lten	1930	1881	7661	1993	1994	1955	1996	1997	8661	1933	2000	1002	2002	2003	1007	2002	2006	2007	2008	2003	2010	2011
B. Mater Sources Available (Daily average supply capacity	Daily aver	age suppl	y capacit.		= 105 % of daily average desand	average d	enand)	• • • • •								<u> </u>						
H-1. Bangwat System Bangwat YPP: Maximus Capacity = {Exis.) Maximus effective capacity (Quax) = {Exis.) Equivalent Daily average demand(dda)=	Bacily = fective cal	pacity (q.	ieax) = isd(9da)=	24,008 23,101 17,924	M,000 cm m/d [inc]. 3 % of treatment loss] 13,301 cm m/d [7,324 cm m/d (@mm/1.3)	il. I x of a/1.3]	treatmen	1 (088)														
(1) Daily Are. Supply Capacity a. Dangual Reservoir b. Bang Tho Song Reservoir c. Cemporary Pumping	1,700	11,700	11,700	11,780	11,700	11,700	11,700	11,700 1	11,700 1	11,700 1	11,700 1	11,700 1	11,700 1	11,700	11,700	11,700 1	11,700 !	11,700 1	11,700 1	11,709 1	3,660	9,609
Total	11,300	11,700	11,924	17,924	17,924	11,924	17,924	17,924	17,324	11,924	17,924	17,924	17,924	1 1,924 1	17,924	17,924	1 825,71	17,924	17,924	2 725 11	21,300	21,300
(2) Daily Average Supply Avouat Lone 6 Lone 10 Sone 11 Lone 11	3,283 9,283 1,581	240 10,022 2,480 (1,012)	10,078 2,527 5,034	29.4 10,131 2,576 4,923	323 30,185 2,624 4,791	354 2,674 4,657	386 19,294 2,723 4,521	407 2,779 2,779 4,394	430 10,391 2,836 4,267	453 2,892 4,139	477 10,486 2,949 4,011	501 3,007 3,883	537 3,020 3,920 3,930	574 10,363 3,934 3,953	512 10,283 3,048 3,981	651 10,206 3,063 4,004	691 5,073 4,022	022 360,01 05,038	763 3,109 4,059	3,125	851 3,142 4,079	243 3,788 4,083
Total	11,700	11,700	11,924	17, 924	17,924	17,924	17, 924	12,21	17,924	17,924	17,926	11,924	17,924	17,924	17,924	17,924	126,11	17.324	17,924	17,924	17,924	17,935
9-2. Phubet Kunicipality System Phuket HFP: Maximum Capacity = (Knim.) Maximum effective Equivalent Daily an	ipality frates Kaisas Chamity = Kaisas effective mannity (Gamt) = Squivalent buily average desaud(qda)=	ipacity (C	Quax) = and(Qda)≈		11,700 cu s/d (incl. 3 % of treatment loss) 11,210 cu s/d (gda † 1.3) 13,238 cu s/d (Maisus Raw Water Supply Capacity/1.85)	cl. 3 % o a % 1.3} zieum Ram	trealmen Water Sup	it loss} iply Capac	ity/1.05]		A.T.	er i de en en			.*							
(1) Daily Ave. Supply Capacity a. Rining Pits	city [3,900 13,980	13,900	13,900	13,900	13,980	13,900	13,900	13,980	13,900	13,900	13,900	13,900	13,900	13,900	13,900	13,900	13,900	13,960	13,900	13,900	13,996	13,990
Total	13,900	13,900	13,900	13,900	13,900	13,908	13,900	13,900	13,300	13,300	13,900	13,500	13,900	13,900	13,900	13,300	13,900	13,900	13,900	13,900	13,900	13,966
(2) Daily Average Supply Amount Zone 5 13,	13,238	13,238 13,238	13,238	13,238	13,238	13,238	13,238. 13,238		13,238	13,238	13,238	13,238	13,238	13,238	11,238	13,238	13,238	13,238	13,238	13,236	13,238	13,238
8-3. Thiong Katha System Khiong Katha MP: [Proposed]	Kaxinan Capacity = Kaxinan Cifective capacity (quax) = Equivalent, Daily average deamod(Qda	apacity = [fective (Kazinan Chacity = Kazinan effective capacity (Quax) =: Equivalent, Daily average denand(Qda)	(Quax.) = 12ad(Qda)	13,900 c 11,495 c 10,381 c	u s/d (in n s/d (9d) u s/d (Ne.	:1. 3 % of 1. \$ 1.3} (ison Ray	i treaimen Kater Sup	it loss) iply Capac	13,900 cu v/d (incl. 3 % of treatheat loss) 13,495 cu v/d (dda 4 1.3) 10,381 cu v/d (Axison Ray Kater Supply Capacity/1.05)								•		A section of		
(1) Daily Are.Supply Capacity a.Edlong Katha Beservoir	city			a viv	10,300	10,900	10,900	10,900	10,900	10,900	10,390	10,900	10,500	006'01	10,990	10,900	19,900	10,960	10,900	10,900	10,900	10,300
Total	-	0	÷	=	10,900	10,990	10,900	10,900	10,900	10,940 10,900		10,500	10,300	10,900	006,01	10,260	10,900	10,900	006 61	10,300	10,306	10,900
(2) Daily drerage Supply donate Lone 3. Lone 4. Lone 4. Lone 5. Lone 5.	Moust, 0	~	0	. e e e	1,679	1,725 1,019 7,636	1,774	1,812 1,094 7,475	1,4831	1,892	1,935 1,211 7,235	1,979 1,253 7,148	2,038 1,232 7,050	2,102	2,168 1,375 6,838	2,236	2,387 1,457 5,607	1,504	1,456	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	2,515 1,525 6,139	1,670
total	0	0	Đ	0	10,381	10,381	10,381	16,381	10,181	10,181	10,381	10,381	18,381	10,381	10, 38!	10.381	18,381	10,391	10.381	10,383	10,381	10, 181

Therefore executy (base) = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 of treatest loss) Appelly = 20,500 on 16 (Teb.) 27 on 1		1886	. 100	1001	1807	1681	1005	1492	1001	500	1444	2000	2001	2002	2003	2004	2005	2006	2002	2008	1000	1010	c:s
10 10 10 10 10 10 10 10	B-4. Rang Neov Dan System Bang Neov Dan VIP: (Proposed)		pacity = fective of Daily are	spacity (6 rrage dens	lmax) = md(qda)	21,000 cs 20,429 cs 15,714 cs	1 n/d (Na:	cl. 3 % o a # 1.3) xinus Ray	f treatec	ıt loss) ıply Capaı	ity/1.05)	1	1 6 8 8 8		* * * * * * * * * * * * * * * * * * *	4.							
Supplement Sup	(1) Daily Ave.Supply Cag a. Bang Reow Dan Accerve b. Che. Tra Reservoir	acity ir	•		t. V	8,900	3,300	8,900	8,900 7,600	8,300	3,900	3,900	8,900 7,600	8,900	8,300	8,300 7,600	8,980	8,340	8,900	8,300 7,600	7,698	8,300 7,500	8 200 7.600
Supply Housest C	1013]	0		•	-	16,500	16,500		16,300	16,500	1		i	•	•	i	•	ì	•	i	16,500	16,500	16,500
0 0 0 0 0 131 141 141 143 14	(2) Daily Average Supply	Amoust				· _				٠		•						:				. ;	
	Z02e 1	٥,	÷	Θ,		11	£ 5	137	£83	495	523	280	595	£ :	693	745		858		155	983	1,050	1,183
1,000 1,00	Tone 2	\$	e c	e =	ဆင	£ 58	£ 5	332	787.	£ 5	22.5	7, 665	2,160	2,130	2.22	2.254		2,325		282.2	2,412	2,443	60
Heritan Capacity	Zone 9			-		792	811	830	831	378	883	915	937	55 5 25 5 27 5 27 5 28 5 28 5 28 5 28 5 28 5 28 5 28 5 28	1 718	976 10 666		1,004		1,027	1,039	1,052	1,065
Retire Caperiy =	Zone 3	2	- İ	3	>	1,999	91-17	657,5	791.4	2,400	9,001	61610	100,1	01.30	2,110	2004	- 1	10,004			24		:
Region Capacity =	Total	Û	5	5	8	4,332	5,457	109,3	7,654	8,725	3,820		12,073		14,154					15,714	15,714	15,714	15,714
21,600 21,400 21	8-5, Lone 7 System Lone 7 MTP: (Proposed)	Maxicon Ca Maxison of Equivalent	pacity = fective c	apacity (Quax] = and[Qda]	17,800 c 17,259 c: 13,276 c:	u n/d (in u n/d (9d	ici. 3 % o la # 1.3) ximum Kat	f treatme	nt loss!													
0 0 0 0 3,821 4,290 4,512 4,735 4,949 5,184 5,410 5,436 5,464 5,494 5,255 5,357 5,584 5,611 5,640 5,669 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(1) Daily Are. Supply Car a. Chiong to Tung Reserv	sacity roir					21, 600	21,400	21,400.	21,400							21,400	1	i	007'12	21, 400	i	21,460
0 0 0 0 0 3,821 4,230 4,512 4,725 4,959 5,184 5,410 5,436 5,494 5,494 5,525 5,537 5,584 5,611 5,640 5,669 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total	0	0	0		0	21,400	21,400	21,400	21,400	i .	į.	i '	i	,	i.	•	•				21,480	21,400
0 0 0 0 0 3,821 4,200 4,512 4,735 5,184 5,110 5,436 5,464 5,581 6,178 7,359 8,489 9,640 10,821 12,033 t	(2) Daily Average Supploon of Lone 7 Lone 5 (conveyed thru thing Kath			00		0.0	3,821	4,230	4,512	4,735	f, 959 0	5,184	5,410	5,436	5,464	5, 494	5,525	5,557	5,584	5,611	5,640 5,182	5,869	5,700
t 0 0 0 0 0 17,579 17,110 16,888 16,665 15,441 16,216 15,990 15,964 15,936 15,322 16,031 12,911 11,750 10,579 9,367	Total	0	0	0	-	0	i	4,290	4,512	4,135	1,959	5,184	8,410	! .	§, 46¢	\$88'5		7,369	683,48		10,821	12,033	13,276
	(3) Available Rater for Thai Roang Resor		0	0	6	0	17,579	17,110	16,888	15,665		,	•	1	i	i	i	i	i		10,573	9,367	8,124
		1				1							, , , ,										
																					. 1		
			-																				

	1990	1991	1992	1993	1384	1995	1996	1997	1998	1339	5000	2001	2002	2003	5002	2002	3002	2002	2018	2003	2010	2011
C. Possible Water Supply C-1, Total of Possible Water Supply Amount	er Supply A	Jun Çi				• • • • • • • • • • •	: : : : :		t 1 1 1	 			:		! ! ! ! !		<u>.</u>					
Zone 1	-	0	-	•	111	ŧ03	133	165	\$61	223	980	\$95	643	893	745	800	653	304	125	393	1,050	1,103
fore 2	0	0	9	0	285	334	348	370	360	123	453	130	513	220	603	949	695	141	789	838	930	3(3
Zone 3	0	•	•	0	1,579	1,725	1,774	1,81		2581	1,335	1,979	2,039	2,102	2,168	2,236	2,307	2, 380	2,456	2,534	2,616	2,700
t anoz	0	•	-	•	382	1,019	1,057	1,094	1,131	1,171	1,211	1,253	1,292	1,332	1,375	1,420	1,467	1.56	1,543	1,584	1,626	1,670
fore 5	14,726	12,196	18,293	18, 181	27,304	27,948	28,594	29,290	29,590	30,703	31,430	32, 170	33,005	33,856	34, 721	15,609	36,511	37 384	38,274	39, 179	40, 100	41,037
Jone 8	236	210	256	767	323	354	386	101	9	123	(11	20	237	574	513	1 5 8	691	730	159	810	851	893
Zone 7	6	0	0	0	-	3,821	1.290	1,512	4,735	4,359	5,184	5,410	5, 136	5,464	5, 494	5,525	5,557	5.58	5,511	5,640	5,669	5,700
Lone 8	~	۵	~	~	1,331	1,512	1,694	1,785	1,877	1,976	2,065	2,160	2, 190	2,221.	2,254	2,289	2,325	2 353	2,382	2,412	2,463	2, (76
6 2007	-	-	0	•>	742	8	330	851	27.0	883	9.55	937	£	362	975	586	1,900	1 015	1,027	1,039	1,052	1,065
Tone 10	9,983	10,022	10,075	10,131	10,185	10,240	10,294	10,343	10,391	10, (39	. 981 101	10,533	10, 47	10,363	10,283	10,206	10,132	10,058	9,987	9,918	9 853	3,388
Lone il	6	2,480	2,527	2,576	129'2	2,674	2,723	2,779	2,836	2,892	2,949	3,007	3,020	3,034	3,048	3,863	3,073	3 094	3,109	3,125	3,142	3,159
Total	24,938	24,938	31,162 31,	31 162	15,875	50,821	52,437	53,710	12,004	56,322	51,662	59,026	870,03	61,181	182 29	61,436	929'19	65,747	168,837	68,419	69, 231	70,533
C-2. Shortage Amount against Potencial Demand [(A-1)-(C-1)]	nst Potencia	l benard	0)-(1-1))	=																		
Zone 1	-	0	308	338	0	-	=	0	0	0	0	-	0	c		0	e3	0	9	0	⇔	Ç.
Lone 2	~	205	230	355	0	-	0	•	0	0	0	-	=	¢	0	0	0	-	e,	0	-	=
Sone 3	1,503	1,557	1,595	1,636	<u>~</u>		.	<u>-</u>	\$	0	0	0	0	0	0	0	0	0	0	0	0	e >
200e 4	6	0	606	342	0	=		Ţ	•	9	0	9	ED	Ø	c	٠	G	0	~	0	o '	Ø
Tone 5	10, 135	13,252	7,763	8,511	0	0	0	-	0	0	0	0	0	.	-	63	0	⇔	0	9	0	=
Lone 5	0	6	-	, c	-	0	0	0	=	-	9	·	-	=	ė	Ö	-	0	-	î	9	©
Lone T	0	0	2,411	2.885	3,353	-	0	0	0	0	⇔	0	0	Ö	යා		<i>-</i>	÷	⇔	E	0	æ
Sone &	•	-	696	1,149	•	⇔	-	0	0	-	0	69	-	9	Ġ	-	6	C	0	e	⇔	
gene 9	0	0	75.	133	-	0	0	0	-	0	0	0	0	63	0	0	6	-	¢>		8	0
Tone 10	9	0	~	<u>~</u>	~	0	\$2	0	~		ø	ci	a	(2)	٥	خ 	~	-	6	40	⇔	9
Sone 11	0		٥	6	0	~	-	=	⇔ `	-	0	e	-	C	0	ے .	Φ,	6	(-	63	~
Total	11,638	15,014	31 H8,11	16,494	1,353		. 0	ల	0	۵	0	Ó	6	6	0			· 👄	.	0	چ	-
				-																		-

Parket Possible Nater Supply Asonat (Alternative 2)

ites	1990	1661	1992	1993	1994	1935	1936	1997	1988	6661	9002	2001	2002	2003	3004	2002	5005	2007	8002	2002	20:0	201
D. Tater Transmission Cost D. Baggan System a. Raw Bater Temporary Fumping (Malong Ram Yai) qda- Pump Characteristics Bo. of Operating Pump	San H	Head Head	6,224 50 2, 3	6,22 0 13.	82.2.4 308 3	6,224 9 = 0	5,224 10,0 cu	6,221 1,818.	6,224 Notor 3	6,224 150 Kv.	6,22 80.	5,02 3 3 8 8 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	6,224 gnits 3	5,224	5,224		122 E	63 63 64	52.5	20 63 63	– –	6 6 .
b. Clear Water for Lone 19 E 11 Pag Characteristics Wo.of Operat's Pusp	8,983	12,502 Bead (These fig	9,983 12,502 12,604 12,705 Bead 120 m, Dis. (These figure shows the ave. 2 3 3 3 3		12,809 12,913 13,018 13,122 13,227 13,331 13,436 300 ms, g = 5.3 cm s/min, Motor 160 fw, Bo. age characteristics of the clear water and the bouster pumps. 3 3 3 3 3 3	803 12,913 300 mm, q = characteristics	13,018 13,122 5.3 cm #/min, of the clear wa	13,122 1 m/min, lear water 3	13,227 *clor :r and the	13,331 13,436 160 Es. Ro. : booster punps:	.331 13,436 60 Er, Ro. soster pumps.)	3.5.5 5.5 5.5	13,667 mits 3	13,397	13,331	13,289 13,211		13,152	13,036 13,043	13,043	12,994	12,947
D-2 Khlong Katha System a. Clear Water. for Sone 3, 4 & 5 Pusp Characteristics So.cf Operat's Pusp	⊕	G G G G G G G G G G G G G G G G G G G	ဂမ္ ဂမ္	9 4	10,281 10, 200 mm,	1381	10,381 I	10,381 cs w/min,	10,381 Rotor 3	10,381 10,381 40 34, 80,	16,331 r, fo.	181 (01 3 m	10,38; maits 3	16, 381	## #7 ## ##	18,381	10,381	65 65 65 65 65 65	38.101	19,181	19,381	10,281
p-3 Bang Keow Dam System a. Clear Water for Lose 1,2,8,9 4 5 Page Characteristics No.of Operat's Page	0 0	Head 0	600	0	4,332 300 mg	5,457	6,504 5.4 cu	7,654 m/sin,	8,725 Kolve 2	2,820 10,936 60 Kv, Ho. 2	20 10,936 60 Km, Ho. 2	12,673 3 an	13,097 units 3	14,154	15,24	## C5	15,714	15.31	10 11 11 12 13 14 15	20 20 20 20 20 20 20 20 20 20 20 20 20 2	15,21	11.
D-4 Jone 7 System a. Raw Water Prom Malong to Youg Pusp Characteristics Ro. of Operal's Pusp		Head 0	କ ପୁରୁ ଅନ୍ତ	9is.	008	210'7	4,585 5.7 cu	4,738 m/min	4,972 Kotor 1	5,207 40 %	5,443	5,680 1 un	5,708 units	5,738	5,769	563.7	1,133	60 61 61 61 61 61	15, 122	11,383	554.45	173 173 173 173
b. Glear Water for Jose 7 & 5 Prusp Characteristics Ro.of Operat's Pump	0	gesq g	000	0 18.	300 mm,	3,821	4,230 5,4 cu	4,512 n/min,	1,735 Kotor 1	4,959 5 50 24,	5,134 5, 10.	F	5.25 20 102 1	5.68 1	5 E		grander gr	€ *** • ***	ten en san san san	128 E		2.2. E
D-5 Energy Requirement foral Output (Ew) Energy Consumption (Kab/day)	320	180	910	930 6,409	9,632	1,200	1,200	1,290	1,260	1,260	1,260	1,269 13,610	1,320	13,740	1,320	1,320	1,110	1,410	15,363	1,410	1,050	1,050
0-6 Epergy Cost (Saht 1006) Deand Charge Energy Charge	879	1,319	2,556	2,555	3,050	3,298	3,238	3,298	3,462	3,462	3,462 5,915	3,452 6,110	3,627 6,052	3,627 6,168	3,627	3,627 6,491	3,875	3,875	2,875	3,875	2,385	2,835
Total	3,152	4,165	5,418	5,433	7,375	8,364	8,626	8,816	8,995	9,184	9,377	9,573	9,679	9,756	9,917	10,119	16,292	10,528	10,772	11,623	9,089	8,333

E. Treatment Chemical Cost. Total Treatment Assumt (dat or w/d) 24,038 24,938 31,162 31,162 45,875 50,821 52,437 53,710 55,004 56,322 57,662 59,026 60,076 51,161 62,221 62,436 64,626 65,747 66,897 68,079 87,291 70,532 Chemical Cost (Eakt 1800) 457 497 621 621 621 621 621 621 621 621 1,012 1,045 1,070 1,096 1,122 1,149 1,176 1,197 1,218 1,241 1,257 1,310 1,330 1,356 1,380 1,465	ten.	1930	1990 1991 1992	1992	1993	1394	1995	9661	1661	1998	1989	2000	1002	2002	1002	5003	2005	9002	2002	2008	2002	2010	2011
und {qda ce n/d} 24,538 24,538 31,162 31,162 45,675 50,821 52,437 53,710 55,004 56,322 57,662 59,026 50,076 51,161 62,221 62,436 64,626 65,747 65,897 68,079 1900) 497 497 621 621 914 1,012 1,045 1,076 1,036 1,122 1,136 1,137 1,218 1,241 1,254 1,257 1,310 1,335 1,356	Restrent Chemical Cost	,	1								; ; ; ;												
24,938 31,162 31,162 45,875 50,821 52,437 53,710 55,001 56,722 57,052 50,076 51,161 62,221 53,436 64,676 65,877 65,897 64,079 497 621 621 621 914 1,012 1,065 1,005 1,006 1,122 1,149 1,176 1,197 1,518 1,218 1,254 1,257 1,310 1,335 1,335 1,335	Total Treatment Am	=	{p/n n				;	;	:	. :	:	;			:	;	:	;	;	;	;	. ;	;
197 621 621 914		24,038	24,938				50,821	53,433	53, 119	55,99	58,333	29'15	23,026	80,076	5], [5]	62,28	63,436	979'19	65.74	65,837	68,013	53.53	70,53
197 621 621 914	Chemical Cost (Bah	t 1000)																					
		187	197	129	521	914	1,012	1,045	1,070	1,038	1,122	1,149	1,176	1,197	1,218	1,211	1,264	1,287	1,310	1,333	1,356	1,380	1, 46
																				_	1504 15101		,

Backy Costs are based on the 1986 EBA's charge rates as follows:
Demand Charge = 8aht 229 /Kwimo x 12 mofren x Keter Dutput (Es)
Energy Charge = 8aht 1.23 /Kwimo x 12 mofren x Keter Dutput (Es)
Energy Charge = 8aht 1.23 /Kwimo x 12 mofren x 12 mofren x 12 mofrenge Donnge, 5 mg/1): 8aht 4.05 /kg
Lime (Arerage Donnge, 5 mg/1): 8aht 1.25 /kg
Cl gas (Arerage Dos. 2.0 mg/1): 8aht 11.60 /kg

Parel Forstele Rater Supply Asount (Alternative 3)	EDDIY AN	TIN Jaco	erbature																				
llea		1630	1991	7661	1813	1994	1995	1996	1661	1998	1988	2006	1001	2002	2002	2004	2005	2008	1002	2008	2003	2010	2011
A. Potencial Vater Denand	72									;													
A-1. Daily Average Dearm	a Pa					÷					:		1	:	٠.								
Zone 1		_	0	308	: 1	371	(03	131	533	195	523	560	585	643	693	715	808	858	364	186	666	1,658	1,193
Zone 2		6	205	230		285	314	346	370	396	123	15)	180	519	580	603	818	695	741	789	818	890	31
Zone 3		1,503	1,557	1,595		1,679	1,725	17.1	1,812	1.83.1	1,892	1,935	1,979	2,039	2,102	2,163	2,236	2,307	2,380	2,436	2,534	2,616	77
Lone 4		-	-	303		982	1,039	1.057	1,094	1,131	1.171	1,211	1,253	1, 232	1,332	1,375	1, (20	1,457	1,504	1,543	1,584	1,626	
Lone 5	-7	1,855 2	5,448 2	26,054 2		7, 304	876,75	28, 604	29,290	966 62	30, 703	31,430	32,170	33,005	33,856	34, 724	15, 609	36,511	37.39	33.274	39,179	40, 160	113
Zone 6		236	340			323	*** ***	386	181	8	53	111	503	23	574	612	853	163	138	169	8.10	\$8	
Zone 7		©	0	2,417	2,685	3,353	1,821	1,290	4,512	4,735	6,959	5,184	5,410	5, 436	5,464	5,494	5,525	5,557	5,53(5,631	5,640	5,669	3
gone 8		-	-	696		1,331	1,532	1.69	1,785	1,877	1,970	2,065	2,160	2,190	2,221	2,254	2,289	2,325	2,353	2,382	2,412	2,443	5,
Zone 9		0	0	124		192	811	830	55	872	883	915	937	616	362	975	383	1,604	1,015	1.027	1,039	1 052	
Loze 10	. *	9,983	0,022	1 910'0	_	0,185	10,240	10, 294	10,343	10,391	10, 439	10,488	10,533	10, 447	10,363	10,283	10,205	10,132	10,058	9,987	9,318	9,852	a,
Lone 11	:	-	2,188	2,527		2,624	7.67	2,723	2,779	2,836	2.89.2	6)5'2	3,047	3,020	3,034	3,048	3,063	3,079	3,096	3,193	3,125	3,142	دع
Total	67	36,577 3	39,952 41	£ 901'9}	1,656	19,228	50,821	52, 437	53,710	55,004	56,322	53,662	920,65	80.03	61,161	62,281	63 (36	979*19	65,747	66,897	68,079	65,291	79,333
A-2. Daily Maximum Denance	and																						
Zone 1			c	400		283	£25	2 68	503	10	583	728	174	835	900	696	1,041	1,116	1,175	1,236	1,239	1,385	
Zone 2		6	192	299		370	£03	150	183	\$15	550	985	¥29	673	129	784	843	903	363	1,025	1,030	1,156	
Lone 3		135	2,024	2,074	2.	2, 183	2,243	2,307	2,355	305.2	2,460	2,515	2,573	2,651	2,733	2,818	2,307	3,000	3,034	3, 193	3,235	3,401	3.5
Jone 4	٠.	6	-			1,276	1,325	1,374	1, 122	1,471	1,522	1,574	1,629	1,679	1,132	1,787	1,846	1,907	1,956	2,006	2,059	2,114	2,
g avoz		32,311. 3	33,083 3.	3,870 3	14,675 3	15, 195	36,332	37,185	38,077	38,986	39,914	50,859	41,321	906'21	£4,013	45,141	16,292	191'()	18,600	19,756	50,933	52,130	E
Lone 5			. 2			120	160	501	53	559	583	620	651	869	146	735	846	898	948	1,030	1,053	1,106	=
Lone ?		<i>~</i>	0			4,339	1,368	5,578	3,886	931.6	1 4 5	5,739	7,033	7,067	7,104	7,142	7, 132	7,225	7,259	7,294	7,333	7,370	, ·
Lone 8		0	6			1,730	1,966	2,203	2,321	. 11117	2,562	189'2	2,808	2,846	2,387	2,930	2,975	3,023	3,053	3,997	3,136	3,116	٠; د
g aug		-	~			1,029	1,04	1,079	1,106	1,133	191	1,189	1,218	1,234	1,250	1,267	1,286	1,365	1,320	1,335	1,351	1,35	
01 ano2	_	12,977	3,029	3,099 1		3,241	13,312	13,383	13,446	13,569	13,571	13,532	13,693	13,581	13,472	13,368	13,268	13,172	13,075	12,983	12,834	12,807	12,725
lose II		_	3,224			3,412	3,476	3,541	3,813	3,886	3,768	3,834	3,909	3,326	1,944	1,962	3,932	1,002	4,022	1,042	1,063	1.08	
Sotal	•	67,549 5	51,938 \$1	59,938 6	1,953 6	63,996	890,39	891'88	69,822	71,506	73,218	14,96!	16,134	78,099	19,509	30,965	82,486	84,014	85,471	86,967	88,502	90,078	91,693
				********			********							*********				**********					į

	i
	•
	·
	i
٠->	i
ம	i
20-	i
-5	ì
~=	i
=	- 6
an an	į
=:	·
	•
	•
	:
ã	:
õ	i
-	:
_	i
÷,	•
-	- 1
5	ij
~=	٠
	ij
H	:
	i
~	•
به	
=	ï
	٠
200	ļ
ő	į
σ.	:
	i
93	i
=	ì
-	i
	•

lten.	1990	1991	1932	1993	1334	1395	1396	1991	BG 01	667	2000	2001	2002	2083	2004	2005	2006	2007	2003	2000	3010	101
B. Maker Sources Arailable (Daily average supply capacity = 105 % of daily average deamd)	(Baily ave	rage supp	ly capacit	ly = 105 X	t of daily	average c	leannd}	1					1			į						3
S-1. Sangwat System Bangwat NTP: Maximum Capacity = (Rxis.) Kaximum effective of Equivalent Daily av	kariaum Capacity = Kariaum effective capacity (Gast) = Equivalent Daily average demand(Qda)=	apacity (erage des	quax) = iead(qda)=	24,00 23,30 17,92	0 cu m/d (incl. 3 % of i cu m/d (quax/1.3)	[incl. 3 % of (quax/1.3)	of treatment loss)	t loss)														
(1) Daily Ave. Supply Capacity a. Bangsak Reservoir	acity 11,700	11,700	11,700	11,700	11,700	11,700	11,700	11,700	11,700	11,700	11,700 1	11,700	11,700	11,706	11,700 1	11,700	11,700 1	11,760 !	11,709	11,700		11,700
o. Temporary Pumping	=		6,224	6,224	6,224	6,224	6,224	6,224	6,224	6,224	6,224	122'9	6,224	6,224	8,224	8,224	37.53	6,224	6,224	6,224	9,600	20
Total	11,700	11,760	17,924	17,924	17,924	17,924	17,924	17,924	126,71	17,924	17,924	11,924	17,924	17,524	17,024	17,924 17	17,924 I	17,92(1	17,524	17,524	21,300	21,300
(2) Daily Average Supply Avouat Sone 16 Sone 10 Sone (1) Sone (2)	Amount 236 9,983 0	240 10,022 2,480 (1,042)	2,527 2,527 5,054	294 3,518 4,923	323 10,185 2,624 4,791	354 10,240 2,674 4,657	385 10,294 2,723 4,521	16,343 2,179 4,394	430 2,835 4,267	453 1, 853 1, 139 1, 139	10,486 2,949 4,031	501 3,007 3,883	30,447 3,020 1,920	574 2,363 3,934	16,283 1 3,043 3,981	10,285 3,953 4,964	531 3,132 1,023 4,922	730 10,058 3,094 4,043	759 9,537 4,059	810 3,125 4,071	851 9,852 3,142 4,078	893 3,788 3,159 4,683
Total	11,700	11,700 11,700	17,924	17,924	17,921	17,924	17,924	17,924	17,924	17,924	17,921	17,924 1	17,924	17,924	17,524	17,924	11,924	17,324	17,324	17,924	17,924	17,924
8-2. Parket Konicipality Syster. Phaket ETE: Karinus Capacity = (Exis.) Razinus effective o	ipality Syster. Kariana Capacity = Rariana effective capacity (Qnax) = Equivalent Daily average desand(qdat)=	specity (crage de	Qnax) = land(qda)=	•	17,780 or m/d (incl. 3 % of treateent loss) 17,218 or m/d (da. * 1.3) 13,23% or m/d (kxrimem Gar Mater Supply Capacity/1.08)	cl. 3 % o a * 1.3) rises Ray	i treatmen Mater Sup	t loss) ply Capaci	ity/1.05)									# 				
(1) Daily Ave. Supply Capacity a. Rining Pits	acity 13,900	13,900 13,900	13,900	13,300	13,900	13,900	13,908	13,960	13,900	13,900	13,990 I	13,900 1:	13,900 1	1 006 CI	13.960 1	13,900	13,900	13,900 1	13,500	13,500	13,500	13,380
fotal	13,900	13,980	13,900	13,900	13,900	13,900	13,908	13,980	13,900	13,500	13,900 1	13,900	13,300 1	13,900	13,560	13,900' 1	13,900	13,960	13,909	13,900	13,900	13,300
(2) Daily Average Supply Amount. Jone 5 13,2	Amount 13,238	13,238	uat 13,238 13,238 13,238	13,238	13,238	13,238	13,238	13,238	13,238	13,238	1 822,51	13,238	13,238 1	13,238 1	13,238	13,238	13,238	13,238	13,23	13,238	13,238	13,238
5-5. Khlong Katha System Khlong Katha ¥TP: (Propomed)	Maximun Capacity = Raximun effective co Equivalent Daily av	Apacity = fective Daily a	Naxinus Capacity = Razinus Capacity (Quax) = Equivalent Daily ascrage denand(qda)	Quar) = and (Qda.)	13,980 ct 13,495 ct 16,381 ct	19,980 cu s/d (lucl. 3 % of treatheat loss) 19,495 cu s/d (ddc * 1.3) 10,381 cm s/d (Maximus Cay Water Supply Capacity/1.85)	21. 3 % of 2 * 1.3 3 max Ray	trestrent	loss]	ity/1.05)		i i i i i i i i i i i i i i i i i i i				P. Day						
(1) Daily Ave. Supply Capacity a. Chlong Katha Reservoir					10,900	18,980	10,900	10,900	10,500	10,900	10,900	10,300 10	10,300	10, 900	10,900 1	10,900 10	10,906	10,300	10.900	16, 900	19,300	10,980
Total		6	0	0	10,900	10,900	10,900	10,900	10, 900	10,300 1	16,900	10,900 1	10,500	10,900	10,900	10,900 10	10,300	19,500	10,380	10,900	10,908	10,306
(2) Daily Average Supply Amount Lose 3 Lome 4 Lone 5	Amount 0	000		999	1,679 982 7,720	1,725 1,019 7,636	1,774 1,057 7,549	1,812	1,851 1,131 7,398	1,392	1,335 1,211 7,235	1,979	2,039 1,292 7,050	2, 102 1, 332 6, 947	2,168 1,375 6,838	2,236 1,420 5,725	1,467	2,330 1,504 6,495	54 55 55 55 55 55 55 55 55 55 55 55 55 5	1.534	2,616 1,626 6,139	2,730 1,670 6,011
Total	0		0	0	10,331	10,381	10,381	10,381	10,381	10,381 1	10,381	10,381 10	10,381 14	19,381	10,381	10.281 10	10.281	76 485 47		107 0.	19 791	122 01

FRENCE FORSTOIL GALET CAPPLY ANOTHE (ALLETRALITE A)							********		*********	*******			47.000.00			THE PERSON NAMED IN	***********	SALES TO SECOND		***************************************		
Itea	1930	1881	1992	1993	1594	1995	1986	1997	1998	1999	2006	1002	2002	2003	1007	2002	2006	2007	2002	2002	2018	2013
8-4. Eag Neow Dan System Bang Neow Dan WTP: [Proposed]		Maximum Capacity = Maximum effective capacity (Qmax) = Equivalent Dalfy amerage demand(Qda)	spacity (9 erage dena	eax	21,000 c 20,429 ct 15,714 c	cu n/d (fa cu n/d (4d	n/d (incl. 3 % of treelment loss) n/d (Qda + 1.5) n/d (Maximus Bax Rater Supply Cap	f treatment Rater Sug	nt loss) pply Capa	treatment loss Rater Supply Capacity/1.055			 		1 P 1 1 2 4 8 8	i h b t t t		• • • • •		L 	1 1 1 1 1 1 1 1	i ! !
(i) Daily Are.Supply Capacity a.Bang Hess Das Reservoir b.Che Tra Reservoir	ri selit				8,909	8,900	8,900	8,990	8, 900	8,900	8,900	8,900	8, 306	6,900	8,990	8,900 s	8,300 7,500	8,300 · 7,600	3,900 7,606	8,900 7,500	7,690	5,998
Total	P	0	-	0	8,900	006'8	8,900	8,900	8,300	8 900	8,390	8,900	8,980	8,900	8,900	8,38	16,500	16,500	16,590	16,500	16,500	16,500
(1) Baily Average Supply Asount Lone 1 Lone 2 Lone 9 Lone 5	Amount 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000			371 285 1,331 792 5,699	403 314 1,512 811 5,435	1,634 830 5,169	465 370 1,785 851 5,004	195 195 1,877 872 4,835	\$27 423 1,978 893 4,663	560 451 2,065 915 4,486	\$95 480 2,160 937 4,304	643 519 2,190 949 4,176	693 560 2,221 962 4,641	745 603 7,254 875 3,899	890 668 2,289 989 3,750	855 695 2,325 1,004 10,832	904 741 2,353 1,015	951 789 2,382 1,027 10,566	233 2,412 1,439 10,425	1,358 890 2,443 1,652 10,280	1,103 943 2,476 1,065
Total	8	0	0	0	8,176	8,476	8,476	3,476	3,476	8,476	8,476	8,476	8,476	8,476	8,476	8,176	15,714	15,716	15,714	15,714	15, 714	15,714
8-5. Zam. 7 System Zone 7 47P: (Proposed)	Naxinus C. Naxinus el Lquiralen	Maximur Capacity = Maximur Capacity (Quax) = Squiralent Daily average desand(qda)	npacity (9 erage dena	sax = nd{qda}	17,800 cu 17,259 cu 13,276 cu	cu s/d [inc cu s/d (idd	(incl. 3 % of treatment loss) (eda # 1.3) (Warieuw Water Supply Aeount)	ir Supply	at loss) Amount}	1 1 1 1 1 1 1	t 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			i } i i i i i		: 1 1 8 8 8 8	: 	• • • • • • •	i i i i i i	; ; ; ; ; ;		
(1) Daily Ave. Supply Capacity a. Thlong to Yung Reservoir	nei ty ic		. * .		. :	21,400	21,400	21, 600	21,400	21,400	21,600	21,400	21,400	21,400	21,400	21,400	21,406	21,600	21,490	21,400	21,400	21,480
Total	0	9	0	=	0	21,400	21,400	21,400	21,900	21,400	21,400	21, 100	21, 600	21,400	21,400	21,460	21,408	21,600	21,400	21,400	21,430	21,400
(2) Daily Average Supply Asount Lone 7 Lone 5 (coareyed thru Khlong Katha System	Amount 0 0 System)	0 0	90	0 6	0.0	3,821	4,230	(822)	1,735	20 mg	5,184 2,455	3,597	5,136	5,464	5, 494	5,525 7,751	5,557	2,58!	5,611	5,540	5,659	5,700
Total	9	0	0		-	208	2,418	3,690	1,585	6,303	7,643	3,007	10,057	11,142	12,262	13,276	1,369	8 (8)	9,840	10,821	12,033	13,276
(3) Available Water for Thai Muang Resort	69	0	0	~		20,598	18,982	17,710	16,435	169,81	13,737	12, 393	11,343	10,256	5, 138	8,124	14,631	11, 11	11,769	10,579	9,357	8,124

Phuket Possible Water Supply Amount (Alternative 3)

C-1. Total of Possible Maler Supply Amount C-1. Total of Possible Maler Supply Amount Lone 1 0 0 0 0 285 314 316 Lone 3 0 0 0 0 0 285 314 316 Lone 5 11,723 12,195 18,292 18,161 11,492 11,637 Lone 6 0 0 0 0 0 0 382 1,031 1,631 Lone 7 0 0 0 0 1,231 1,532 13,694 Lone 7 0 0 0 0 0 1,231 1,532 1,634 Lone 8 0 0 0 0 1,331 1,532 1,634 Lone 9 0 0 0 0 1,331 1,532 1,634 Lone 1 0 2,438 1,162 1,162 1,162 1,634 Lone 1 0 0 0 0 0 0 0 0 Lone 2 0 0 0 0 0 0 0 Lone 2 0 0 0 0 0 0 0 Lone 3 0 0 0 0 0 0 0 Lone 5 0 0 0 0 0 0 0 Lone 6 0 0 0 0 0 0 0 Lone 7 0 0 0 0 0 0 0 Lone 7 1,543 1,162 1,162 1,163 10 0 Lone 7 0 0 0 0 0 0 Lone 8 0 0 0 0 0 0 Lone 9 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0 0 0 0 0 0 Lone 9 0 0 0 0 0 Lone 9 0	17 165 195 16 370 386 17 1,812 1,831 17 1,094 1,131 10 29,290 29,930 10 4,512 1,871 10 4,732 1,875 10 851 18,73 10 851 18,73 10 851 10,391 10 851 10,391 10 851 2,835		360 1,935 1,211 11,430 1,430 2,065 2,065 2,965 2,965 2,966 2,966			693 756 560 603 2,102 2,186 1,375 1,375 1,385 34,724 5,164 2,521 2,221 2,221 2,221 2,221 2,221 2,231 3,834 3,046	688 900 91 500 500 500 500 500 500 500 500 500 50	958 605 605 605 605 601 601 601 601 601 601 601 601 601 601	2,386 2,386 37,386 37,386 2,388 1,015 1,015 3,694	25, 158 2, 458 1, 543 38, 274 38, 274 2, 382 1, 027 1, 027 1, 027 1, 108	253 838 838 838 1,584 99,718 9,918 9,918 3,112 3,112	1,656 820 1,656 1,626 10,100 1,100 2,443 1,022 1,023 1,023 1,023 1,023 1,023 1,023 1,023 1,023
0 0 285 314 603 18.161 1.725 1.725 1.725 1.725 1.015 18.161 31.448 27.948 2.65 2.54 3.54 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	465 370 1,812 1,034 29,290 4,512 1,755 1,755 19,343 2,779		and the second of the second o				•		#60° 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	251, 1388 2, 456 1, 543 18, 274 2, 382 1, 102 1, 103 1, 108	293 2,534 1,564 39,778 810 2,610 1,039 1,039 1,039 1,139	1,656 850 1,626 1,626 1,626 851 1,032 1,132 1,032 1,132 1,132 1,132 1,132 1,132 1,132 1,132
0 0 225 314 60 316 60 60 225 314 60 60 60 60 60 60 60 60 60 60 60 60 60	465 370 1,094 29,290 4,512 1,785 19,343 2,779		and the second s						71.75 71.38	2, 455 1, 545 1, 545 1, 545 1, 651 1, 627 1, 102 1, 102 1, 103	25.52. 2,53.4 1,58.4 1,03.4 1,	1,950 2,515 1,626 (0,100 5,669 2,443 1,032 9,832 9,832 9,832
0 0 0 285 314 18,292 18,161 31,448 21,948 266 294 32 43,811 10,076 39,131 1,512 0 0 1,331 1,512 10,076 39,131 10,138 19,240 2,527 2,536 2,634 2,527 2,536 2,634 31,162 31,162 50,019 50,821 1,595 1,636 0 0 2,20 2,56 0 0 1,595 1,636 0 0 2,50 2,50 3,50 3,50 3,50 3,50 3,50 3,50 3,50 3	370 1,094 1,094 29,290 4,512 1,785 1,785 18,531 18,531 18,531 18,531 2,779		and the second second						751 2,380 1,504 37,384 2,584 5,584 1,015 1,015 1,05 1,05 1,05 1,05 1,05 1,	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23.17.55.4 39.27.9 39.27.9 11.03.9 3.11.5 3.11.5 3.11.5 3.11.5	2,515 1,626 (0,100 5,689 2,443 1,032 9,832 9,832 9,832
18,292 18,161 31,448 21,019 266 294 323 344 266 294 323 344 0 0 0 1,331 1,512 0 0 0 1,331 1,512 10,076 30,131 10,132 10,202 2,527 2,516 2,624 2,614 31,162 31,162 50,019 50,621 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,516 0 0 2,537 2,538 3,533 0 2,5417 2,885 3,541 2,	1,912 1,094 29,290 1,785 1,785 18,512		and the second of the second o						2,388 1,504 2,383 1,015	2, 15, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5	2,534 1,554 1,554 1,554 1,055 1,055 3,125	2,515 (0,100 (0,100 (0,100 2,443 1,032 9,832 9,832 9,832 9,832
13,232 13,161 31,448 21,316 256 224 323 354 0 0 382 11,015 0 0 0 0 3,621 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1,094 29,280 4,512 1,785 19,343 2,779		the property of the control of the				•••		27,384 2,584 2,584 1,015 1,015 3,034	3,255 3,255 1,027 1,027 1,038	39,178 39,178 810 810 2,412 1,039 1,039 3,125	1,626 (0,190 851 5,569 2,143 1,052 9,852 3,143
18,292 18,161 31,448 21,948 266 294 323 354 354 9 9 3,621 9 9 9 9 9 9 9 9 9	29,290 4,512 1,785 18,343 2,779	1	grant to the second grant				•		2,353 2,353 1,015	3, 511 2, 511 1,027 1,108 1,108	39,178 810 2,412 1,039 1,039 3,125	60,100 851 5,669 2,443 1,052 9,852 9,852 3,142
266 224 323 354 0 0 0 3,621 0 0 0 1,331 1,312 0 0 0 1,331 1,312 2,527 2,576 2,674 2,527 2,576 2,674 31,162 31,162 50,019 50,821 1,595 1,616 0 0 1,595 1,616 0 0 2,417 2,885 3,333 0 2,60 0 0 2,417 2,885 3,333 0 2,61 1,419 0 2,417 2,885 3,333 0	4,512 1,788 18,713 18,343		and the state of t	and the second					5,584 2,353 1,015 1,015 1,058 3,054	2,382 1,027 3,109	2, 640 2, 612 1,039 3,918 3,125	351 5,569 1,052 9,852 3,112 69,291
0 0 0 1,331 1,512 0 0 1,331 1,512 2,527 2,576 2,674 2,674 31,162 31,182 50,019 50,821 1,595 1,606 0 0 1,595 1,606 0 0 1,595 1,606 0 0 1,595 1,606 0 0 1,595 1,606 0 0 2,617 2,885 3,333 0 2,617 2,885 3,333 0 2,617 2,885 1,149	1,788 1,788 18,343 2,779	and the second	The second of the						5,584 2,353 1,015 10,058 3,094	5,611 1,027 1,027 9,987 9,109	5,640 1,039 1,039 3,125	5,669 1,052 9,852 9,112 3,112 69,291
0 0 1,331 1,512 10,076 30,731 10,138 10,240 2,527 2,536 2,634 2,674 31,162 31,162 50,019 50,621 [(A-1)-(0-1)] 0 0 0 2,30 2,56 0 0 1,595 1,636 0 0 1,595 1,636 0 0 1,595 1,636 0 0 2,417 2,885 3,333 0 2,417 2,885 3,333 0	1,785 18,343 2,779		The second of		4				2,353 1,015 10,058 3,094	2,382 1,027 5,987 3,109	2,412 1,039 9,918 3,125	2,443 1,052 9,852 3,142 3,142 69,291
10,076 19,131 10,135 19,240 2,527 2,576 2,624 2,674 31,162 31,162 59,019 59,821 339 0 0 0 2,00 256 0 0 0 2,417 2,885 3,353 0 2,417 2,885 3,353 0	10,343				1.0				1,015	1,027 5,987 3,109	1,039 9,918 3,125	3,852
10,016 19,131 10,133 19,249 2,527 2,576 2,624 2,674 31,162 31,162 30,019 50,621 308 339 0 0 2,30 2.56 0 0 1,593 1,636 0 0 1,763 8,511 (4,144) 0 2,417 2,885 3,353 0 2,417 2,885 3,453 0	18,343							_	3,058	3,108	3,918	9,852 3,142 69,291
2,527 2,576 2,624 2,674 31,162 31,162 59,019 50,621 308 339 0 0 2,30 2,66 0 0 1,599 1,636 0 0 1,763 8,511 (4,144) 0 2,417 2,885 3,353 0 2,617 2,885 3,483 0	2,779								3,034	3,109	3,125	3,142
31,162 31,182 50,019 50,821 [(A-1)-(C-1)] 230 250 0 230 256 0 0 1,593 1,636 0 0 909 945 0 7,763 8,511 (4,144) 0 2,417 2,885 3,353 0 969 1,149 0					1					:	66 450	69.231
(A-1)-(C-1)) 319 319 319 320 256 1,595 1,616 909 945 7,762 8,511 0 0 2,417 2,885 985 1,149	37 53,716 55,004	775 ac 4		53,025 61	6C, BTb 61,	61,161 62,281	281 63,295	929'99 9	65,747	66,837	200	
308 339 230 256 1,595 1,656 909 945 7,763 8,511 0 0 2,417 2,885 369 1,149												
25 230 256 3 1,503 1,557 1,595 1,636 4 909 945 5 10,135 13,252 7,763 8,511 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.0 0	0			~	0	65	0	0	•	6	~
1,501 1,557 1,595 1,636 4 0 0 909 945 5 10,135 15,252 7,763 8,511 6 0 0 0 0 0 7 0 0 2,417 2,885 8 0 989 1,149	0 0		e	-	•	0			ç	€EP	⇔	0
6 10,135 15,252 7,763 8,511 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0	0	€3	-	0	*	0	•	es.	0	0
5 10,135 13,252 7,763 8,511 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0		0	œ	-	0	-		0	0	c	Û
5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0		0	0	0	0	0.	6	c	•	€	2
7 0 6 2,417 2,885 8 0 0 969 1,149			50	0	٥	9	-	0	0	-	•	¢
8 0 0 969 1,149	0 0	_	0	=	-		-	6	0	-	0	0
	0 . 0		-	☞.		~	. 0		=	⇔.	e2.	0
į.	0		0		0			0	0	Û	=	-
	0			~	-	6		0	0	0	-	0
	0 0	0	-	. e		ج.	0	0	0	-	=	=
Total 11,638 15,614 14,944 16,494 (792) 0 0	0	0 0	0		-	=	0 163	<u>-</u>	•		· 👄	⇔

Phuket Posmible Nater Supply Amount (Alternative J)

1tem 1990	1990	1981	1992	1993	1691	1995	1396	1997	1998	56C)	2000	7901	2002	2003	2001	5002	2008	2002	5002	2003	2010	2011
D. Water Transmission Cost. D. Baugai System a. Ear Water Transporary Penging (Rblong Ban Yai) Qda- Penp Characteristics Bead No. of Operating Pump	18 Ban Ya	(4i) Quaz Read	6,224 50 8,	6,224 Dia-	6,224 308	25,2 6,0 10,0 10,0 10,0 10,0 10,0 10,0 10,0	6,224 10.0 cl	5,224 6,224 10.0 cm */*ib,	6,224 Notor 3	6,234 150 Es	1,224 6,224 150 Ev. Bo.	12 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	6,224 nits 3	\$22°9	6 25 35 35 35 35 35 35 35 35 35 35 35 35 35	22.	£7. 27.	10 63 63 63	52.23	£77. 3	• •	
b. Clear Water for Come 10 4 11 Pusp Characteristics No.of Operat's Pusp	9,983	9,983 12,502 12,664 Head 120 [These figure shots 2	12,502 12,664 1 Wead 120 m, [these figure shows b		12,809 300 m age chara	809 12,913 300 km, q = characteristics	13,018 5.3 cr 5 of the	018 11,122 13,227 5.3 cu s/min, Notor f the clear water and i	13,227 Kotor er and thu	2,766 12,809 12,913 13,018 13,122 13,227 13,331 13,436 Dia. 300 km, q = 5.3 cm m/min, Notor 160 Km, No. be average characteristics of the clear water and the booster pumps. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	13.436 v. 80. pueps.1	13,540 13,467 3 anits	3 anits 3	13,397	33.11.	12,269	13,211	13,152	13,096	13,043	12,994	15,517
D-2 Whing Tasha System a. Clear Maler for Zone 3, 4 5 Fur Characteristics No.of Operal's Purp	0 0	Next 0	0 0 0 #		10,381 200 s	10,381	10,331 5.2 c	10,381 cs s/sir,	10,381 Woter	16,381 40 Rs	10,381 fr, 40.	10,381 10,381 3 units 3 3 3 3		10,381 10,381	10,381		10,381	10,381	10,381	10,381	381	10,381
P.3 Bang Secw Dam System a. Clear Water (or Lowe 1,1,2,8,9 & 5 Pump Characteristics No.of Operal's Pump	.	Sead O	တည့် လ ကို	919.	9 00 00 00 00 00 00 00 00 00 00 00 00 00	8,436 4 4 ± 2	8 4.3 2.4 2.4	2,436 3,436 3,436	8,476 Notor 2	8,476 60 R	476 8,476 60 KY, NO. 2	3,176	16 8, k76 37 woits 2	8,176	3,476	3, 475	15,218	15,718	15,734	15, 21,	3 3	13,73
D-4 Zone T System b. Raw Water From Ralong to Yong From Characteristics Bo.of Operat's Pump		Mend 0	- *	, 9ia.	300 8 9 9 9	278 · · · · · · · · · · · · · · · · · · ·	2,539 5.7 c	539 3,875 5.7 cu m/min,	5,235 Holor 1	6,618 40 %	618 8,025 40 Kw, No. I · 2	57 - 68 - 32 - 32 - 32 - 32 - 32 - 32 - 32 - 3	10,560 anits 2	11,695	12,875	13,340	7,737		10,122	60 60 60 60 60 60	12,635	13,941
b. Clear Rater for Lose ? & 5 Pup Characteristics No. of Operat's Pusp		Besid 0	0 \$ 0	0 1. Dia.	0 360 mm, 0	362 2 b 'm	2,418 5.4 cu 1	3,698 n m/min,	4,985 Notor	6,303 50 K	303 7,643 50 Km, No. 1 2	9,007	10,057 units	11,142	12,262	13,276		5,439	9,640	10,821	12,055	13,278
9-5 Energy Reguirement Total Output (Kv) Energy Consumption (Ksh/day)	328 5,951	180	930 6,375	936	1,170	1,179	1,269	1,250	1,260	1,269	1,350	1,350	1,350	1,340	1,440	15,077	1,410	1,410	1,410	15,410	1,050	1,050
0-6 Crergy Cost (Saht 1988) Desand Charge Reergy Charge	2,272	1,319	2,555	2,556	3,215	3,215	3,462	3,462	3,462	3,462	3,710	3,710	3,710	3,957	3,957	3,957	3,875	3,875	3,875	3,875	2,885	2,885
[ota]	3,152	4,165	5,418	5,433	7,874	8,089	8,397	8,708	9,025	9,346	9,576	9,836	10, 115	10,288	10,518	10,726	10,292	825,01	10,772	11,023 Cotal Cost	9,089	9,332 191,753

liem 1990 1991 1992 1893 1994 1995 1996 1997 1958 1999 2060 2061 2062 2063 2064 2065 2067 2068 2069 2010 2011	1990	1990 1991 1992	1992	1993	1994	1995	1996	1661	1958	1999	2000	2001	2002	2003	2004	2002	\$002	2307	2008	2008	2010	2011
E. Treatment Chemical Cost Total Treatment Anomat [Oda en e/4]	it (ods co	79								5 5 1 1 1 1 1				* · · · · · · · · · · · · · · · · · · ·	1							
24,938 24,938	24,938 24,938 31,162	24,938		31,162 50,019	50,019	50,821 52,437 53,710 55,004 56,122 57,661 59,026 50,075	52,437	51,710	55,004	56,122	57,662	53,026	60,075	191'19	61,161 62,231	63,235	54,626	197, 20	56,337	65,747 66,897 68,079	162,63	78,533
מבפונסו המפר ומסור	(9)	(97 (91 621	129	129	398	1,012 - 1,045	1,045	1,070	1,098	1,096 1,122 1,149 1,176 1,197	1,143	1,176	1,197	1,218	1,241	1,261	1,287	1,316	1,333	1,218 1,241 1,261 1,287 1,310 1,323 1,356 1,389 1,405	1,386	1,40
	38, C. 1stO. IstO.													•						Total Cost		23,888

Energy Costs are based on the 1988 EPN's charge cates as follows:
Deand Charge = Baht 229 KN/for I 2 ao/year 1 Motor Output (Kv)
Energy Charge = Baht 1.23 (Kwh r Energy Consumption(Kwh/dáy) x 365 days/year
Chemical Cost
Alom (Average Bosage, 5 ag/1) : Baht 1.35 /Ag
Line (Average Dosage, 2.5 ag/1) : Baht 1.25 /Ag
Cl. gas (Average Dosage, 2.3 ag/1) : Baht 15.60 /Ag

A-9-1-18

APPENDIX A-11-1

Details of Dam Construction Cost Estimates

Table All-1-1 Breakdown of Dam Construction Cost

Location ; Bang The Sung

Total	Amount *1,000B	72	-			50,280								362, 806				8, 126				93, 038	514, 321
Local Currency	Amount *1,000B	21.		3, 288	10,083	13, 371			6,036	78, 249	8,408	17,241	21, 986	131, 920		1,449	289	1, 738		27, 136	5, 427	32, 563	179,664
Local	Unit Cost	8, 000		Ŧ	30					277	6	21				322				1, 911, 000			
Currency	Amount *1,000B	0		8, 759	28, 140	36, 909			15,092	33,478	42,688	101, 147	38, 481	230,886		5, 324	1,064	6, 388	e Sign	50, 396	10,079	60, 475	334,657
Foreign	Unit Cost	0		11	84		***		28	118	46	123				1, 183				3, 549, 000			
	Unit	g		€	₩3				ш3	E 33	E 33	E				Œ				m3/s			
	Quantity	(305*20%)		783, 000	335, 000				539, 000	283,000	924,000	821,000	(a+p+c+d) *20%			4, 500	a*20%			14	a*20%		
	Description	1. Site Cleaning		 Excavation Normal Soil 	b) Rock	Sub-Total		3. Embankment	a) Core	b) Filter Zone	c) Transition	d) Rock	e) Miscellaneous	Sub-Total	4. Foundation	a) Treatment	b) Miscellaneous	Sub-Total	5. Spillway, intake	a) Structure	b) Miscellaneous	Sub-Total	6. Grand Total

Location ; Khlong Katha

Total Amount	*1,0008	18, 454			318, 238	10,112	112, 693	459, 541
Currency	*1,000B	1, 205 3, 702 4, 908	5, 292	15, 120 19, 278	115, 668	360	32,869 6,573 39,442	162, 226
	5, 600	30	11.	2.5	397		1, 911, 000	
Currency	*1,000B	3, 214 10, 332 13, 546	13, 230	837, 422 33, 704	202, 570	7, 949	61, 043 12, 268 73, 251	297, 316
Foreign Unit	Cost	11 84	28	46 123	 		3, 549, 000	
	Unit ha	E E	E E	0 C C C C C C C C C C C C C C C C C C C	F	•	m3/s	
	Quantity 8 (40ha*20%)	287, 000 123, 000		(a+b+c		%02*e	17 a*20%	
	Description 1. Site Cleaning	 Excavation Normal Soil Rock Sub-Total 	3. Embankment a) Core h) Filter 7one	c) Transition d) Rock e) Miscellaneous	Sub-Total 4. Foundation 2) Treatment	b) Miscellaneous Sub-Total		6. Grand Total

Location ; Bang Nieo Dam

Total Amount *1,000B	32, 261	94, 666	10,835	112, 692	250, 594
Local Currency Unit Amount Cost *1,000B 5,600 140	2, 108 6, 471 8, 579	36, 289 7, 257 43, 546	1, 932 386 2, 318	32, 869 6, 573 39, 442	94,025
Local Unit Cost 5,600	30	32	322	1, 911, 000	
Currency Amount *1,000B	5, 622 18, 060 23, 682	42, 600 8, 520 51, 120	7,098 1,419 8,517	61,042 12,208 73,250	156, 569
Foreign Unit Cost	□ 청	88	1, 183	3, 549, 000	
Unit	# # S	<u>8</u>	6	m3/s	
Quantity 25 (50ha*50%)	502, 000 215, 000	1, 127, 000 a*20%	6,000 a*20%	17 a*20%	
Description 1. Site Cleaning	2. Excavation a) Normal Soil b) Rock Sub-Total	3. Embankmenta) Embankmente) MiscellaneousSub-Total	4. Foundationa) Treatmentb) MiscellaneousSub-Total	5. Spillway, Intake a) Structure b) Miscellaneous Sub-Total	6. Grand Total

Location ; Khao Che Tra

			Foreign	Currency	Local (Mirency	Total
			Unit	Amount	Unit	Amount	Amount
Description	Quantity	Unit	Cost	*1,000B	Cost	*1,000B	*1,000B
1. Site Cleaning	18 (60ha*30%)	ha	0	0	8, 000	144	144
 Excavation Main Dam 		ů.				1	
al Hammal Coll	220, 500	m3	11	2, 470	4	926	
a) Normal Soilb) Rock	94, 500	113 113	84	7, 938	30	2, 844	٠,
Sub-Total	34,000	. шу	U	10, 408	VV	3, 770	14.178
GID TOTAL			-	10, 400		J, 110	14, 110
2) Suddle Dam			* *	1 1			
a) Normal Soil	21, 350	m3	. 11	239	4	89	
b) Rock	9, 150	m3	84	768	30	275	
Sub-Total	,		• • • • • • • • • • • • • • • • • • • •	1,007	• • •	364	1, 371
							2, 4.2
Total	•		1 1 2 2 5	11, 415		4, 134	14, 196
			in the second				23,411
3. Embankment		• .		100			
1) Main Dam							
a) Core	684,000	m 3	28 💉	19, 152	11	7, 660	
b) Filter Zone	60,800	шЗ	118	7, 192	277	16, 811	
c) Transition	. 0	m 3	46	0	9	0	
d) Rock	15, 200	m3	123	1,872	21	319	
e) Miscellaneous	(a+b+c+d) *20%			5, 643		4, 958	*
Sub-Total	•			33,859		29, 748	63,607
2) Suddle Dam			•				•
a) Core	34, 700	p3	28	971	11	388	
b) Filter Zone	3, 100	m3	118	366	277	857	
c) Transition	0	m3	46	0	9	0	
d) Rock	700	m3	123	86	21	14	
e) Miscellaneous	(a+b+c+d) *20%			284		251	
Sub-Total				1, 707		1, 510	3, 217
Total				95 555		01 010	00.001
Iotai			4 14	35, 566		31, 258	66, 824
4. Foundation							
a) Treatment	8, 100	n	1, 183	9, 582	322	2, 608	
b) Miscellaneous	a*20%	\$G	1, 100	1, 916	024	521	
Sub-Total	6,400			11, 498		3, 129	14, 627
0.00 1010.1	•		€	11, 400		J, 123	14, 021
5. Spillway, Intake			** ***	er er er	· 1.		
a) Structure	14	m3/s	3, 549, 000	50, 396 1,	911,000	27, 136	
b) Miscellaneous	a*20%	/-	-, -, -, -, -, -, -, -, -, -, -, -, -, -	10,079	4401 VVV	5, 427	
Sub-Total				60, 475		32, 563	93, 038
•	÷						+4,44
6. Grand Total	<u> </u>			118, 953	·	71, 228	190, 182
-							

Location ; Khlong Lo Young

Total Amount *1,000B	47,261		264, 457	11,016	151, 350	474,755
urrency Amount *1,000B	3,087 9,482 12,569	4, 402	6, 133 12, 579 16, 014 96, 087	1,964 392 2,356	44, 144 8, 828 52, 972	164, 656
Local Currency Unit Amoun Cost *1,000 5,600	30	11 277	21	322	1, 911, 000	
Currency Amount *1,000B	8, 232 26, 460 34, 692	11,004 24,370	31, 139 73, 797 28, 061 168, 370	7, 216 1, 443 8, 659	81, 982 16, 396 98, 378	310, 100
Foreign Unit Cost	11 84	28 118	123	1, 183	3, 549, 000	
Unit ha	E E	3 3 3	8 8 8 8	E	m3/s	
Quantity 120 (120*100%)	735, 000 315, 000	393, 000 206, 000	674,000 599,000 (a+b+c+d)*20%	6, 100 a*20%	23 a*20%	
Description 1. Site Cleaning	2. Excavation a) Normal Soil b) Rock Sub-Total	3. Embankment a) Core b) Filter Zone	c) Transition d) Rock e) Miscellaneous Sub-Total	4. Foundation a) Treatment b) Miscellaneous Sub-Total	5. Spillway, Intake a) Structure b) Miscellaneous Sub-Total	6. Grand Total

APPENDIX A-17-1

Alternatives for Debt Service, Cash Flow and Unit Cost of Water

Table A17-1-1 Debt Services (Alternative 1)

====	Year	Capital	Interest	Total annual repayment	Balance of Capital
:					
41	1990	0	4,393	4,393	62,751
	1991	0	9,420	9,420	134,578
	1992	0	11,145	11,145	159,212
. 47 t. 14 - 1	1993	0	13,061	13,061	186,583
. 81	1994	0	26,009	26,009	371,557
.:.	1995	14,786	51,969	66,755	742,417
. •	1996	15,821	63,946	79,767	913,517
Lie k,	1997	16,928	62,839	79,767	897,696
	1998	18,113	61,654	101,923	880,768
	1999	19,381	60,386	101,923	862,654
:	2000	42,894	59,029	101,923	843,273
4	2001	45,896	56,027	101,923	800,379
	2002	49,109	52,814	101,923	754,483
	2003	52,546	49,376	101,923	705,374
	2004	56,225	45,698	101,923	652,828
	2005	60,160	41,762	101,923	596,603
3 -	2006	64,372	37,551	101,923	536,442
	2007	68,878	33,045	101,923	472,071
	2008	73,699	28,224	101,923	403,193
: .	2009	78,858	23,065	101,923	329,494
	2010	43,583	17,544	61,128	250,636
·. ·	2011	46,634	14,494	61,128	207,052
	2012	49,898	11,229	61,128	160,418
	2013	53,391	7,736	61,128	110,520
٠	2014	57,129	3,999	61,128	57,129
ب	Total	928,303.0	846,413.9	1,819,027.9	

A-17-1-1

Table A17-1-2 Debt Services (Alternative 2) for Foreign Portion

Table A17-1-2 Debt Services (Alternative 2) for Local Portion

(Unit : Baht x 1000)

(Unit : Baht x 1000)

			****	计算点 计图图 克拉克 化氯化	Garage and per de		5 2 4 7 7 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		****
Year	Capital	Interest	Total Annual Repayment	Balance of Capital	Year	Capital	Interest	Total Annual Repayment	Balance of Capital
1990	0	66	66	2,431	1990	0	4,222	4,222	60,320
1991	. 0	82	82	3,039	1991	0	9,208	9,208	131,539
1992	. 0	525	525	19,448	1992	0	9,783	9,783	139,764
1993	. 0	1,017	1,017	37,680	1993	0	10,423	10,423	148,903
1994	. 0	4,387	4,387	162,471	1994	0	14,636	14,636	209,086
1995	0	11,142	11,142	412,664	1995	8,320	23,083	31,403	329,753
1996	. 0	14,528	14,528	538,063	1996	8,903	26,734	35,637	381,920
1997	0	14,528	14,528	538,063	1997	9,526	26,111	35,637	373,017
1998	0	14,528	14,528	538,063	1998	10,193	25,444	42,846	363,490
1999	0	14,528	14,528	538,063	1999	10,906	24,731	42,846	353,297
2000	20,643	14,528	35,171	538,063	2000	18,879	23,967	42,846	342,391
2001	21,200	13,970	35,171	517,420	2001	20,200	22,646	42,846	323,512
2002	21,773	13,398	35,171	496,220	2002	21,614	21,232	42,846	303,312
2003	22,361	12,810	35,171	474,447	2003	23,127	19,719	42,846	281,697
2004	22,964	12,206	35,171	452,087	2004	24,746	18,100	42,846	258,570
2005	23,584	11,586	35,171	429,122	2005	26,479	16,368	42,846	233,823
2006	24,221	10,950	35,171	405,538	2006	28,332	14,514	42,846	207,345
2007	24,875	10,296	35,171	381,317	2007	30,315	12,531	42,846	179,013
2008	25,547	9,624	35,171	356,442	2008	32,437	10,409	42,846	148,697
2009	26,236	8,934	35,171	330,895	2009	34,708	8,138	42,846	116,260
2010	26,945	8,226	35,171	304,659	2010	14,181	5,709	19,890	81,552
2011	27,672	7,498	35,171	277,714	2011	15,174	4,716	19,890	67,371
2012	28,420	6,751	35,171	250,041	2012	16,236	3,654	19,890	52,197
2013	29,187	5,984	35,171	221,622	2013	17,372	2,517	19,890	35,961
2014	29,975	5,196	35,171	192,435	2014	18,589	1,301	19,890	18,589
2015	30,784	4,386	35,171	162,460	~ a ~ g H = 1			~~~~~~	******
2016	31,615	3,555	35,171	131,676	Total	390,240	359,896	764,554	
2017	32,469	2,702	35,171	100,061	555 ₂ 545		建筑设等等的设备 医数	*******	*********
2018	33,346	1,825	35,171	67,592					1
2019	34,246	. 925	35,171	34,246					
Total	538,063	240,679	778,742		(·	alanti,		* * * * * * * * * * * * * * * * * * *	

Table A17-1-2 Debt Services (Alternative 2)

(Unit : Baht x 1000)

			265566565656	
and the second s	,		Total Annual	Balance of
Year	Capital	Interest	Repayment	Capital
	1 min was am am am am am am am am am am am am am		وي بيناه څخه چې ويو. وي د خصه وي وي وي د خو خود وي	والمراجع ومن فيدا فيل ويوا وين فيدا فيد من ويد.
1990	0	4,288	4,288	62,751
1991	0	9,290	9,290	134,578
1992	0	10,309	10,309	159,212
1993	0	11,441	11,441	186,583
1994	0	19,023	19,023	371,557
1995	8,320	34,225	42,545	742,417
1996	8,903	41,262	50,165	919,983
1997	9,526	40,639	50,165	911,080
1998	10,193	39,972	57,374	901,553
1999	10,906	39,259	57,374	891,360
2000	39,522	38,495	78,017	880,454
2001	41,401	36,616	78,017	840,932
2002	43,387	34,630	78,017	799,531
2003	45,488	32,529	78,017	756,144
2004	47,711	30,306	78,017	710,656
2005	50,063	27,954	78,017	662,946
2006	52,553	25,464	78,017	612,883
2007	55,190	22,826	78,017	560,330
2008	57,984	20,033	78,017	505,139
2009	60,945	17,072	78,017	447,155
2010	41,126	13,934	55,060	386,210
2011	42,846	12,214	55,060	345,085
2012	44,655	10,405	55,060	302,238
2013	46,559	8,501	55,060	257,583
2014	48,563	6,497	55,060	211,024
2015	30,784	4,386	35,171	162,460
2016	31,615	3,555	35,171	131,676
2017	32,469	2,702	35,171	100,061
2018	33,346	1,825	35,171	67,592
2019	34,246	925	35,171	34,246
Total	928,303	600,576	1,543,296	and their their days games games games come about many sector dates.

Table A17-1-3 Debt Services (Alternative 3) for Foreign Portion

Table A17-1-3 Debt Services (Alternative 3) for Local Portion

(Unit : Baht x 1000)

(Unit : Baht x 1000)

Year	Capital	Interest	Total Annual Repayment	Balance of Capital		Year	Capital	Interest	Total Annual Repayment	Balance of Capital
1990	0	66	66	2,431		1990	0	3,318	3,318	30,160
1991	0	82	82	3,039		1991	0	7,235	7,235	65,770
1992	. 0	525	525	19,448		1992	٥	7,687	7,687	69,882
1993	0	1,017	1,017	37,680		1993	4,179	8,190	12,369	74,452
1994	0	4,387	4,387	162,471		1994	4,639	11,040	15,679	100,364
1995	0	11,142	11,142	412,664	e de la companya de l	1995	5,149	17,166	22,315	156,059
1996	. 0	14,528	14,528	538,063		1996	11,396	19,927	31,323	181,153
1997	0	14,528	14,528	538,063		1997	12,650	18,673	31,323	169,757
1998	0	14,528	14,528	538,063		1998	14,041	17,282	31,323	157,107
1999	. 0	14,528	14,528	538,063		1999	17,394	15,737	33,132	143,066
2000	20,643	14,528	35,171	538,063		2000	19,308	13,824	33,132	125,672
2001	21,200	13,970	35,171	517,420		2001	21,432	11,700	33,132	106,364
2002	21,773	13,398	35,171	496,220		2002	23,789	9,343	33,132	84,932
2003	22,361	12,810	35,171	474,447		2003	14,540	6,726	21,266	61,143
2004	22,964	12,206	35,171	452,087		2004	16,139	5,126	21,266	46,603
2005	23,584	11,586	35,171	429,122		2005	17,915	3,351	21,266	30,464
2006	24,221	10,950	35,171	405,538		2006	3,755	1,380	5,135	12,549
2007	24,875	10,296	35,171	381,317		2007	4,168	967	5,135	8,794
2008	25,547	9,624	35,171	356,442		2008	4,626	509	5,135	4,626
2009	26,236	8,934	35,171	330,895						
2010	26,945	8,226	35,171	304,659		Total	195,120	179,181	374,301	•
2011	27,672	7,498	35,171	277,714	* * *	******	*****	*********	J-548-274 H 25-44	2 10 10 10 10 10 10 10 10 10 10 10 10 10
2012	28,420	6,751	35,171	250,041	٠	* *			n de de la companya d	,
2013	29,187	5,984	35,171	221,622						•
2014	29,975	5,196	35,171	192,435				4		
2015	30,784	4,386	35,171	162,460						
2016	31,615	3,555	35,171	131,676						
2017	32,469	2,702	35,171	100,061					e e e e e e e e e e e e e e e e e e e	
2018	33,346	1,825	35,171	67,592					1	
2019	34,246	925	35,171	34,246	. 7			÷.		
Total	 538,063	240,679	778,742			• • •			ener og kerner i Storigen €	

Table A17-1-3 Debt Services (Alternative 3)

(Unit : Baht x 1000)

				ا من من الله الله الله الله الله الله الله الل	
	Year	Capital	Interest	Total Annual Repayment	Balance of Capital
toga et G	1990	0	3,383	3,383	32,591
4.7	1991	. •	7,317	7,317	68,809
+ 5	1992		8,212	8,212	89,330
4 - 5 3 /	1993	4,179	9,207		112,132
	1994	4,639		20,065	262,835
1.7	1995	5,149	28,308	33,457	568,723
	1996	11,396	34,455	45,851	719,216
X+12-1	1997	12,650	33,201	45,851	707,820
14 J. M	1998	14,041		45,851	695,170
1 4. 4	1999	17,394	30,265	47,659	681,129
	2000	39,951	28,352	68,302	663,735
1 to 1	2001	42,632	25,670	68,302	623,784
	2002	45,562	22,740	68,302	581,152
	2003	36,900	19,536	56,436	535,590
	2004	39,104	17,333	56,436	498,690
	2005	41,499	14,937	56,436	459,586
	2006	27,976	12,330	40,306	418,087
	2007	29,043	11,263	40,306	390,111
4	2008	30,173	10,133	40,306	361,068
	2009	26,236	8,934	35,171	330,895
	2010	26,945	8,226	35,171	304,659
	2011	27,672	7,498	35,171	277,714
	2012	28,420	6,751	35,171	250,041
	2013	29,187	5,984		221,622
	2014	29,975	5,196	35,171	192,435
	2015	30,784	4,386	35,171	162,460
	2016	31,615	3,555	35,171	131,676
•	2017	32,469	2,702	35,171	100,061
	2018	33,346	1,825	35,171	67,592
	2019	34,246	925	35,171	34,246
	Total	733,183	419,860	1,153,043	

Table A17-1-4 Debt Services (Alternative 4) for Foreign Portion

Table A17-1-4 Debt Services (Alternative 4)
for Local Portion

(Unit : Baht x 1000)

生代有电 证:	2 年 村 和 原 平 必 年 2	*******	美国国际部署 拉拉德国的加州 亚特尔			(rt st) (s) (rt 3m m	***		*****	4 x in (a c; f) H m n = 54 ;
Year	Capital	Interest	Total Annual Repayment	Balance of Capital		Year	Capital	Interest	Total Annual Repayment	Balance of Capital
1990	0	94	94	3,473		1990	. 0	3,260	3,260	29,639
1991	0	117	117	4,342		1991	0	7,163	7,163	65,118
1992	0	750	750	27,783		1992	0	7,229	7,229	65,715
1993	0	1,453	1,453	53,829		1993	3,930	7,301	11,231	66,377
1994	0	6,267	6,267	232,102		1994	4,362	7,238	11,600	65,798
1995	0	15,917	15,917	589,521		1995	4,842	7,497	12,339	68,156
1996	0	20,754	20,754	768,662		1996	6,016	7,336	13,352	66,687
1997	0	20,754	20,754	768,662	15.	1997	6,678	6,674	13,352	60,670
1998	0	20,754	20,754	768,662		1998	7,413	5,939	13,352	53,992
1999	0	20,754	20,754	768,662		1999	8,430	5,124	13,554	46,579
2000	29,490	20,754	50,244	768,662		2000	9,357	4,196	13,554	38,149
2001	30,286	19,958	50,244	739,172	-	2001	10,387	3,167	13,554	28,792
2002	31,104	19,140	50,244	708,886	. :	2002	11,529	2,025	13,554	18,405
2003	31,944	18,300	50,244	677,782		2003	1,639	756	2,395	6,876
2004	32,806	17,438	50,244	645,838		2004	1,819	576	2,395	5,238
2005	33,692	16,552	50,244	613,032		2005	2,019	376	2,395	3,419
2006	34,602	15,642	50,244	579,340		2006	419	154	573	1,399
2007	35,536	14,708	50,244	544,739		2007	465	108	573	981
2008	36,495	13,748	50,244	509,203	:	2008	516	57	573	516
2009	37,481	12,763	50,244	472,708						
2010	38,493	11,751	50,244	435,227		Total	79,820	76,176	155,996	
2011	39,532	10,712	50,244	396,734	-	************	B 医	*********	*******	
2012	40,599	9,644	50,244	357,202			1.50	100		
2013	41,696	8,548	50,244	316,603				4.		
2014	42,821	7,423	50,244	274,907		7	**		. 1.1	
2015	43,977	6,266	50,244	232,086		· .			• 111, 14	
2016	45,165	5,079	50,244	188,109		9		4 4	i di di	
2017	46,384	3,859	50,244	142,944						
2018	47,637	2,607	50,244	96,560					F. 1	
2019	48,923	1,321	50,244	48,923			\$.			
Total	768,662	343,828	1,112,490				1 +			

Table A17-1-4 Debt Services (Alternative 4)

(Unit : Baht x 1000)

1114 1 2114			(Unit : Bah	t x 1000)
Year	Capital	Interest	Total Annual Repayment	Balance of Capital
1990	0	3,354	3,354	33,112
1991	0	7,280	7,280	69,460
1992	0	7,979	7,979	93,498
1993	3,930	8,755	12,685	120,206
1994	4,362	13,504	17,867	297,900
1995	4,842	23,414	28,256	657,677
1996	6,016	28,089	34,106	835,349
1997	6,678	27,428	34,106	829,332
1998	7,413	26,693	34,106	822,654
1999	8,430	25,878	34,308	815,241
2000	38,847	24,950	63,797	806,811
2001	40,673	23,125	63,797	767,964
2002	42,633	21,165	63,797	727,291
2003	33,582	19,057	52,639	684,659
2004	34,625	18,014	52,639	651,076
2005	35,711	16,928	52,639	616,451
2006	35,020	15,796	50,816	580,740
2007	36,001	14,816	50,816	545,719
2008	37,011	13,805	50,816	509,719
2009	37,481	12,763	50,244	472,708
2010	38,493	11,751	50,244	435,227
2011	39,532	10,712	50,244	396,734
2012	40,599	9,644	50,244	357,202
2013	41,696	8,548	50,244	316,603
2014	42,821	7,423	50,244	274,907
2015	43,977	6,266	50,244	232,086
2016	45,165	5,079	50,244	188,109
2017	46,384	3,859	50,244	142,944
2018	47,637	2,607	50,244	96,560
2019	48,923	1,321	50,244	48,923
Total	848,483	420,003	1,268,486	

Table A17-1-5 Debt Services (Alternative 5) for Foreign Portion

Table A17-1-5 Debt Services (Alternative 5) for Local Portion

dear	Capital	Interest	Total Annual Repayment	Balance of Capital	Year	Capital	Interest	Total Annual Repayment	Balance Capital
1990	0	94	94	3,473	1990	0	6,521	6,521	59,278
1991	0	117	117	4,342	1991	0	14,326	14,326	130,236
1992	. 0	750	750	27,783	1992	0	14,457	14,457	131,429
1993	. 0	1,453	1,453	53,829	1993	7,860	14,603	22,463	132,754
1994	0	6,267	6,267	232,102	1994	8,724	14,475	23,200	131,595
1995	0	15,917	15,917	589,521	1995	9,684	14,994	24,678	136,312
1996	. 0	20,754	20,754	768,662	1996	12,033	14,671	26,704	133,373
1997	0	20,754	20,754	768,662	1997	13,356	13,347	26,704	121,340
1998	0	20,754	20,754	768,662	1998	14,826	11,878	26,704	107,984
1999	0	20,754	20,754	768,662	1999	16,860	10,247	27,107	93,158
2000	29,490	20,754	50,244	768,662	2000	18,714	8,393	27,107	76,298
2001	30,286	19,958	50,244	739,172	2001	20,773	6,334	27,107	57,584
2002	31,104	19,140	50,244	708,886	2002	23,058	4,049	27,107	36,811
2003	31,944	18,300	50,244	677,782	2003	3,278	1,513	4,790	13,753
2004	32,806	17,438	50,244	645,838	2004	3,638	1,152	4,790	10,475
2005	33,692	16,552	50,244	613,032	2005	4,038	752	4,790	6,837
2006	34,602	15,642	50,244	579,340	2006	837	308	1,145	2,799
2007	35,536	14,708	50,244	544,739	2007	930	216	1,145	1,961
800	36,495	13,748	50,244	509,203	2008	1,032	113	1,145	1,032
2009	37,481	12,763	50,244	472,708					
2010	38,493	11,751	50,244	435,227	Total	159,641	152,351	311,992	
2011	39,532	10,712	50,244	396,734					*****
2012	40,599	9,644	50,244	357,202		i,			
2013	41,696	8,548	50,244	316,603					
2014	42,821	7,423	50,244	274,907					
015	43,977	6,266	50,244	232,086				# # # # # # # # # # # # # # # # # # #	
016.	45,165	5,079	50,244	188,109				Alter.	
017	46,384	3,859	50,244	142,944					
018	47,637	2,607	50,244	96,560				the first of the second	
019	48,923	1,321	50,244	48,923					

Total 768,662 343,828 1,112,490

Table A17-1-5 Debt Services (Alternative 5)

===					
	•		S	Total Annual	Balance of
	Year	Capital	Interest	Repayment	Capital
	1990	0.	6,614	6,614	62,751
	1991	0	14,443	14,443	134,578
	1992	0	15,207	15,207	159,212
1.	1993	7,860	16,056	23,916	186,583
	1994	8,724	20,742	29,466	363,697
	1995	9,684	30,911	40,595	725,833
	1996	12,033	35,425	47,458	902,035
	1997	13,356	34,101	47,458	890,002
	1998	14,826	32,632	47,458	876,646
÷	1999	16,860	31,001	47,861	861,820
1	2000	48,204	29,147	77,351	844,960
	2001	51,059	26,292	77,351	796,756
	2002	54,162	23,189	77,351	745,697
	2003	35,221	19,813	55,034	691,535
	2004	36,444	18,590	55,034	656,314
	2005	37,730	17,304	55,034	619,869
:	2006	35,439	15,950	51,389	582,139
	2007	36,465	14,924	51,389	546,700
- 15 	2008	37,527	13,862	51,389	510,235
	2009	37,481	12,763	50,244	472,708
	2010	38,493	11,751	50,244	435,227
+ J	2011	39,532	10,712	50,244	396,734
	2012	40,599	9,644	50,244	357,202
	2013	41,696	8,548	50,244	316,603
	2014	42,821	7,423	50,244	274,907
	2015	43,977	6,266	50,244	232,086
	2016	45,165	5,079	50,244	188,109
	2017	46,384	3,859	50,244	142,944
	2018	47,637	2,607	50,244	96,560
	2019	48,923	1,321	50,244	48,923
	Total	928,303	496,179	1,424,482	

Table A17-1-6 Projected Cash Flow at Current Price

Cash Inflow Government Contribution Capital Contribution Laon Local Loan Foreign Loan				1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2005
mment Contribution apital Contribution ccal Loan							; ; ; ;	******				#	·			
Apital Contribution ocal Loan oreign Loan								-								
ocal Loan oreign Loan	o	o	0	4,040	4,484	4,977	6,327	7,023	7,796	8,923	9.905	10.994	12 206	2 076	200	6
Local Loan Foreign Loan	33,112	38,165	26,501	30,918	220,764	454,745	244,585		•				1	5	t)c.17	9CE 47
Foreign Loan	29,639	37,253	658	797	4,073	8,577	4,519									
	3,473	912	25,844	30,152	216,692	456,167	240,066							٠		
Operating Revenue	18,052	26,939	26,365	26,606	46,314	58,694	61,349	72.902	78.915	F17 17	35.4	307 30	371 30	C 10 01 1	100	
Water Sales	17,292	24,205	24,230	24,406	43,452	55,456	57,965	68.740	71.222	72.961	86.612	88 880	36 268	104 170	100,611	100 000
Connection Fee	0	1,714	1,051	1,049	1,157	1,219	1,240	1.539	4.718	1.686	955	1 976	2 619	7 104	0000	2,000
Service Charge	414	537	- 009	663	836	606		1.248	. S	1,667	2 DAR	2000	2773	101 0	2/642	97.0
Ohter Income	346	56	485	488	869	1.109	1.159	1.375	1 474	460	1 733	722	202	6	100,0	100,0
Incme From Municipality	2,164	0	7,748	7,547	32,317	26,105	27,269	32.977	34.415	35,880	43.263	45 024	7074	400,2	760,2	2,118
Total Inflow	53,328	65,104	50,614	69,112	303.880	554.571	339, 530	112 902	121 126	120 675	27.5	200 021	200	70/100	22,45	102,10
				•				2021311	077	0/5*77	700 001	130,613	135,300	1/0,480	174,464	178,442
Cash Outflow			,													
Control of the second s				:			:	:								
res	·.						:		:-			11	٠			
	60,320	74,780	9,068	10,580	73,153	154,005	81,058							•		
Foreign Portfon	2,431	638	18,091	21,106	151,684	319,317	168,047						ē	,		
Amortization									٠							
Principal	•	0	0	0,040	4,484	4,977	6,327	7,023	7,796	8,923	39,765	41,660	43.598	34 421	35 522	26 672
Interest	3,354	7,477	8,247	9,145	9,735	22,501	28,933	28,237	27,454	26,607	25,625	23.729	21.692	19.499	18 308	17 247
Operating Expenses	9,585	13,160	14,831	15,470	23,075	26,514	31,784	35,913	42,042	43.247	48,438	51.667	25	21 13	60 223	72 778
O & M Cost	5,739	7,199	9,196	9,806	13,866	15,157	19,974	21,902	26,003	28,417	30,890	33.716	36.615	43.562	47 906	52 058
Connection Expenses	٥	857	526	524	579	019	929	770	2,359	. £3	716	888	309	3 507	1 485	7
Share of Head Office	3,846	5,104	5,109	5,140	8,630	10,748	11,190	13,242	13,680	13.987	16.571	15,963	17.056	10, 877	19 961	20 176
Payment to RID	\$ 28	226	345	688	2,712	2,921	3,226	3,518	3,834	4,175	4,543	4,939	5.325	5.740	6.189	6.653
Total Outflow	76,544	97,032	51,178	61,329	264,843	530,235	319,375	74,691	81,136	82,951	118.371	121.996	125 695	126 702	129 442	124 251
1												54 . 5 .			· · ·	
Net Cash Flow	-23,216	-31,927	9,436	7,782	39,037	24,285	20,155	38,211	39,990	39,625	27,161	28,819	59,684	48,588	45,022	44,091
Accuminated	-23,216	-55,143	-45,707	-37,925	1,111	25,397	45,552	83,763	123,752	163,377	190,538	219.357	249.021	297.710	342. 731	386.873
医有配角状体性 医多常体 医甲基苯酚	-23,216	-55,143	-45,707	-37,925	1,111	25,397	45,552	83,763	123,752	163,377	190,538	219,357	249,021	•	297,710	297,710 342,731

Note : Based upon the assumption that water tariff increase every three year at the rate of 5 % per annum.

Inflation rate of 5 % per annum is applied for price escalation.

(Cont'd)
Price
Current
S at
Cash F
Projected
able A17-1-6

Cash Inflow Government Contribution Capital Contribution Local Loen Foreign Loan Operating Revenue Foreign Loan Connection Fee 3,576 3,124 Service Charge Ohter Income Connection Full Total Inflow Project Expenditures Local Portion Foreign Portion Foreign Portion Amortization Principal 35,597 36,604	138 127 2, 2, 4 207, 207, 207, 200, 200, 200, 200, 200,	H H W TO THE STATE OF THE STATE	11,309 163,879 19,130 151,283 3,502 3,662 5,693 5,908 2,983 3,026 18,055 99,104	166,472 153,588 3,687 6,125 3,072 102,561	192,712	192,712 177,797 4,268 7,091 3,556	192,712 177,797 177,797 4,268 7,091 3,556		n B E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				2 5 1 1 1 1 1 1
Contribution 561 ben Loan Loan Loan Loan Loan Servenuce 134,267 1 Ion Fee 3,576 Charge 4,374 ncome 2,485 Municipality 69,928 Municipality 69,928 Municipality 69,928 Trion Portion n 35,597		and the second s		3 4 5 8	192,712 177,797 4,268	192,712 177,797 4,268 7,091 3,556	192,712 177,797 4,268 7,091 3,556 118,728				a.		
Loan Loan Loan 134,702 136,702 136,702 127,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 137,267 133,597		produce a facility of the con-		3 2 2	192,712 177,797 4,268	192,712 177,797 4,268 7,091 3,556	192,712 177,797 4,268 7,091 3,556 118,728						
Loan Loan Loan 134,702 1 ales 124,267 1 ton Fee 3,576 Charge 4,374 ncome 2,485 Wunicipality 69,928 winicipality 69,928 refion Portion n 35,597		Assume the second of the second		2 2 2 2	192,712 177,797 4,268	192,712 177,797 4,268 7,091 3,556	192,712 177,797 4,268 7,091 3,556 118,728			٠			
Loan svenuce 134,702 1 sles 126,267 1 ton Fee 3,576 Charge 4,374 ncome 2,485 Municipality 69,928 w 205,191 2 rtion Portion n 35,597		and the state of the state of		2 2 2 2	192,712 177,797 4,268	192,712 177,797 4,268 7,091 3,556	192,712 177,797 4,268 7,091 3,556 118,728						
134,702 134,702 134,267 134,267 134,267 134,267 134,267 134,267 134,267 134,267 134,267 135,597 135,597 135,597 136,292 136,292 136,292 136,292 136,292 136,292 136,297 136,		and the second of the second		3 2 3	192,712 177,797 4,268	192,712 177,797 4,268 7,091 3,556	192,712 177,797 4,268 7,091 3,556 118,728						
124,267 1		araset is idea.		26 26	177,797	4,268 7,091 3,556	177,797 4,268 7,091 3,556 118,728	223,088	223,088	223,088	258,253	258,253	258,253
Charge 3,576 Charge 4,374 ncome 2,485 Wunicipality 69,928 * 205,191 6 ridon Portion n 35,597	N.			7 2	4,268	4,268 7,091 3,556	4,268 7,091 3,556 118,728	205,823	205,823	205,823	238,265	238,265	238,265
Charge 4,374 ncome 2,485 Municipality 69,928 # 205,191 6 reditures rtion n 35,597	7 8	, a		3 % K		3,556	7,091 3,556 118,728	4,941	4,94	4,941	5,719	5,719	5,719
1,485 Municipality 69,928 205,191 2 enditures rtion n 35,597	~ ~			V.,	7,091	3,556	3,556 118,728	8,209	8,209	8,209	5,502	205,8	9,502
Municipality 69,928 205,191 6 enditures rtion Portion n 35,597				V.,	3,558	112 728	118,728	4,116	4,116	4,116	4,765	4,765	4,765
enditures rtion Portion n 35,597					118,728	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		137,442	137,442	137,442	159,106	159,106	159,106
enditures rtion Portion n 35,597	:				311,440	311,440	311,440	360,530	360,530	360,530	417,359	417,359	417,359
enditures rtion Portion n 35,597	:												
ditures Lion ortion 35,597				:					•				
tion ortion 35,597	. :				s (*)			-					
ortion 35,597													
35,597													
35,597		٠.		-									
	604 37,644	644 37,951	38,976	40,028	41,109	42,219	43,359	44,529	45,732	46,966	48,234	49,537	
Interest 15,037	037 13,997	997 12,923	323 11,899	10,846	9,765	8,656	7,516	6,345	5,143	3,908	2,640	1,337	
Operating Expenses 80,624 85,603	603 91,781	781 102,488	188 103,647	110,835	119,706	123,901	128,305	138,575	143,430	148,529	160,418	166,039	171,941
O & M Cost 55,185 60,097	65,963	963 72,425	125 73,125	79,896	83,891	88,085	92,489	97,114	101,970	107,068	112,421	118,043	123,945
Connection Expenses 1,788 1,562		1,566 1,7	1,751 1,831	1,843	2,134	2,134	2,134	2,470	2,470	2,470	2,860	2,860	2,860
Share of Head Office 23,651 23,944	944 24,252	252 28,312	312 28,691	29,095	33,681	33,681	33,681	38,990	38,990	38,990	45,136	45,136	45,136
Payment to RID 7,745		8,334 8,9	8,968 10,857	11,654	12,236	12,848	13,491	14,165	14,873	15,617	16,398	17,218	18,079
Total Outflow 139,463 144,988	988 151,756	756 162,330	330 165,379	173,362	182,816	187,624	192,670	203,614	209,179	215,020	227,589	234,130	190,019
Net Cash Flow 65,728 60,894		55,340 77,033	97,604	95,671	128,623	123,816	118,769	156,916	151,352	145,510	189,669	183,228	227,339
Accumulated 452,551 513,445	,445 568,735	785 645,819	819 743,423	839,094	967,717	967,717 1,091,533 1,210,302 1,367,219 1,518,570 1,664,081 1,853,750 2,036,979	,210,302	,367,219	1,518,570	1,664,081	1,853,750 2		2,264,318

Note : Based upon the assumption that water tariff increase every three year at the rate of 5 % per annum.

Inflation rate of 5 % per annum is applied for price escalation.

Table A17-1-7 Unit Cost of Water after Depreciation

ar	Water Consum.	Capital	Operating Expenses	Payment to RID	Dapreciation	Total Expenses	Unit Water Cost (Baht/cu.m)
	(cu.m/day)						
90	7,818	62,751	9,585	854	0	73,190	25.65
91	8,449	71,827	12,533	930	. 0	85,290	27.66
92	13,694	24,634	13,708	854	3,124	42,320	8.47
93	13,760	27,371	13,866	854	3,124	45,215	9,00
94	31,491	184,974	18,984	2,231	3,124	209,313	18.21
95	31,525	370,860	21,220	2,289	3,124	397,493	34.54
96	33,042	185,886	24,621	2,407	3,124	216,038	17.91
97	34,296	0	25,523	2,500	22,999	51,022	4.08
98	35,573	0	28,999	2,595	22,999	54,593	4.20
99	36,871	0	28,857	2,691	22,999	54,547	4.05
00	38,192	0	29,737	2,789	22,999	55,525	3.98
01	39,533	0	30,734	2,888	22,999	56,621	3.92
02	40,656	0	31,664	2,965	22,999	57,628	3.88
03	41,806	0	35,602	3,044	22,999	61,645	4.04
04	42,878	. 0	35,559	3,126	22,999	61,684	3.94
05	43,949	0	36,560	3,200	22,999	62,759	3.91
06	44,001	. 0	36,935	3,297	22,999	63,231	3.94
07	44,062	. 0	37,905	3,379	22,999	64,283	4.00
08	44,117	0	39,237	3,463	22,999	65,699	4.08
09	44,062	. 0	40,558	3,549	22,999	67,106	4.17
10	50,108	0	39,639	4,092	22,999	66,730	3.65
11	51,397	, 0	40,922	4,183	22,999	68,104	3.63
12	51,397	0	40,922	4,183	22,999	68,104	3.63
13	51,397	0	40,922	4,183	22,999	68,104	3.63
14	51,397	0	40,922	4,183	22,999	68,104	3.63
15	51,397	0	40,922	4,183	22,999	68,104	3.63
16	51,397	0	40,922	4,183	22,999	68,104	3.63
17	51,397	0	40,922	4,183	22,999	68,104	3.63
18	51,397	0	40,922	4,183	22,999	68,104	3.63
19	51,397	.0	40,922	4,183	22,999	68,104	3.63
20	51,397	0	40,922	4,183	22,999	68,104	3.63

A-17-1-12

<u>.</u>:.

