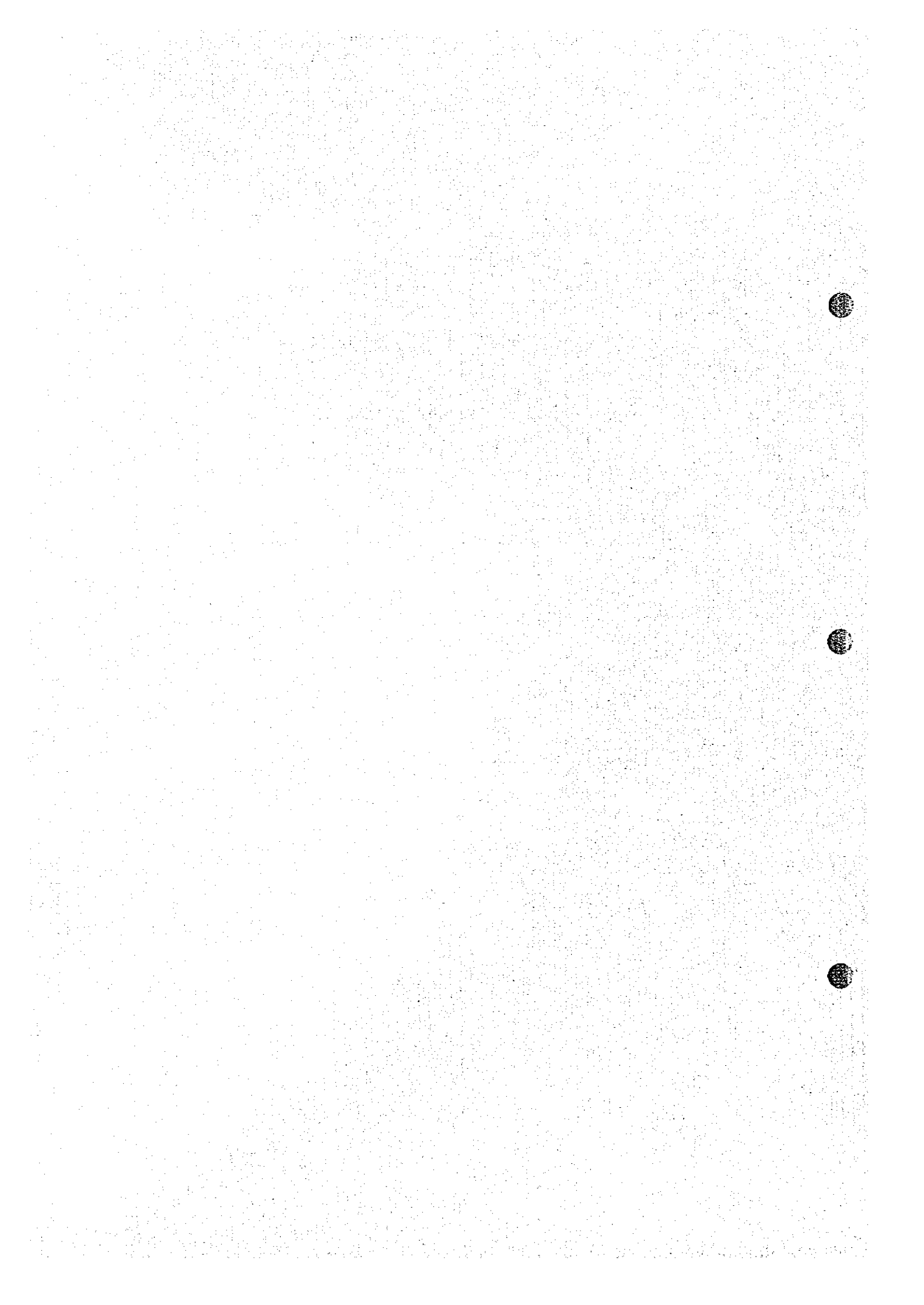


**SECTOR B**

**TABLES**



**Table 1-1 History and Future of Metropolitan Caracas Water Supply System**

YEAR	WATER RESOURCE	SYSTEM	SUPPLY CAPACITY m <sup>3</sup> /sec	SERVICE POPULATION
1950	La Mariposa (Yalle River) Macarao, Filla Norte Wells		1.63	704,567
1965	Tuy River	Tuy I	4.33	1,780,000
1968	Tuy River Lagartijo Reservoir	Tuy I Tuy II Camatuy	9.50	2,050,000
1980	Tuy River Lagartijo Reservoir Qda, Seca Reservoir Camatagua Reservoir	Tuy I Tuy II Tuy III (line No. 1)	13.00	3,000,000
1983	"	Tuy I Tuy II Tuy III (line No. 2)	16.00	3,200,000
1992	Tuy River Lagartijo Reservoir Qda, Seca Reservoir Camatagua Reservoir Taguacita Reservoir	Tuy I Tuy II Tuy III (line No. 5)	16.00	3,400,000
1994	"	Tuy I Tuy II Tuy III (line No. 3)	19.50	3,500,000
1996	"	Tuy I Tuy II Tuy III	22.00	3,600,000
2000	Tuy River, Lagartijo Reservoir Taguacita Reservoir Qda, Seca Reservoir Camatagua Reservoir Taguaza Reservoir	Tuy IV	26.50	4,200,000

Table 1-2 Monthly Intake, 1991-1995

(m<sup>3</sup>/s)

1991					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan.	5.48	0.75	3.07	9.88	19.18
Feb.	4.41	1.04	3.42	10.22	19.09
Mar.	4.51	1.93	2.27	10.36	19.07
Apr.	4.58	2.39	2.01	10.12	19.10
May	6.73	1.04	1.33	10.32	19.42
Jun.	5.92	0.97	1.49	10.40	18.78
Jul.	4.30	2.53	1.98	10.29	19.10
Aug.	2.04	2.74	3.38	10.29	18.45
Sep.	3.01	2.16	3.25	10.40	18.82
Oct.	3.25	2.30	2.90	10.30	18.75
Nov.	4.08	1.74	3.19	10.40	19.41
Dec.	4.17	1.83	3.07	10.39	19.46
Average	4.37	1.79	2.61	10.28	19.05

(m<sup>3</sup>/s)

1992					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan	4.17	1.74	3.20	10.35	19.46
Feb	5.23	1.31	2.73	10.39	19.66
Mar	6.02	1.22	1.95	10.40	19.59
Apr	7.06	1.42	1.31	10.40	20.19
May	6.20	2.51	1.86	10.37	20.94
Jun	2.26	3.53	2.70	10.23	18.72
Jul	1.90	2.09	4.01	10.32	18.32
Aug	3.62	0.31	4.01	10.35	18.29
Sep	3.96	0.69	3.03	10.40	18.08
Oct	3.80	2.00	3.43	10.34	19.57
Nov	4.21	1.83	2.93	10.30	19.27
Dec	4.30	2.27	2.86	10.33	19.76
Average	4.39	1.74	2.84	10.35	19.32

(m<sup>3</sup>/s)

1993					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan	4.20	2.00	3.19	10.35	19.74
Feb	4.98	2.24	2.28	9.37	18.87
Mar	5.80	2.06	1.58	10.40	19.84
Apr	5.68	2.26	1.25	9.50	18.69
May	5.93	1.71	1.56	10.40	19.60
Jun	6.01	1.08	1.38	12.93	21.40
Jul	3.24	2.03	2.72	9.62	17.61
Aug	4.52	0.77	2.89	10.09	18.27
Sep	3.13	2.20	3.06	8.98	17.37
Oct	3.89	1.95	2.96	10.21	19.01
Nov	2.24	3.19	3.21	10.38	19.02
Dec	3.09	2.11	3.54	9.82	18.56
Average	4.39	1.97	2.47	10.17	19.00

(m<sup>3</sup>/s)

1994					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan	3.89	2.43	2.43	9.97	18.72
Feb	3.62	2.39	2.35	10.33	18.69
Mar	2.82	2.12	1.41	11.59	17.94
Apr	0.87	2.17	1.13	12.50	16.67
May	0.85	2.61	0.83	12.14	16.43
Jun	1.13	2.62	1.26	12.98	17.99
Jul	1.15	4.10	2.87	12.22	20.34
Aug	1.66	3.50	2.92	12.15	20.23
Sep	1.39	4.30	3.12	11.99	20.80
Oct	1.65	3.49	3.14	11.51	19.79
Nov	1.81	3.65	2.64	11.25	19.35
Dec	2.32	2.54	3.05	11.48	19.39
Average	1.93	2.99	2.26	11.68	18.86

(m<sup>3</sup>/s)

1995					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan	3.37	2.25	2.24	11.26	19.12
Feb	3.78	1.38	1.47	12.26	18.89
Mar	3.38	2.62	1.14	12.51	19.65
Apr	1.99	3.31	0.78	12.99	19.07
May	0.54	2.07	0.67	12.75	16.03
Jun	1.05	4.65	1.61	12.18	19.49
Jul	2.25	3.54	1.49	11.81	19.09
Aug	1.81	4.09	3.44	11.56	20.90
Sep	1.90	4.34	2.15	10.94	19.33
Oct	2.01	4.16	2.74	11.55	20.46
Nov	0.84	5.26	2.58	11.48	20.16
Dec	1.67	5.02	2.02	12.04	20.75
Average	2.05	3.56	1.86	11.94	19.41

(m<sup>3</sup>/s)

Average					
Month	Lagartijo	Tuy River	Taguacita	Camatagua	Total
Jan	4.22	1.83	2.83	10.36	19.24
Feb	4.40	1.67	2.45	10.51	19.03
Mar	4.51	1.99	1.67	11.05	19.22
Apr	4.04	2.31	1.30	11.10	18.75
May	4.05	1.99	1.25	11.20	18.49
Jun	3.27	2.57	1.69	11.74	19.27
Jul	2.57	2.86	2.61	10.85	18.89
Aug	2.73	2.28	3.33	10.89	19.23
Sep	2.68	2.74	2.92	10.54	18.88
Oct	2.92	2.78	3.03	10.78	19.51
Nov	2.64	3.13	2.91	10.76	19.44
Dec	3.11	2.75	2.91	10.81	19.58
Average	3.43	2.41	2.41	10.88	19.13

**Table 3-1 Outline of the Water Supply System**

System	Tuy I	Tuy II	Tuy III
Actual Capacity (1995)	Maximum : 3.75 m <sup>3</sup> /sec Average : 2.71 m <sup>3</sup> /sec	Maximum : 7.20 m <sup>3</sup> /sec Average : 5.69 m <sup>3</sup> /sec	Maximum : 8.60 m <sup>3</sup> /sec Average : 7.18 m <sup>3</sup> /sec
Water Resource	Tuy River Lagartijo Reservoir Quebrada Seca Reservoir Camatagua Reservoir	Tuy River Lagartijo Reservoir Quebrada Seca Reservoir Taguacita Reservoir	Camatagua Reservoir
Pumping Station	No.11 Station 1.0 m <sup>3</sup> /sec × 272 m × 3,720 kw - 5 units No.12 Station 1.0 m <sup>3</sup> /sec × 287 m × 3,850 kw - 4 units No.13 Station 1.0 m <sup>3</sup> /sec × 287 m × 3,850 kw - 4 units No.14 Station 1.0 m <sup>3</sup> /sec × 287 m × 3,850 kw - 4 units	No.21 Station 1.5 m <sup>3</sup> /sec × 150 m × 5,950 kw - 4 units No.22 Station 1.5 m <sup>3</sup> /sec × 364 m × 8,000 kw - 4 units No.23 Station 1.5 m <sup>3</sup> /sec × 364 m × 8,000 kw - 4 units	No.31 Station 2.3 m <sup>3</sup> /sec × 217 m × 8,000 kw - 5 units No.32 Station 3.0 m <sup>3</sup> /sec × 420 m × 15,000 kw - 5 units No.33 Station 3.0 m <sup>3</sup> /sec × 420 m × 15,000 kw - 5 units
Total Pump Head	1,074.38 m	963.30 m	1,028.40 m
Distance to Caracas from Water Resource	32.0 km	36.5 km	80.3 km
Treatment Plant	La Mariposa	La Guairita	Caujarito

Table 3-2 Monthly Intake and Transmission

Month	Intake					Transmission			
	Tuy River	Lagartijo	Taguacita	Camatagua	Total	Tuy I	Tuy II	Tuy III	Total
Jan.	2.25	3.37	2.24	11.26	19.12	2.50	6.17	7.57	16.24
Feb.	1.38	3.78	1.47	12.26	18.89	1.98	5.71	8.12	15.81
Mar.	2.62	3.38	1.14	12.51	19.65	2.67	5.22	7.91	15.80
Apr.	3.31	1.99	0.78	12.99	19.07	2.41	4.21	8.50	15.11
May	2.07	0.54	0.67	12.75	16.03	1.36	2.45	8.02	11.83
Jun.	4.65	1.05	1.61	12.18	19.49	1.62	5.79	8.19	15.61
Jul.	3.54	2.25	1.49	11.81	19.09	2.67	5.69	7.20	15.56
Aug.	4.09	1.81	3.44	11.56	20.90	3.70	6.76	6.35	16.81
Sep.	4.34	1.90	2.15	10.94	19.33	3.30	6.89	5.67	15.85
Oct.	4.16	2.01	2.74	11.55	20.46	3.33	6.43	6.29	16.04
Nov.	5.26	0.84	2.58	11.48	20.16	3.45	6.40	6.35	16.20
Dec.	5.02	1.67	2.02	12.04	20.75	3.49	6.61	6.04	16.14
Average	3.56	2.05	1.86	11.94	19.41	2.71	5.69	7.18	15.58

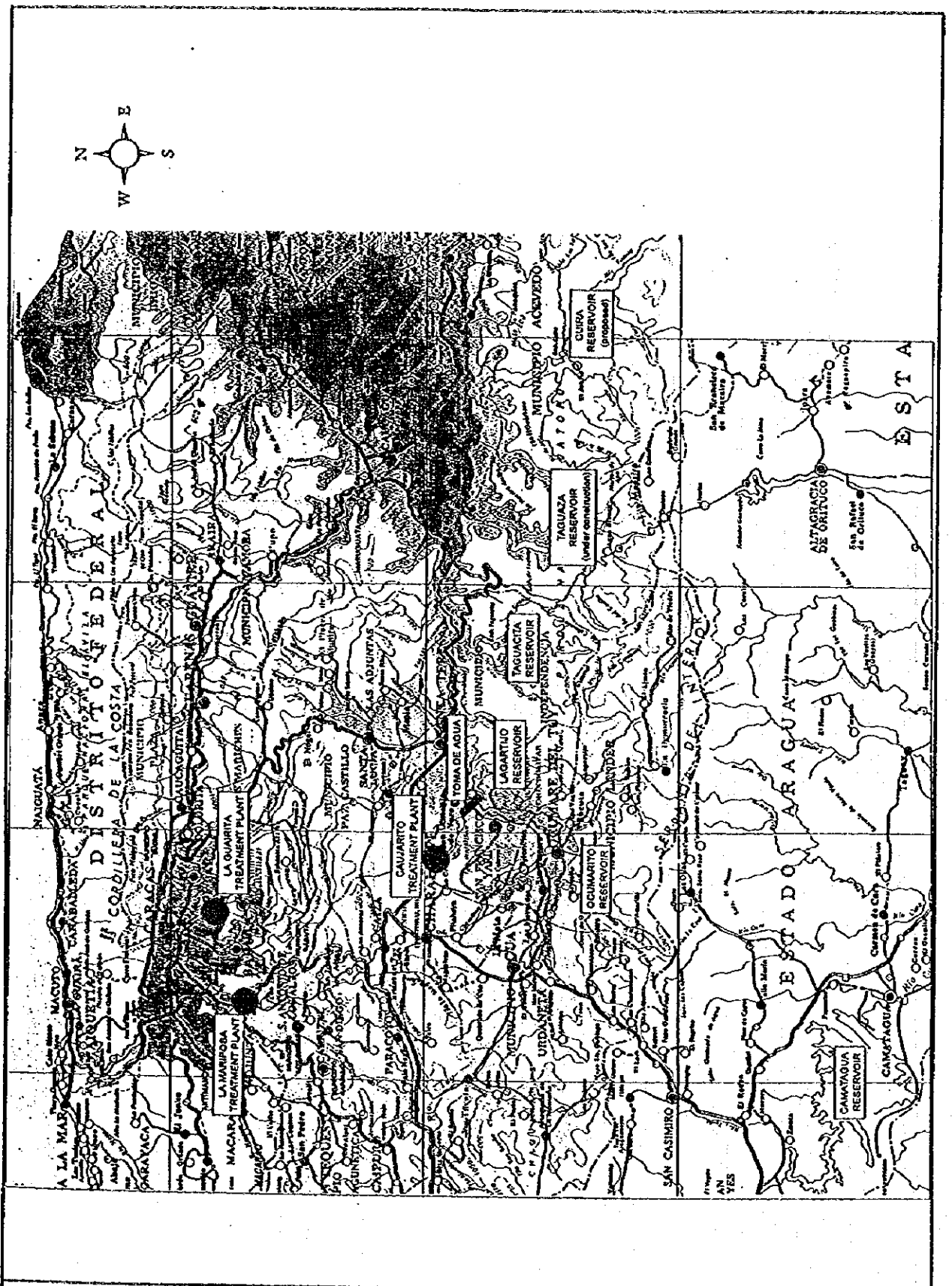
Table 4-1 Causes of Suspension of Water Intake at Toma de Agua (1995)

Month	Suspension		Causes					
	Time	Total Hour	color	odor	chlorine demand	turbidity	detergent	other chemical
Jan	4	33	3	2	2	0	1	0
Feb.	2	11	0	2	1	0	2	0
Mar.	2	17	0	0	2	2	2	0
Apr.	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun.	4	26	2	2	1	2	0	0
Jul.	3	15	0	3	0	0	0	0
Aug.	2	11	0	1	0	0	0	1
Sep.	2	15	0	1	1	0	0	1
Oct.	6	63	3	5	0	1	3	0
Nov.	0	0	0	0	0	0	0	0
Dec.	0	0	0	0	0	0	0	0
Total	25	191	8	16	7	5	8	2
Dry	8	44	3	4	4	2	4	0
Rain	17	67	5	12	3	3	4	2

**SECTOR B**

**FIGURES**





THE STUDY ON  
 THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
 STREAM OF THE TUY RIVER BASIN  
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Fig. 1-1 Metropolitan Caracas Water Supply Map

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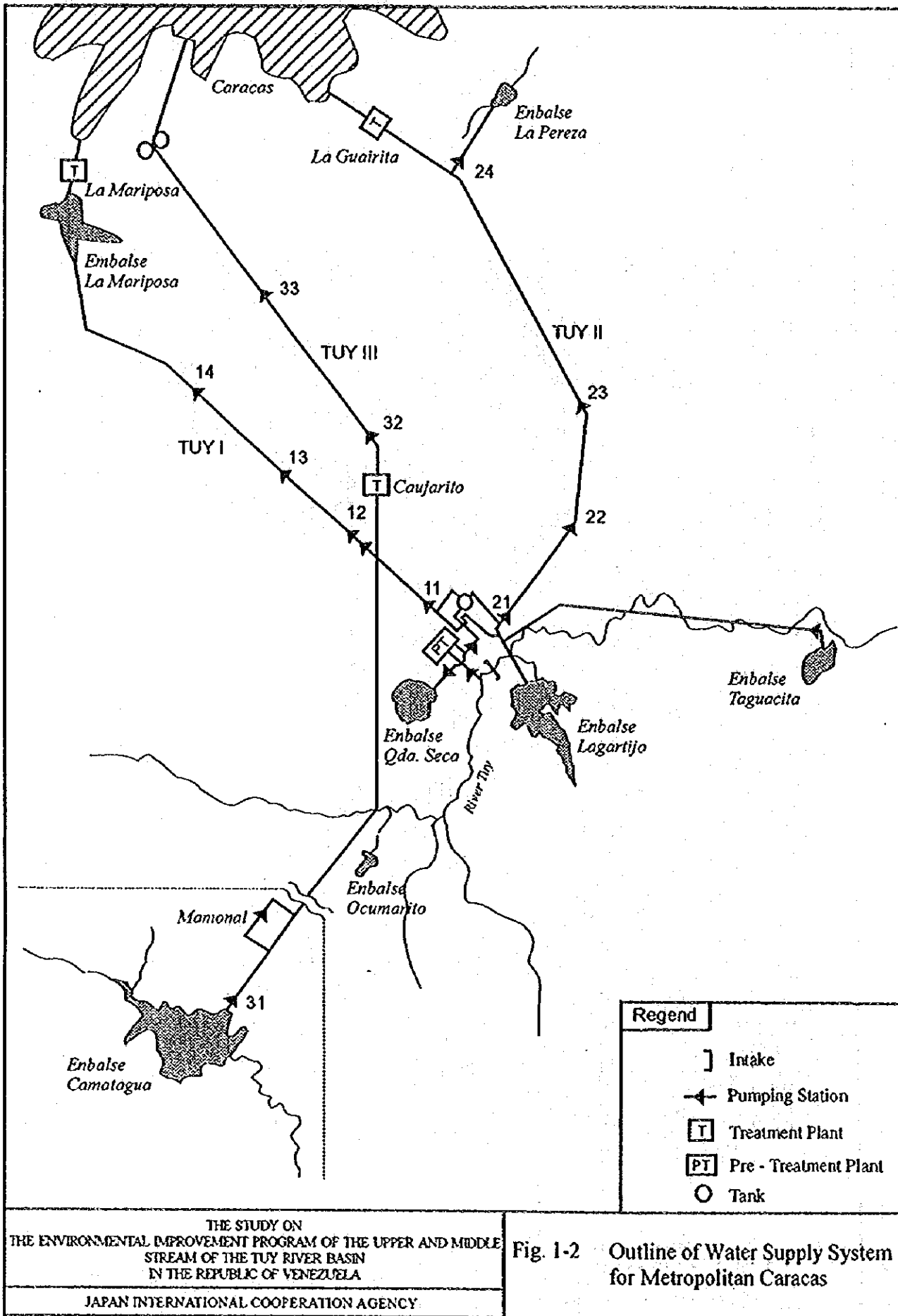
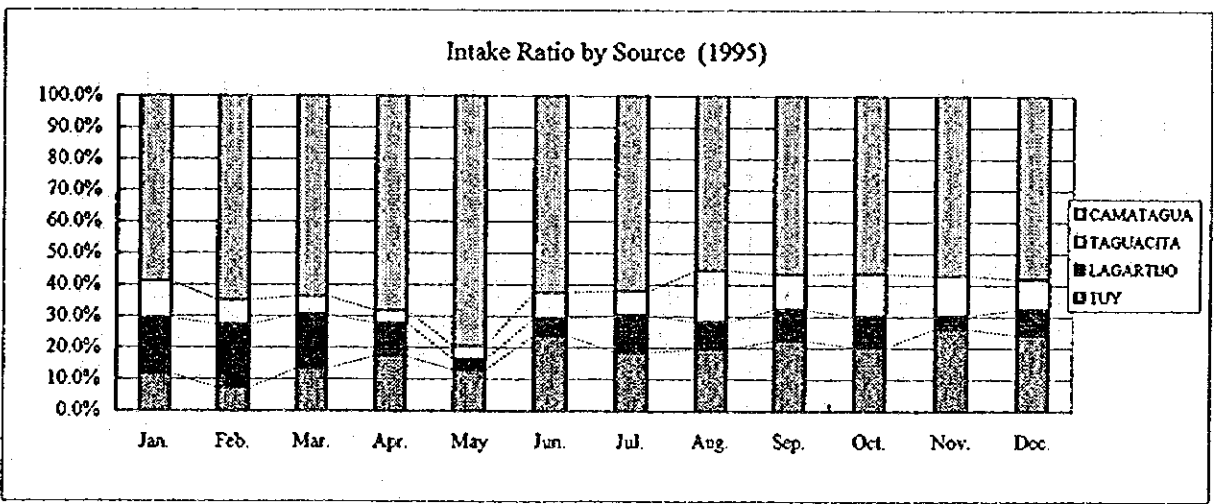
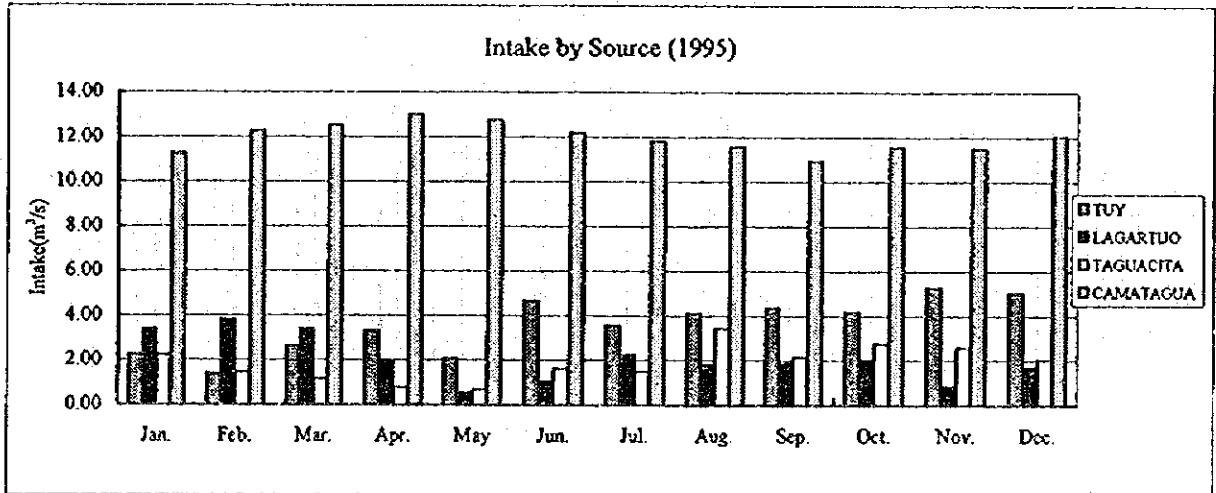
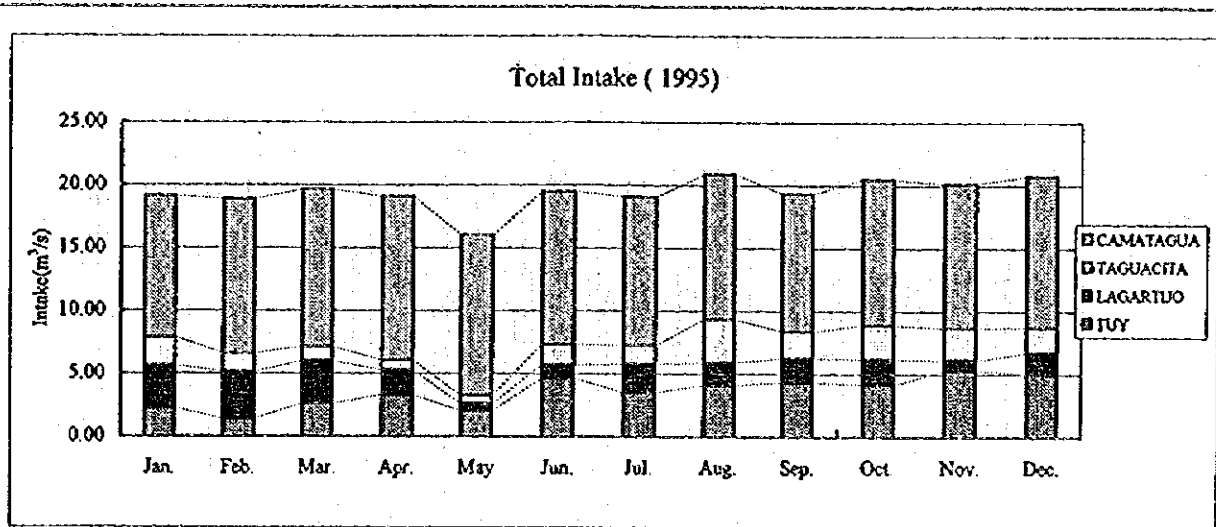


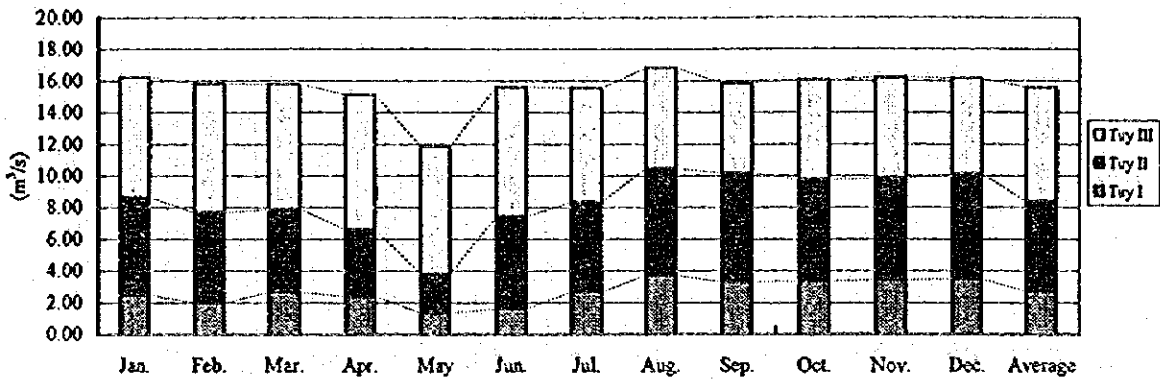
Fig. 1-2 Outline of Water Supply System for Metropolitan Caracas



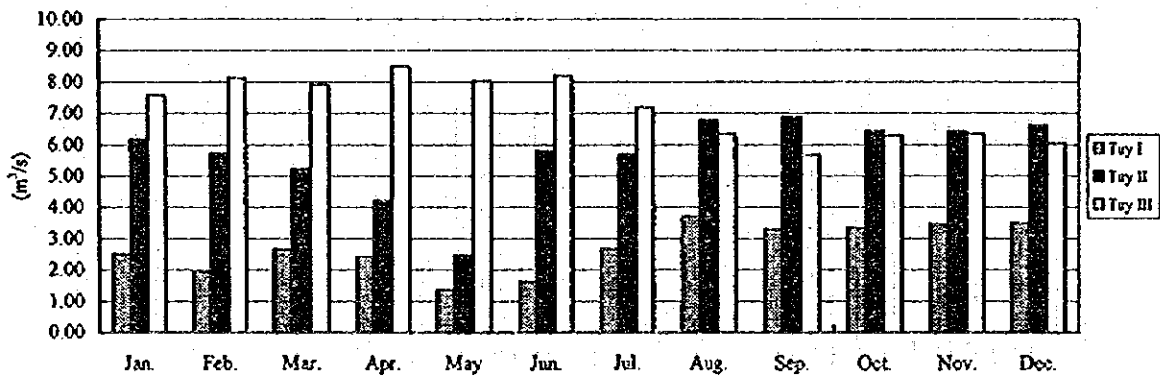
THE STUDY ON  
 THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
 STREAM OF THE TUY RIVER BASIN  
 IN THE REPUBLIC OF VENEZUELA  
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Fig. 2-1 Monthly Intake by Source

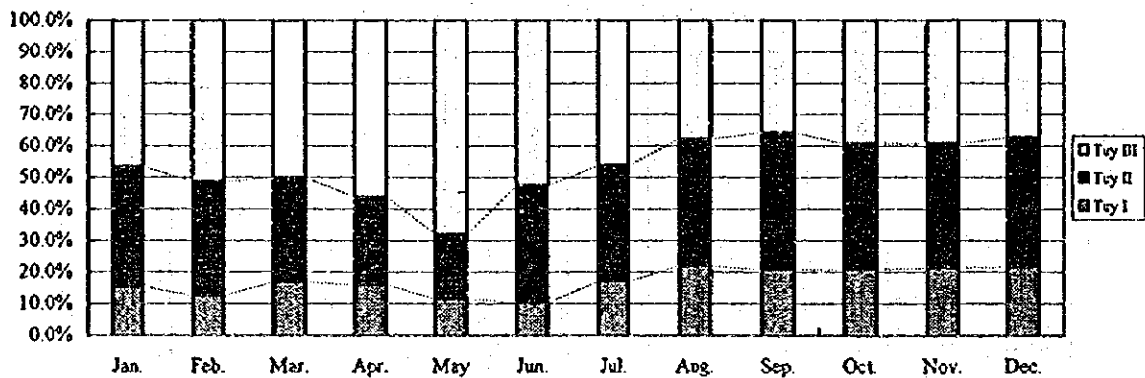
Total Transmission (1995)



Transmission by System (1995)

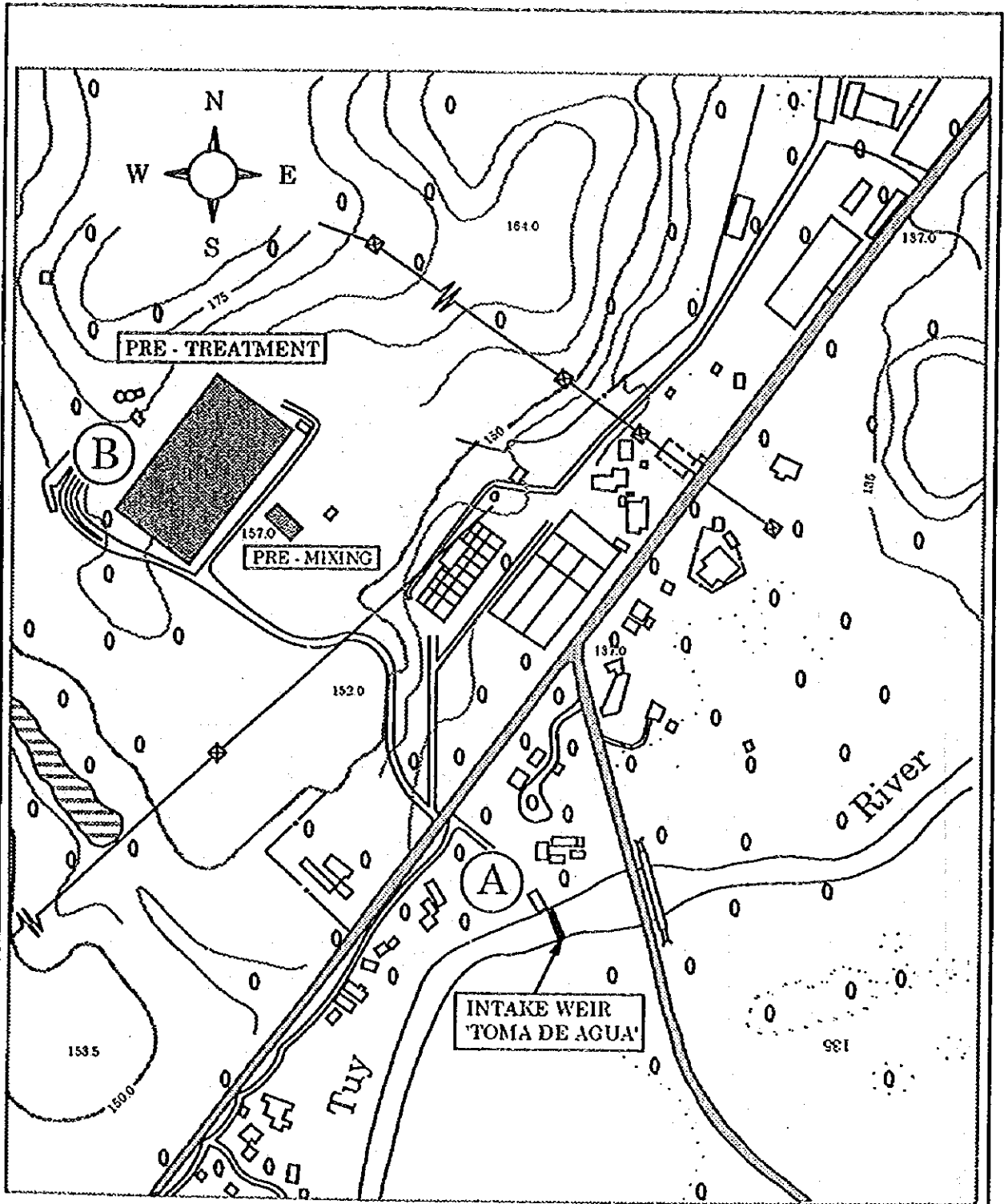


Transmission by System (1995)



THE STUDY ON  
 THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
 STREAM OF THE TUY RIVER BASIN  
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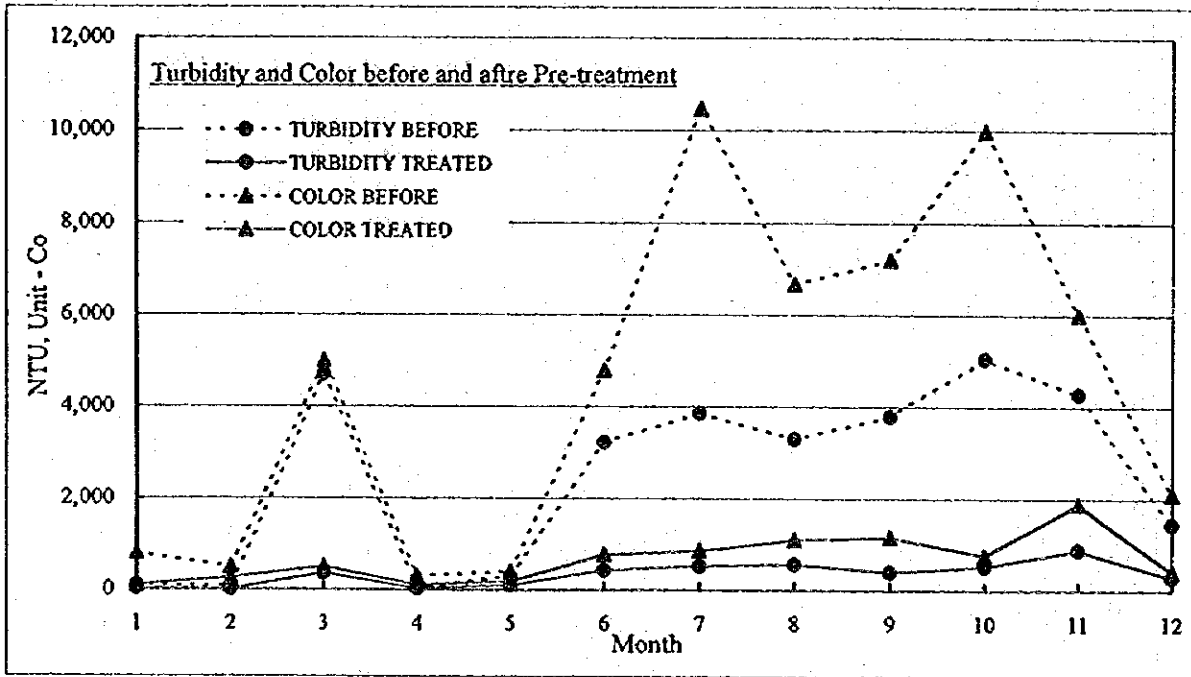
Fig. 3-1 Monthly Transmission by System, 1995



THE STUDY ON  
 THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
 STREAM OF THE TUY RIVER BASIN  
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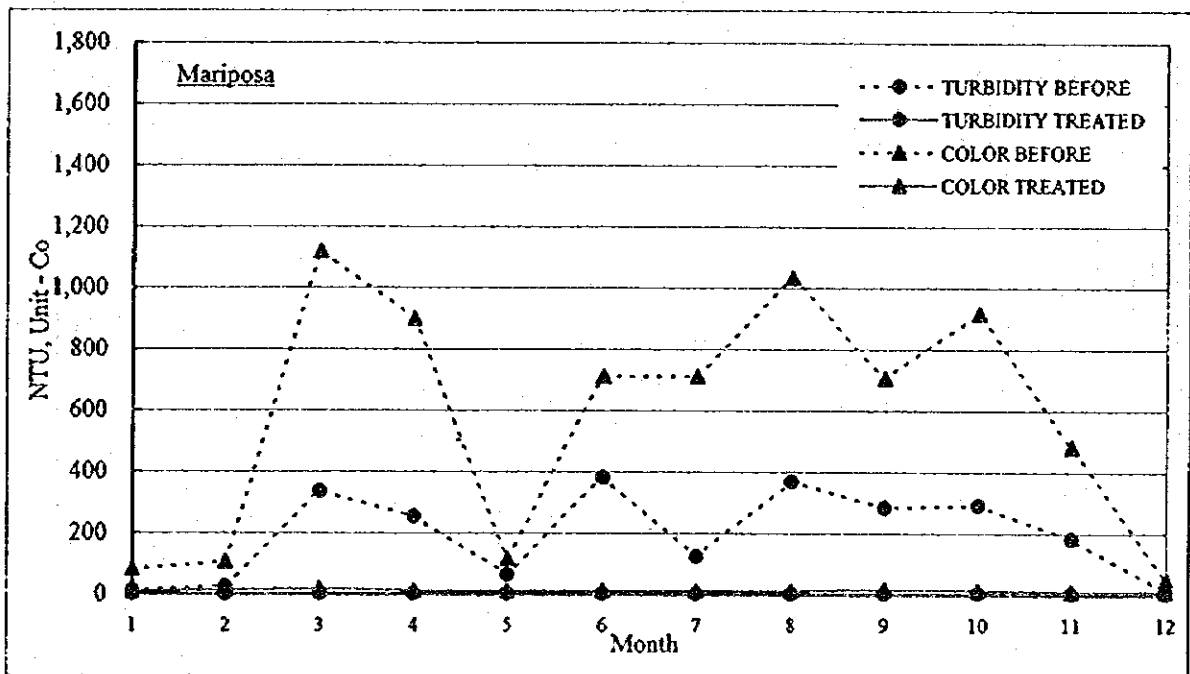
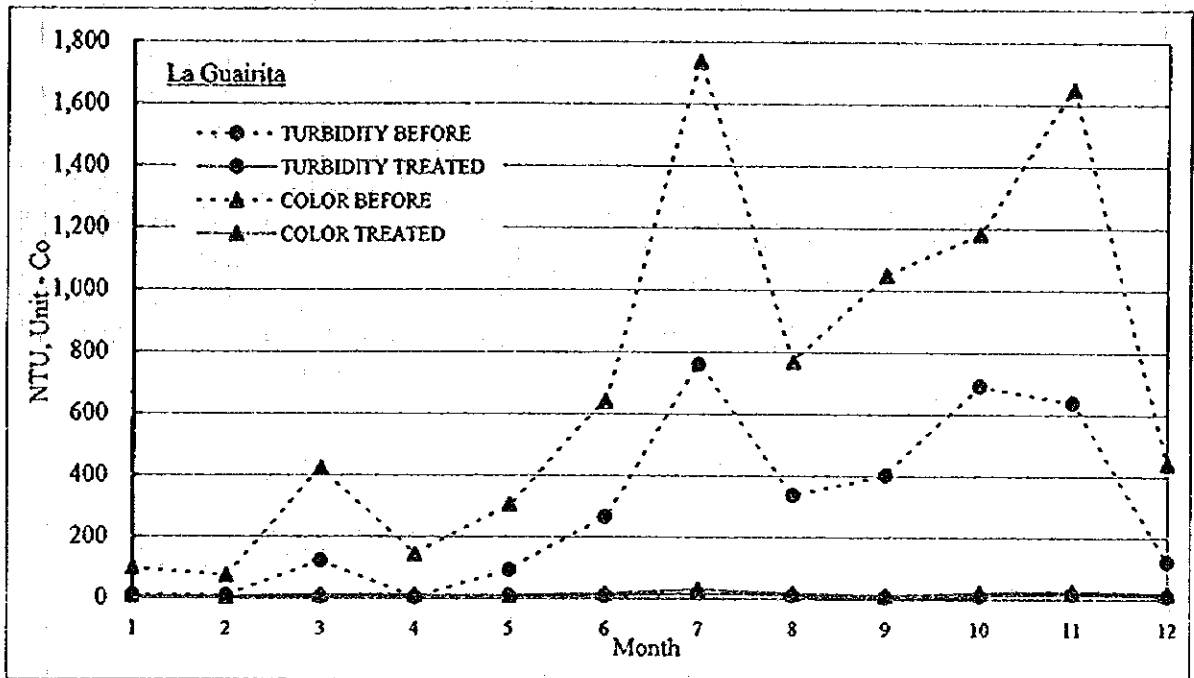
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Fig. 3-2 Layout of Pre-Treatment Plant  
 of Intake Station (Tom de Agua)



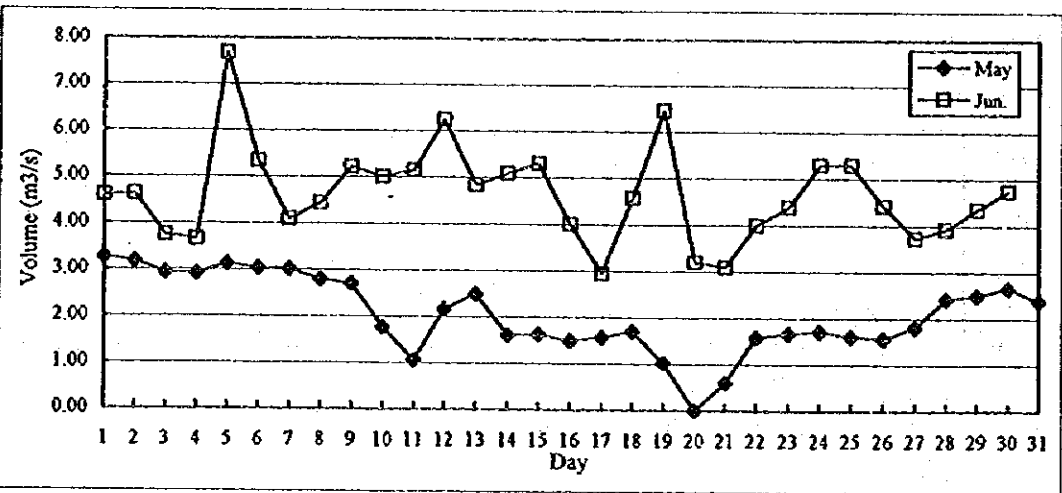
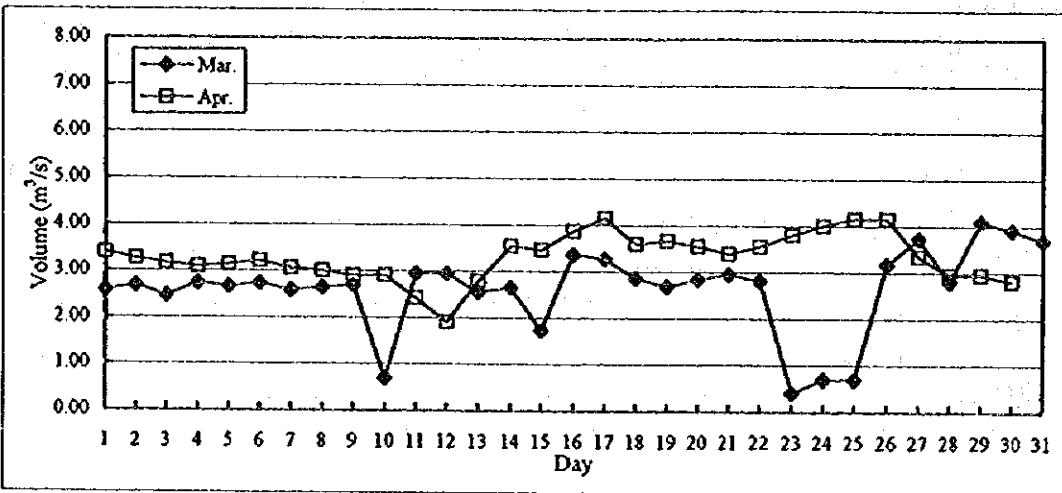
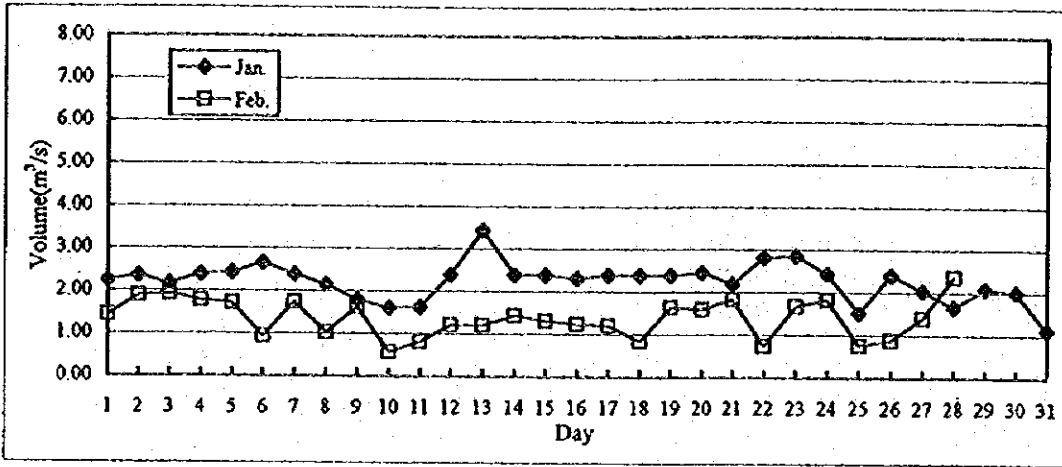
THE STUDY ON  
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Fig. 3-3 Turbidity and Color Before and After Pre-Treatment



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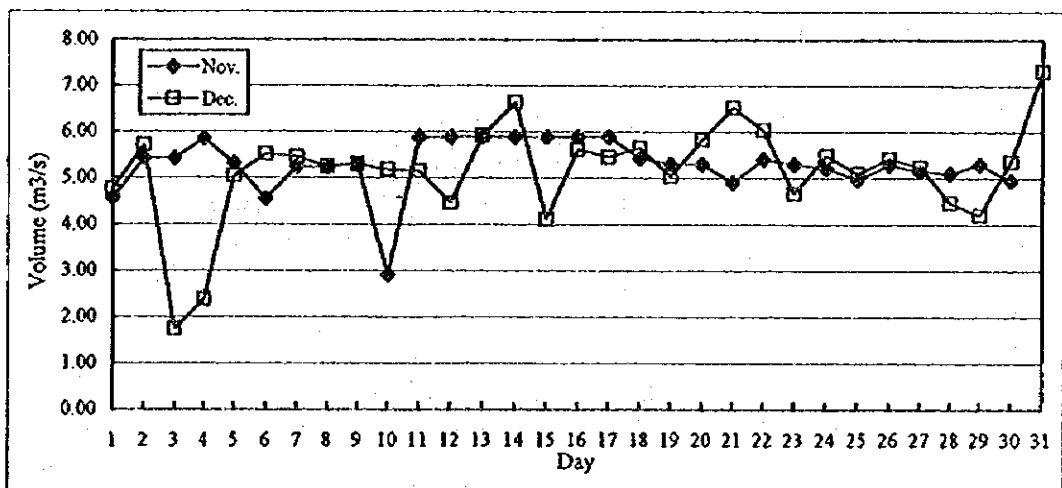
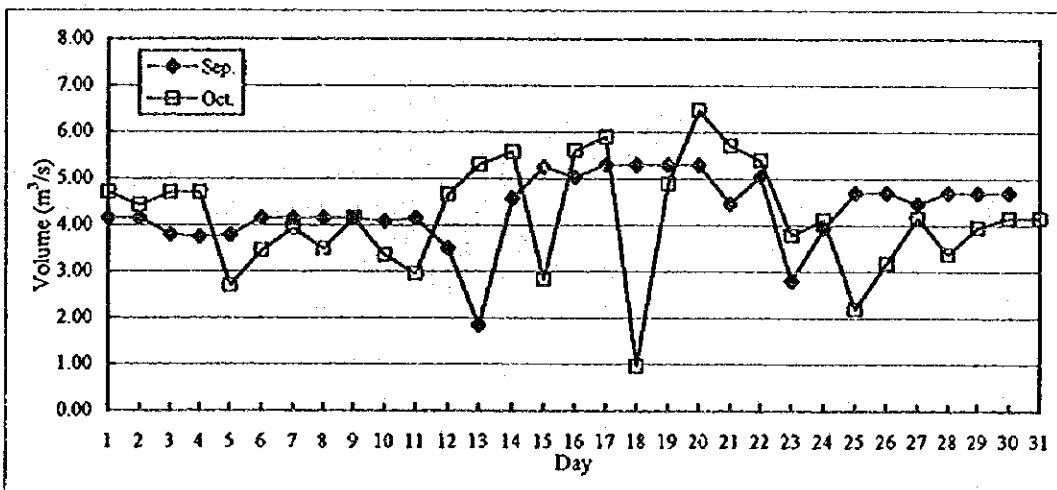
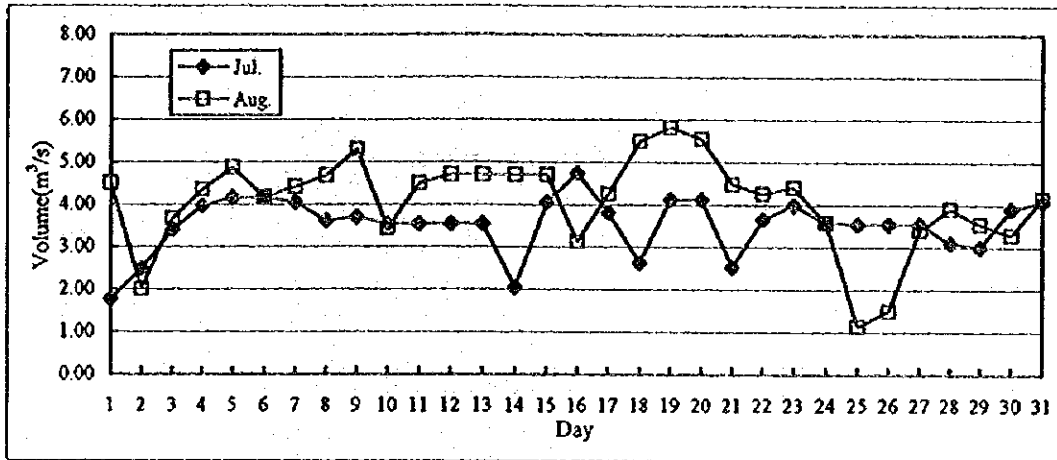
Fig. 3-4 Turbidity and Color Before and After Treatment



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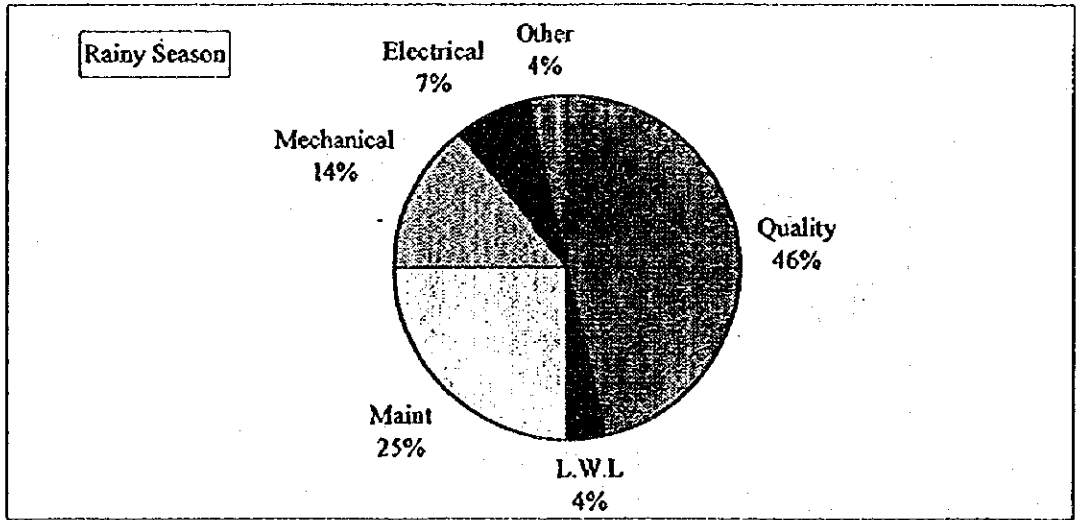
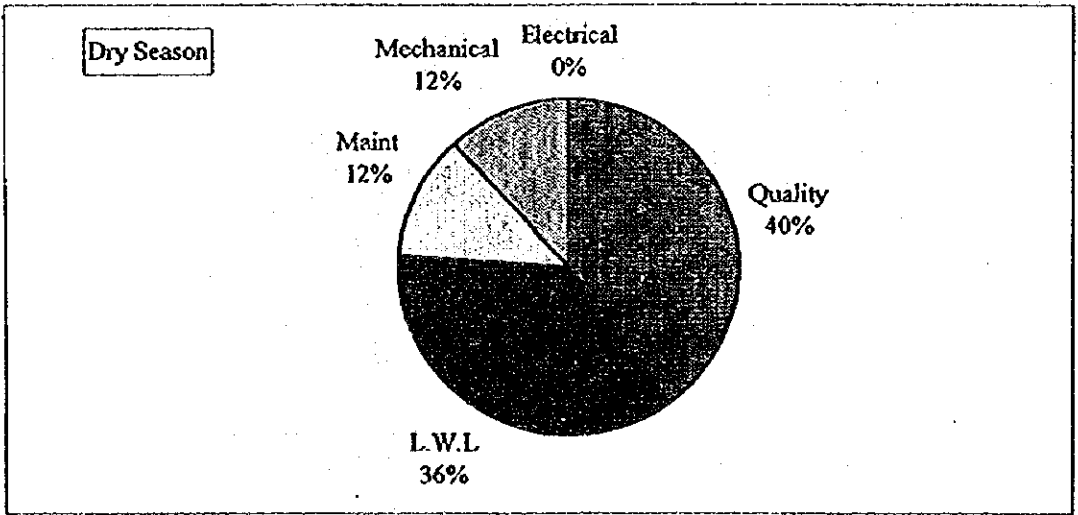
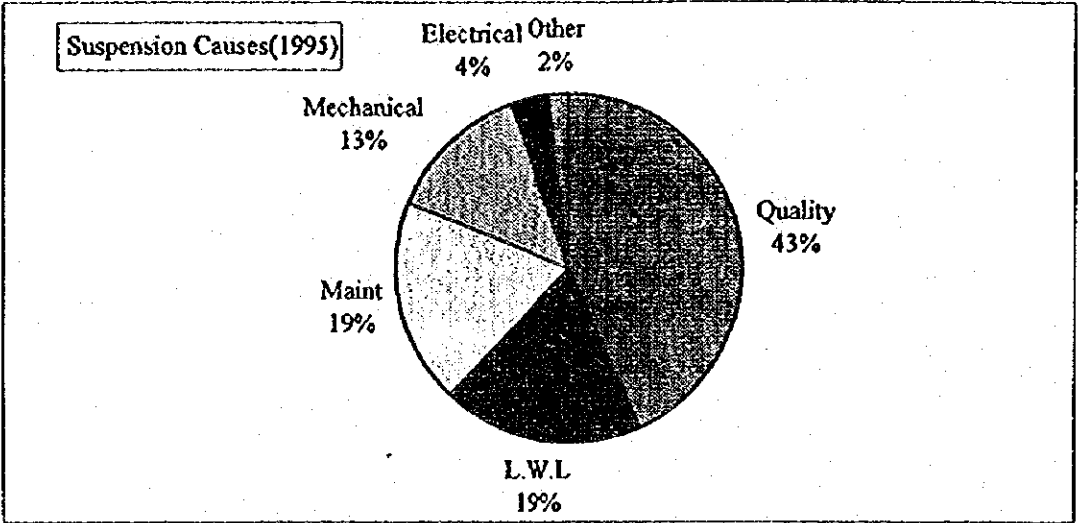
Fig. 4-1 Daily Intake Water at Toma de Agua, 1995 (1/2)





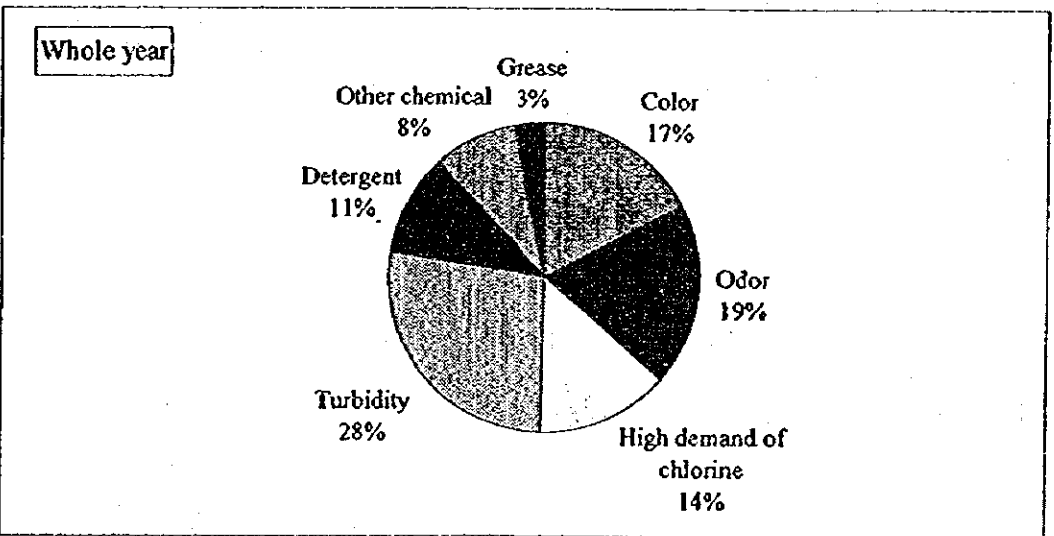
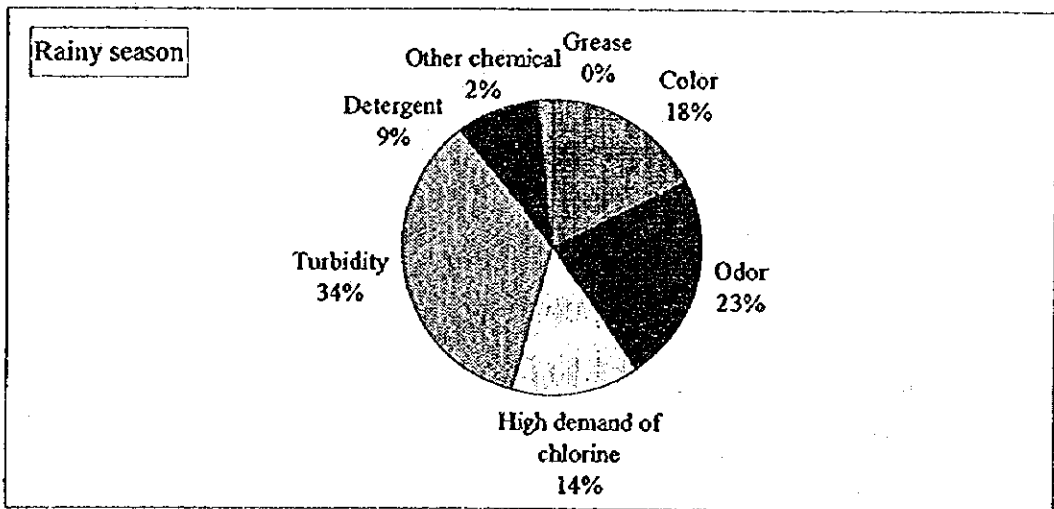
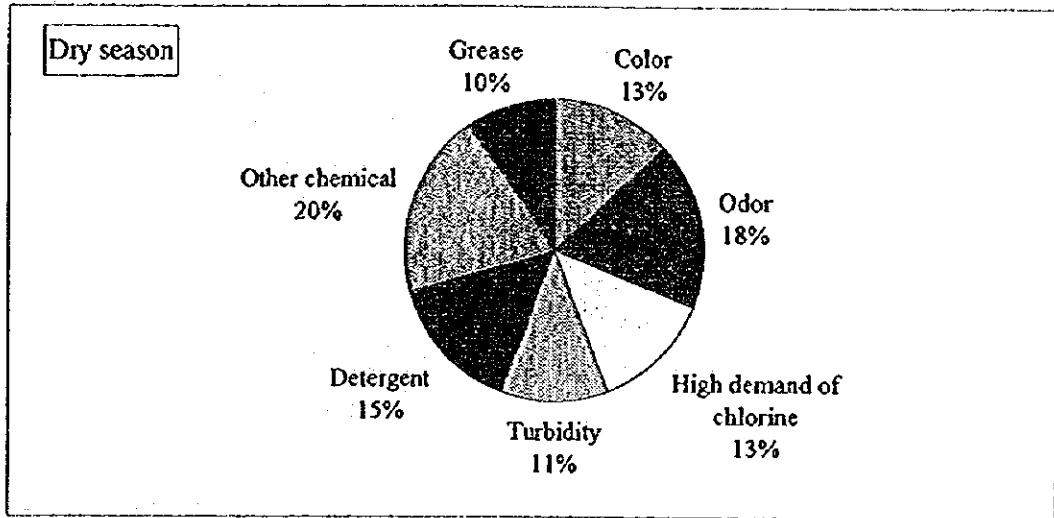
THE STUDY ON  
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Fig. 4-1 Daily Intake Water at Toma de Agua, 1995  
 (2/2)



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Fig. 4-2 Causes of Intake Suspension at Toma de Agua, 1995



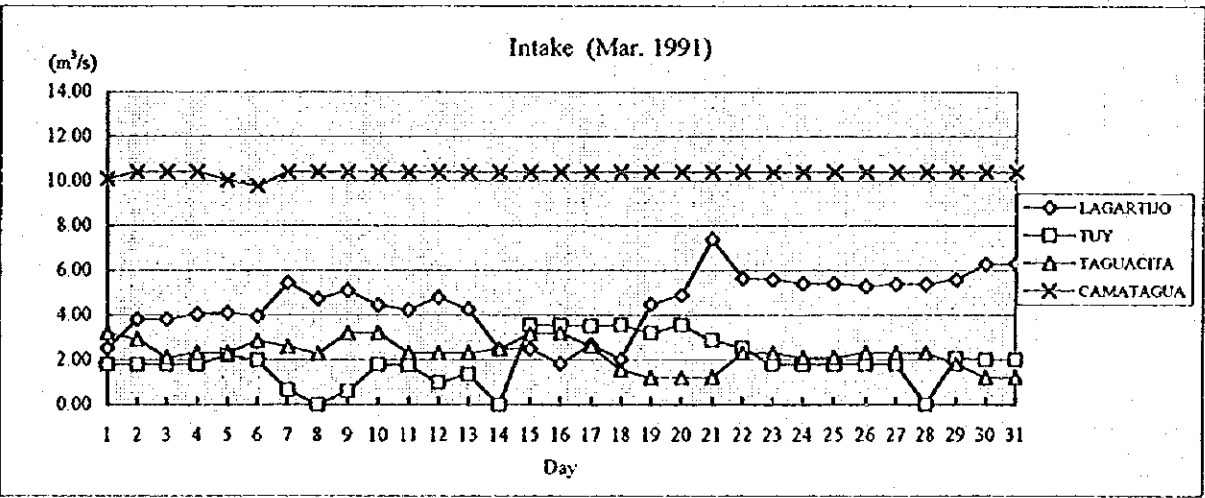
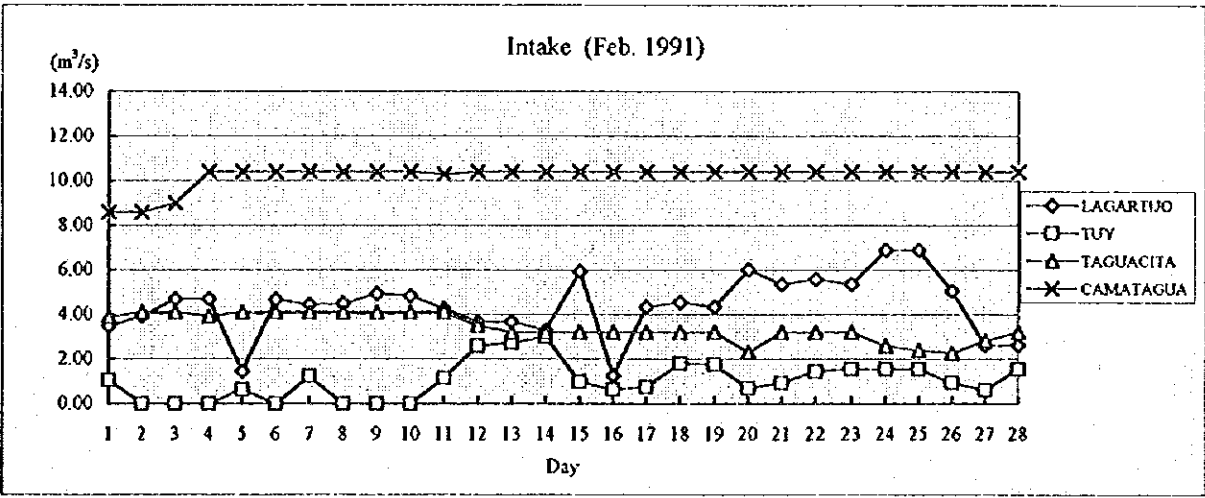
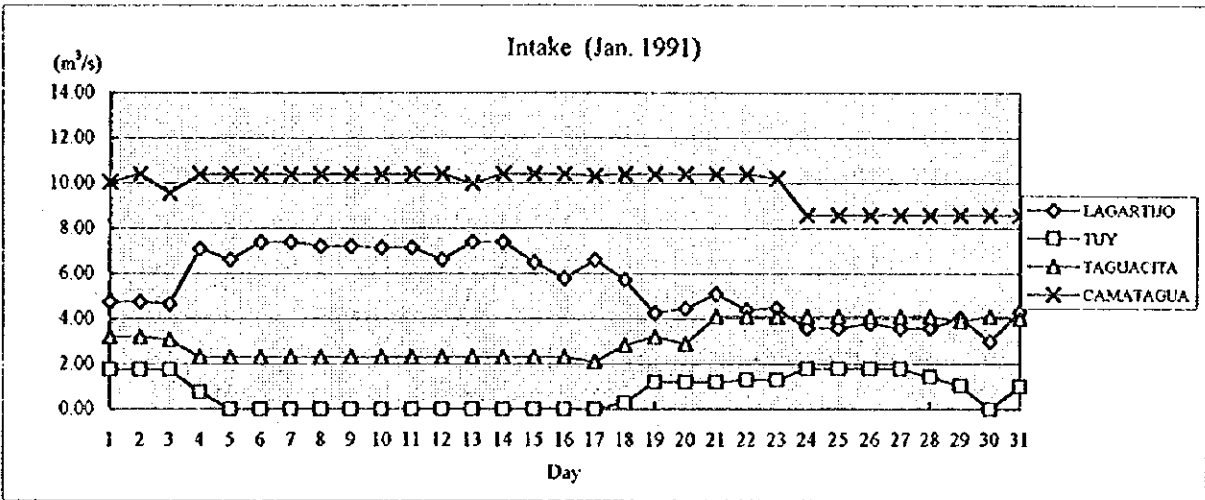
Note: Data are averages from 1993-95

THE STUDY ON  
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Fig. 4-3 Suspension of Intake Due to Water Quality

**SECTOR B**

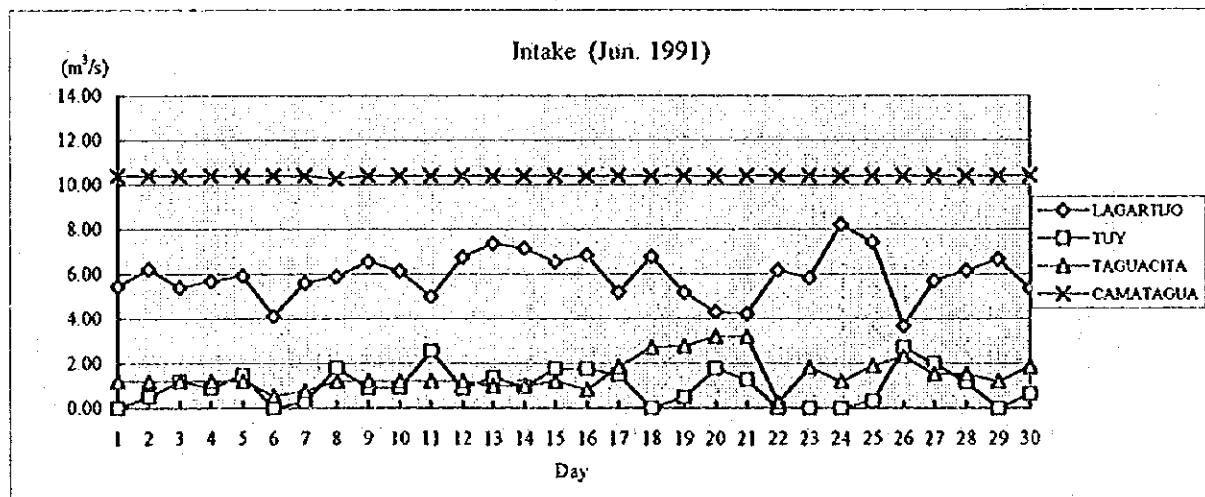
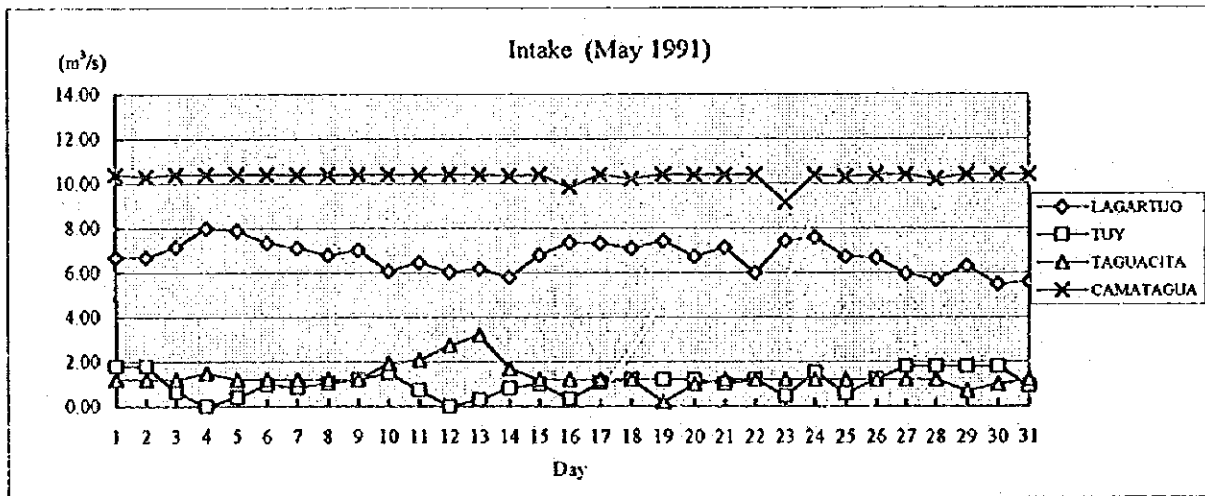
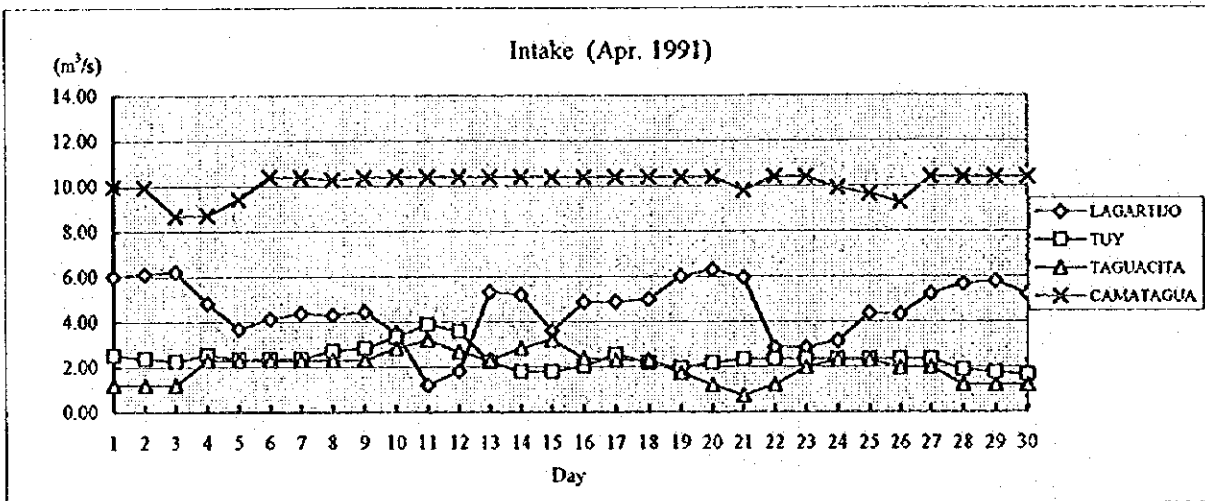
**ANNEX**



THE STUDY ON  
THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
STREAM OF THE TUY RIVER BASIN  
IN THE REPUBLIC OF VENEZUELA

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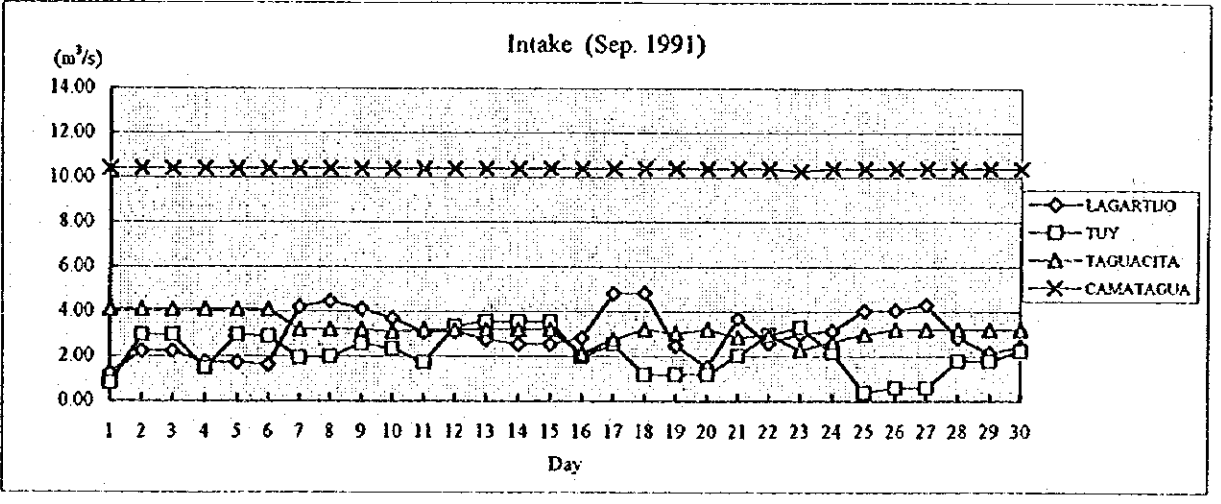
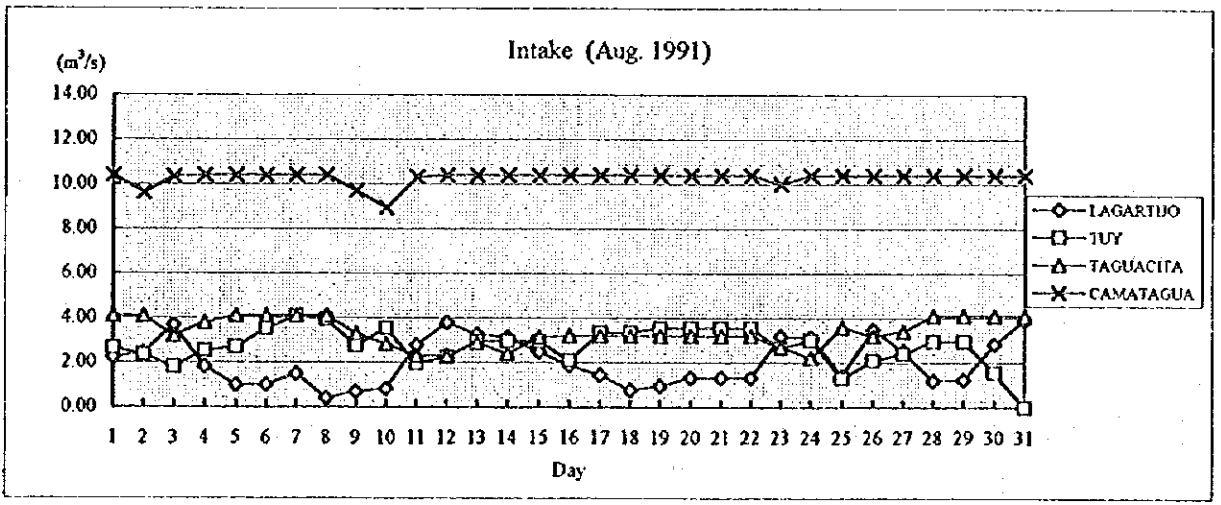
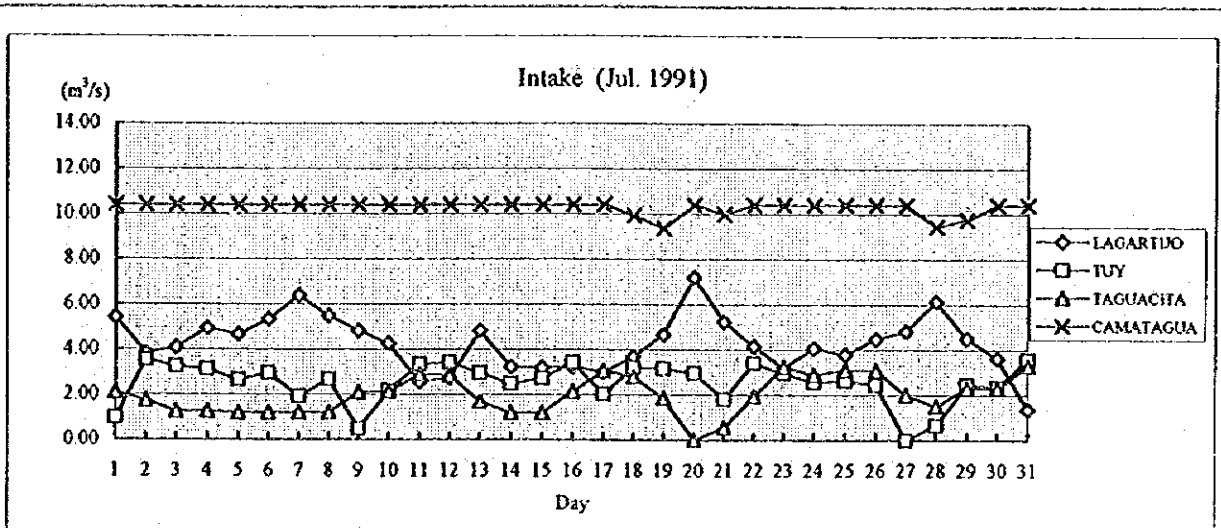
Daily Intake by Source, 1991



THE STUDY ON  
THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
STREAM OF THE TUY RIVER BASIN  
IN THE REPUBLIC OF VENEZUELA

JAPAN INTERNATIONAL COOPERATION AGENCY

Daily Intake by Source, 1991

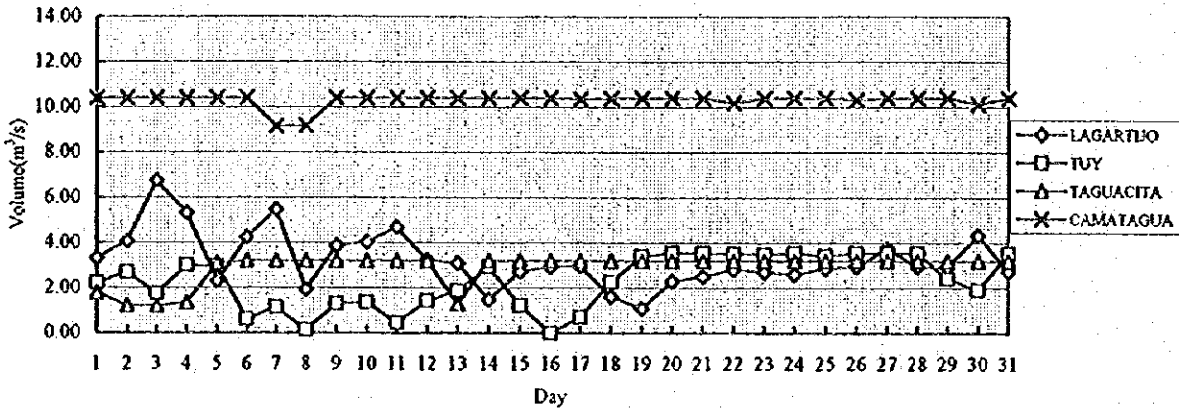


THE STUDY ON  
THE ENVIRONMENTAL IMPROVEMENT PROGRAM OF THE UPPER AND MIDDLE  
STREAM OF THE TUY RIVER BASIN  
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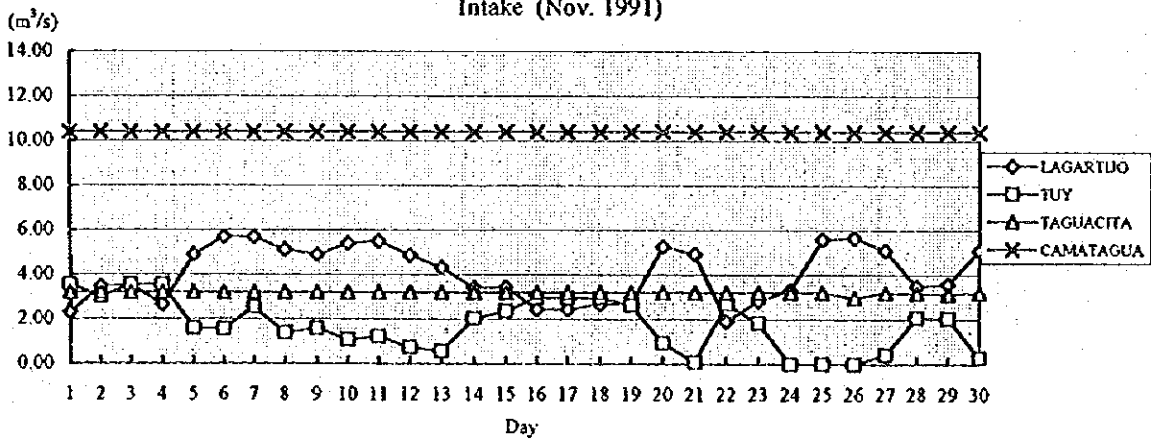
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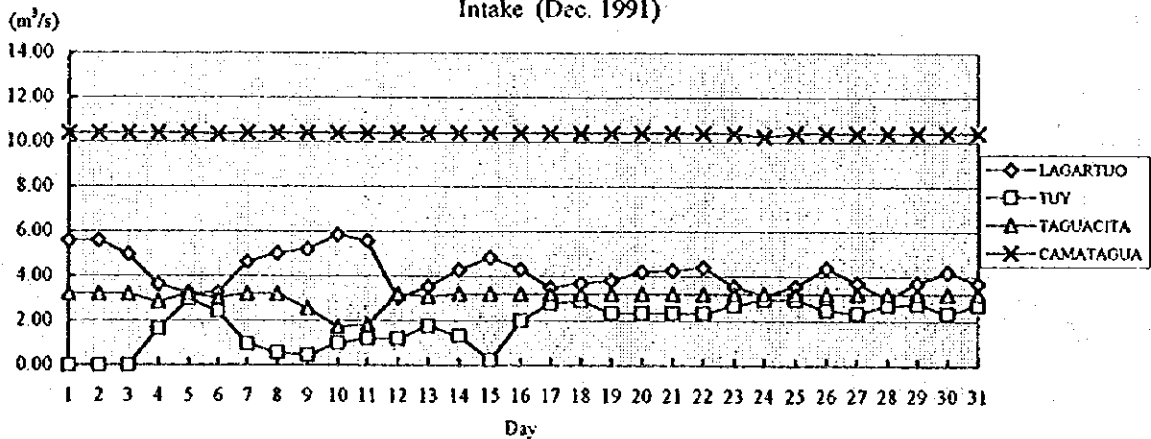
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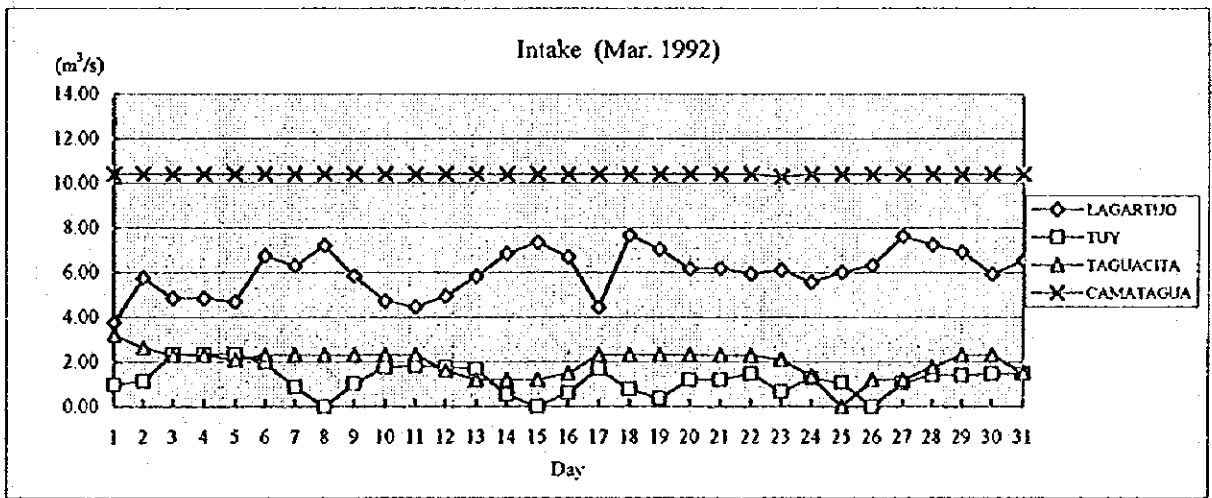
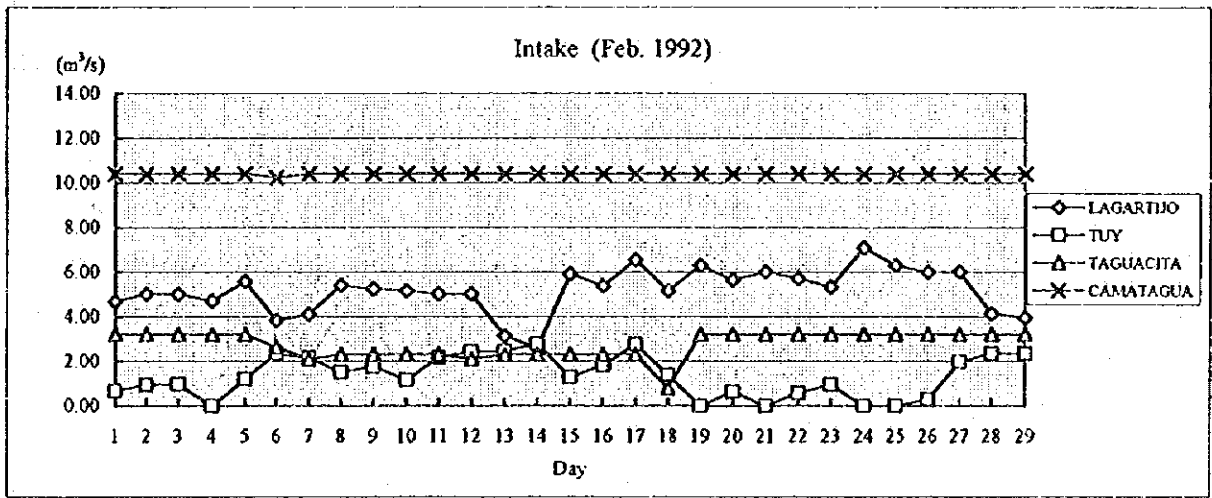
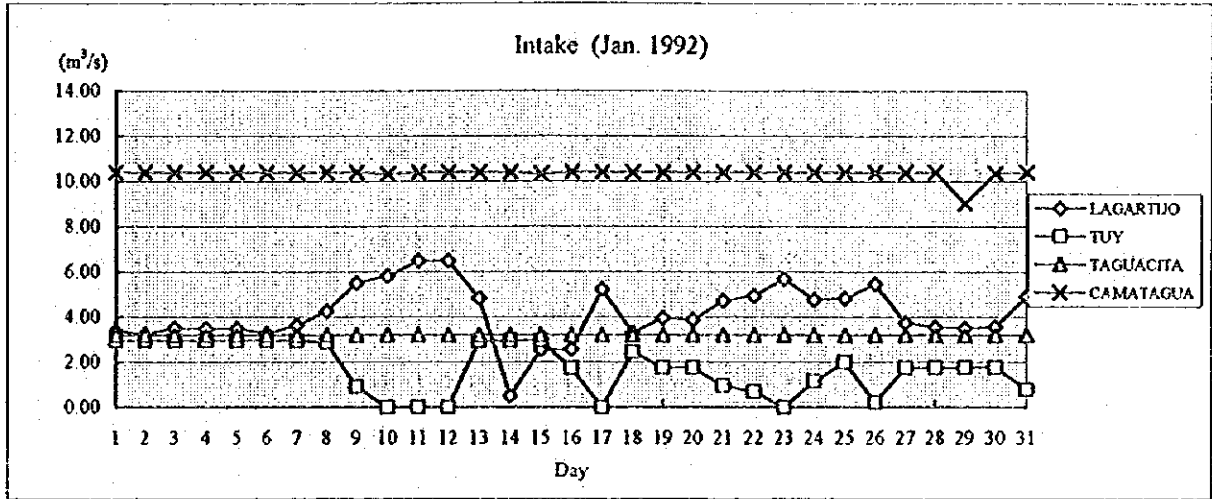


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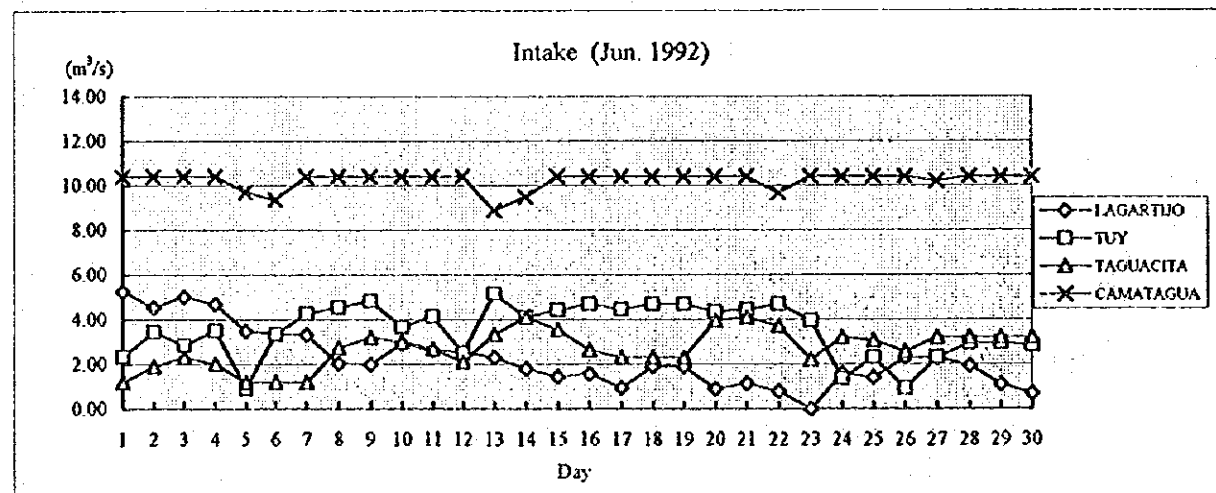
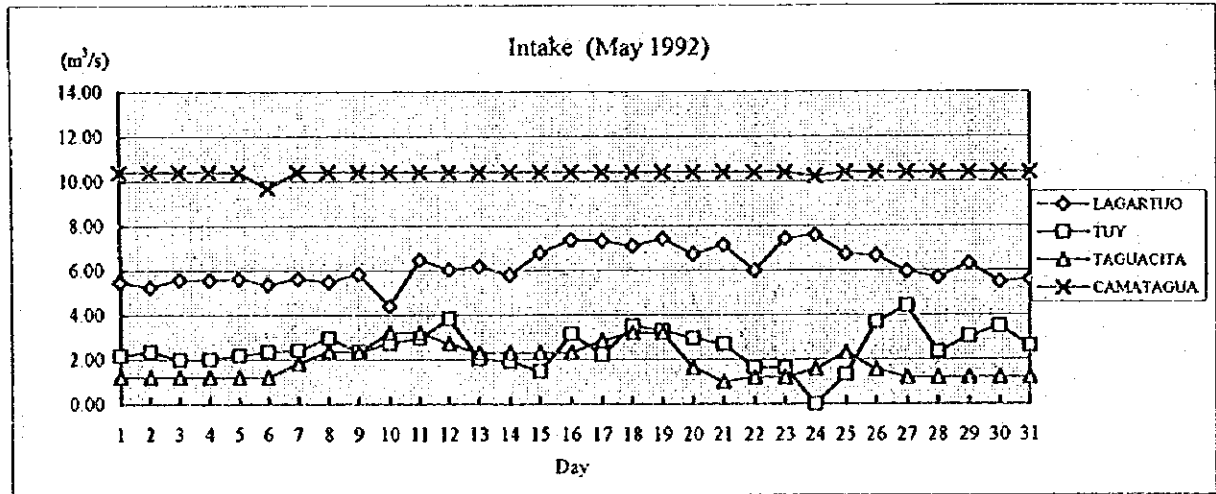
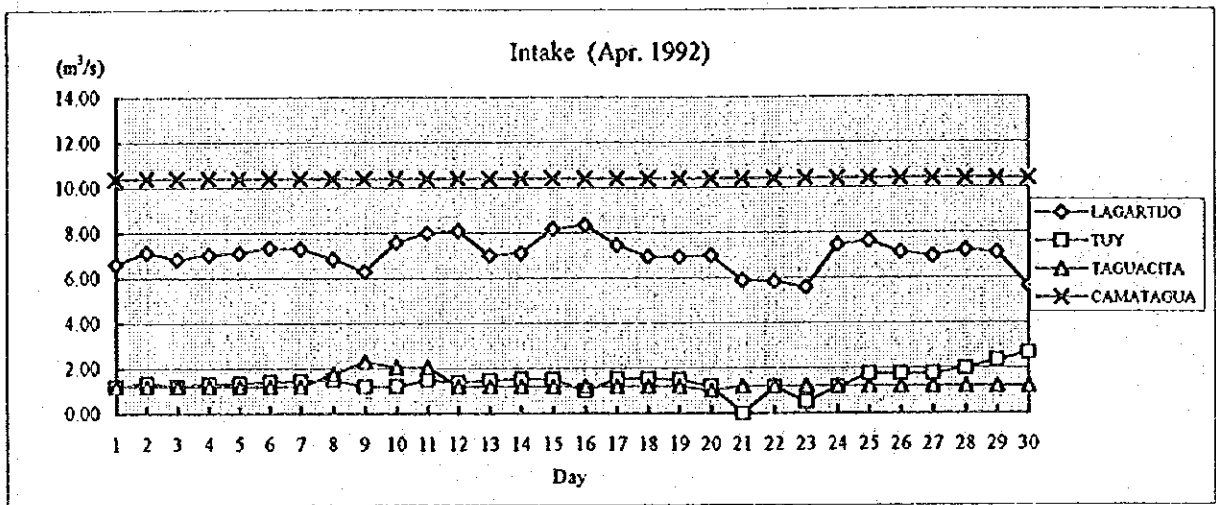




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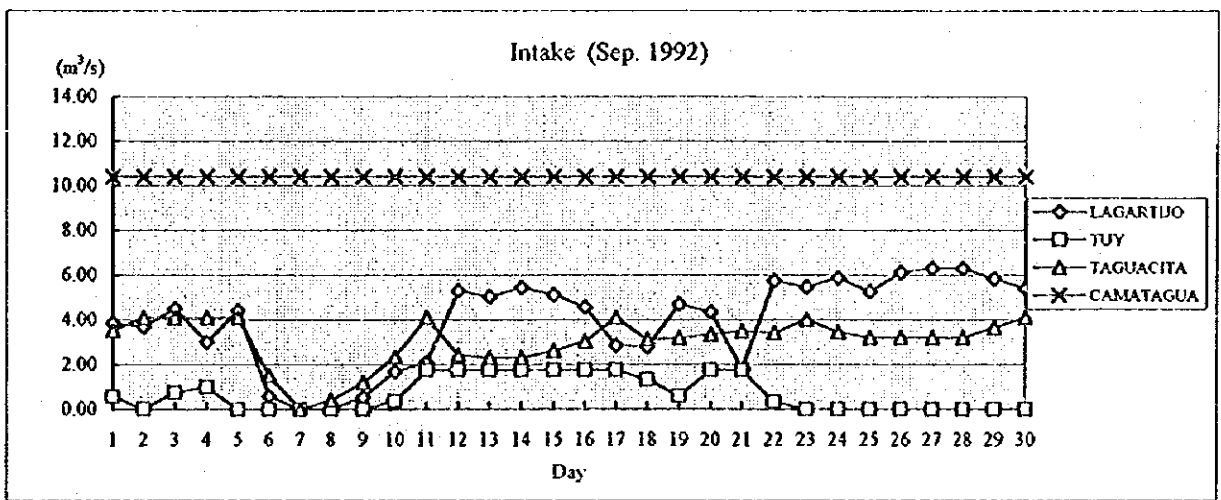
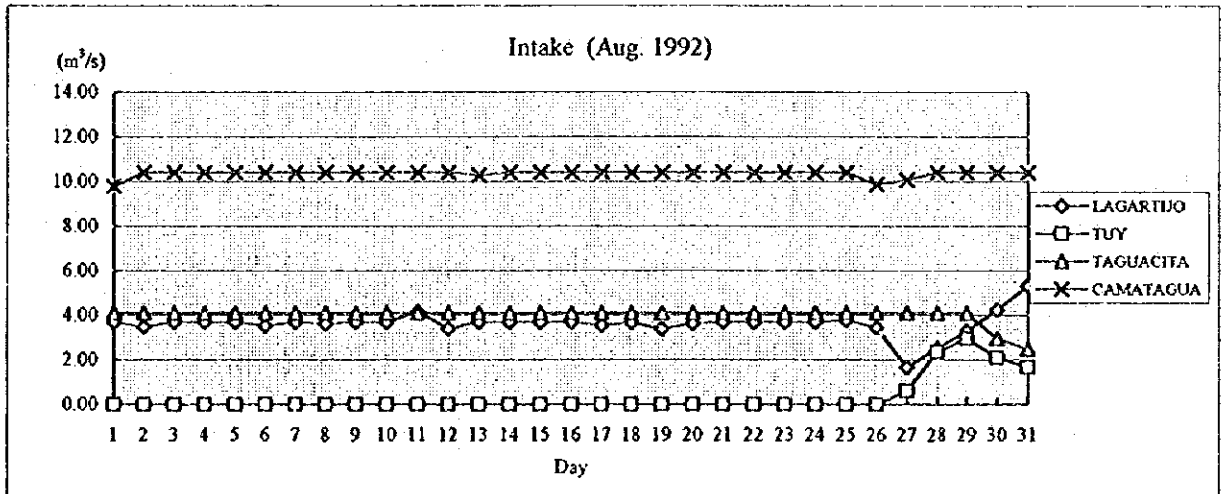
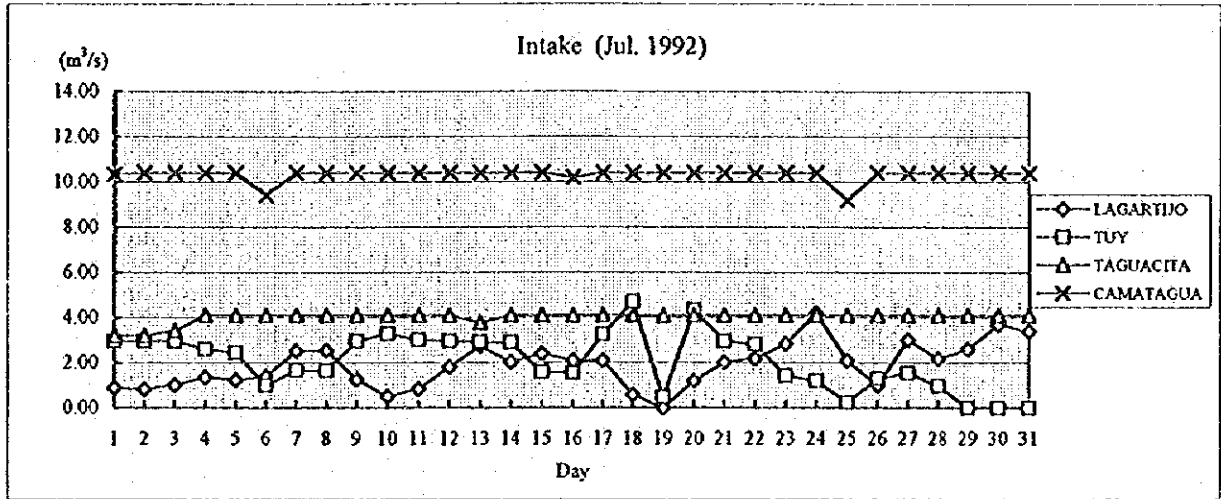
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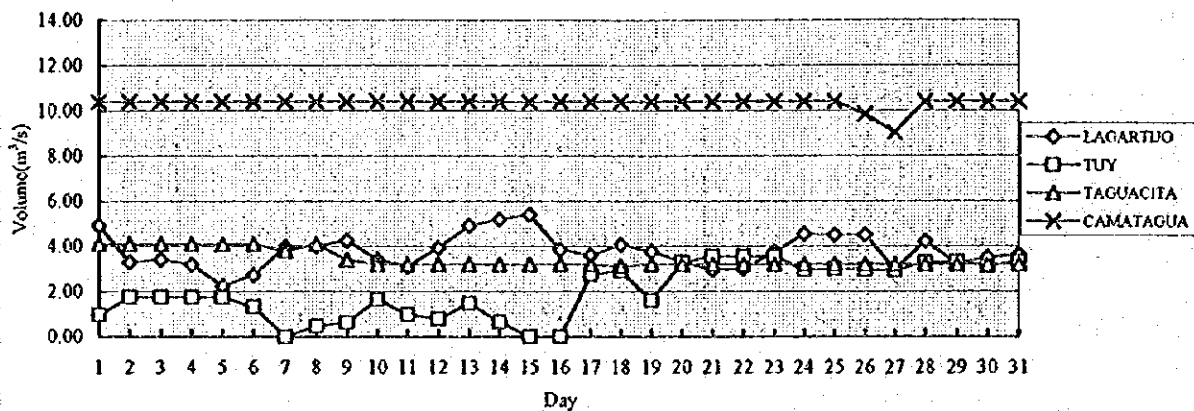


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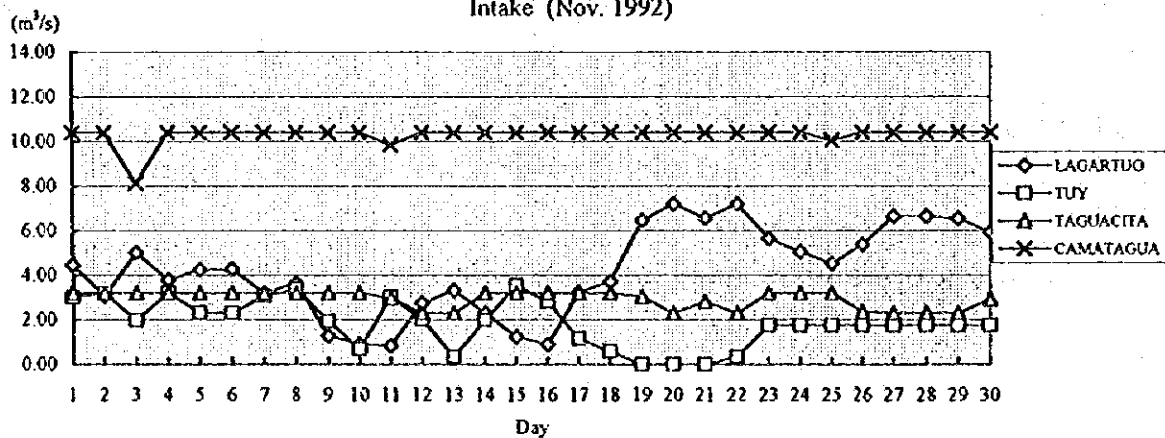
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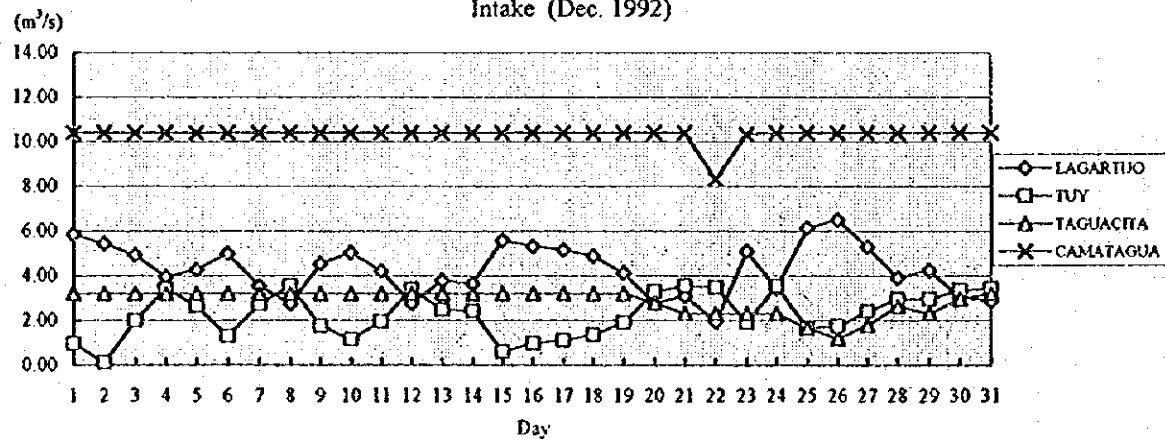
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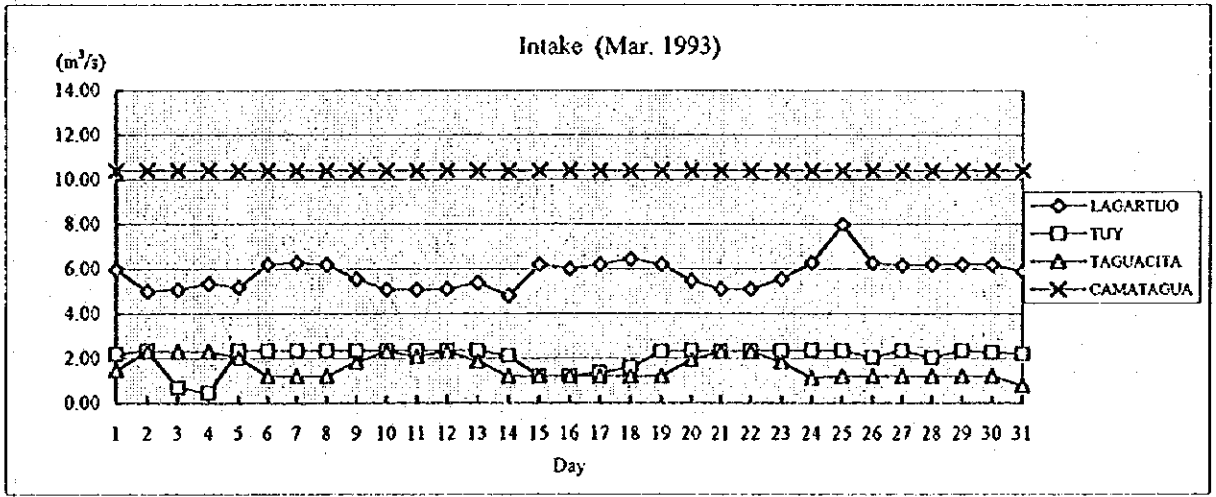
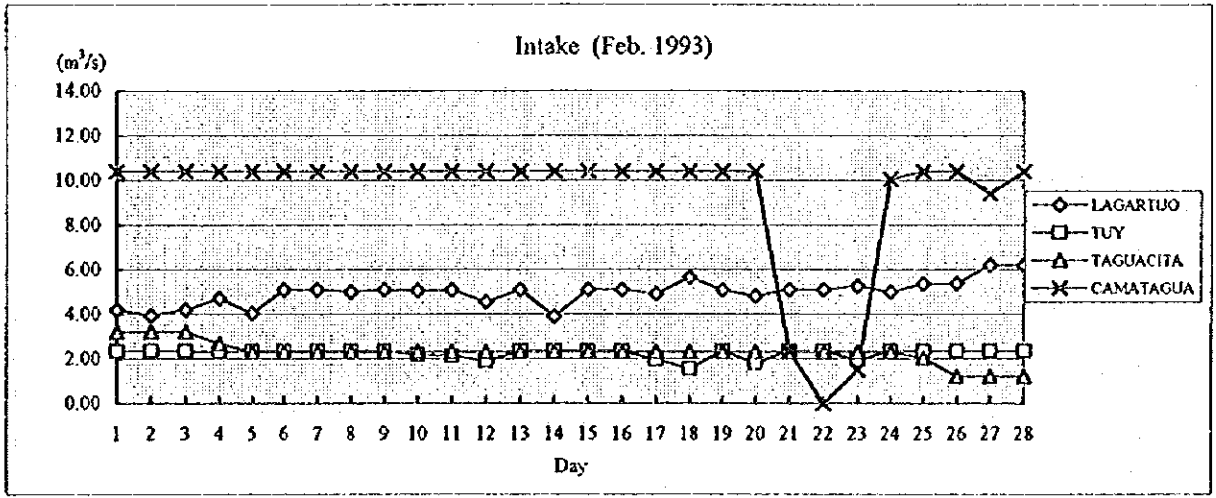
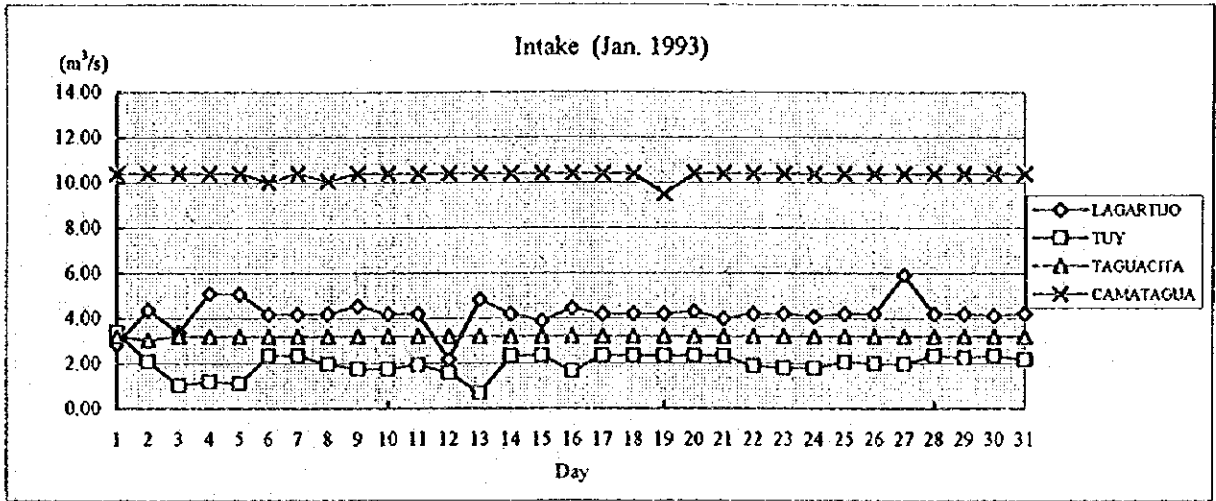
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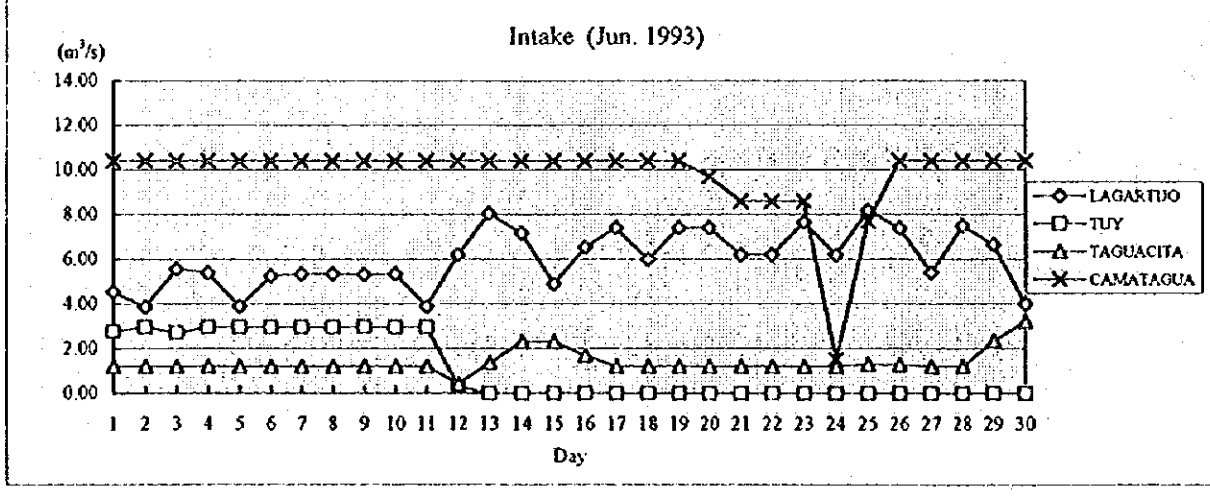
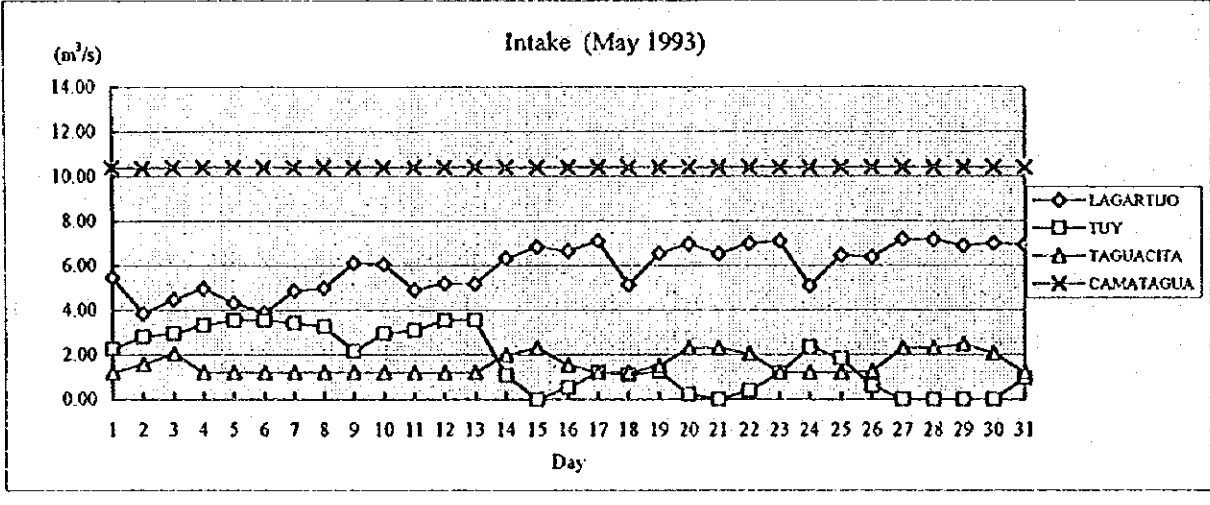
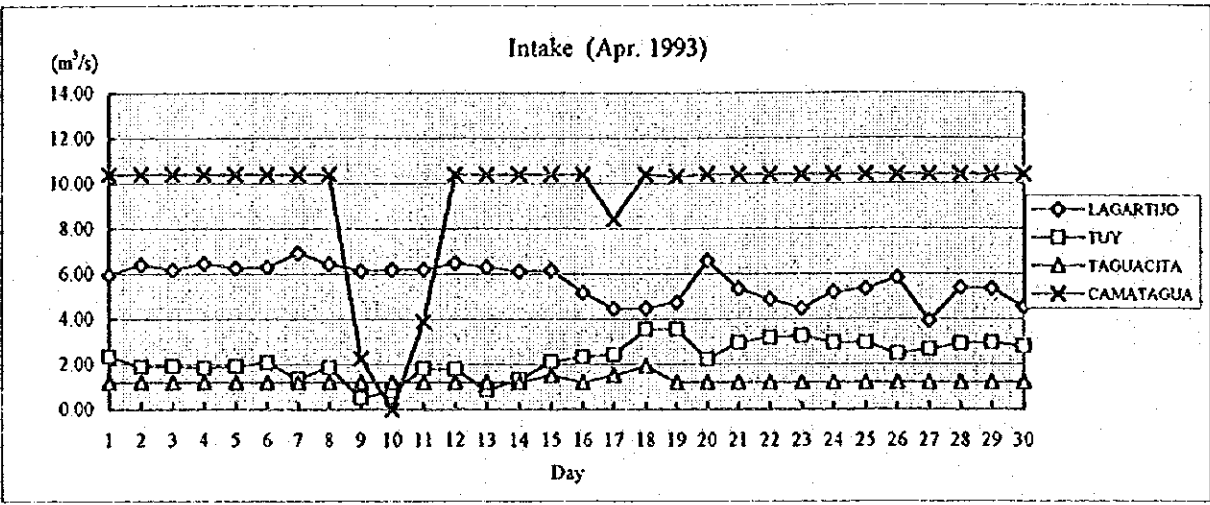
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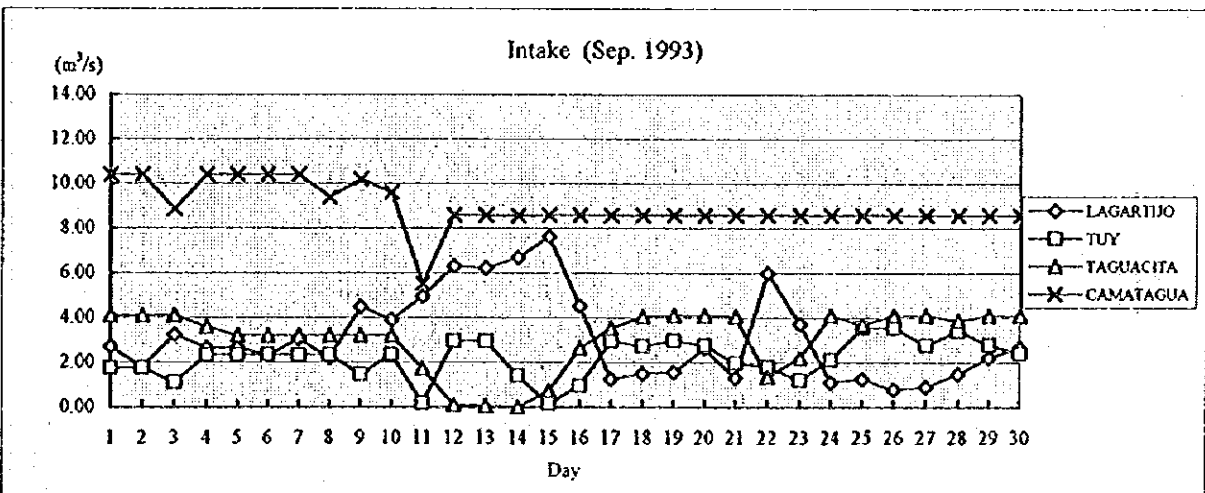
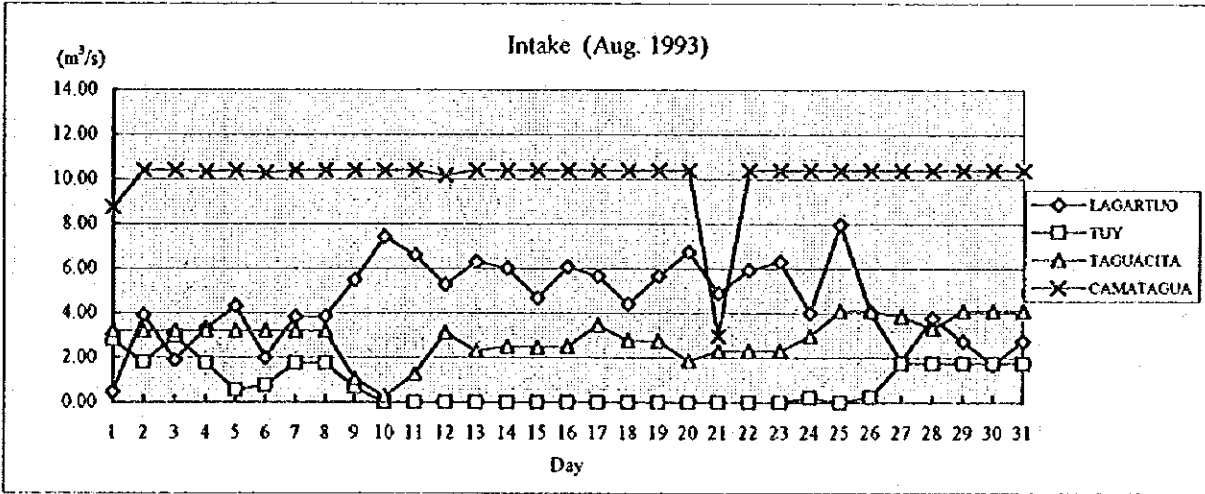
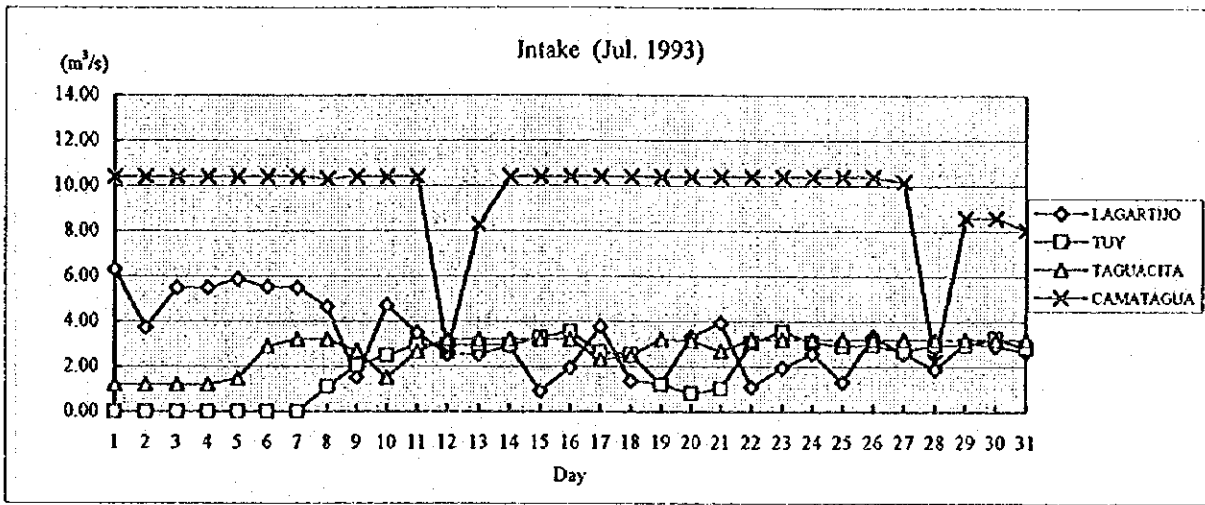
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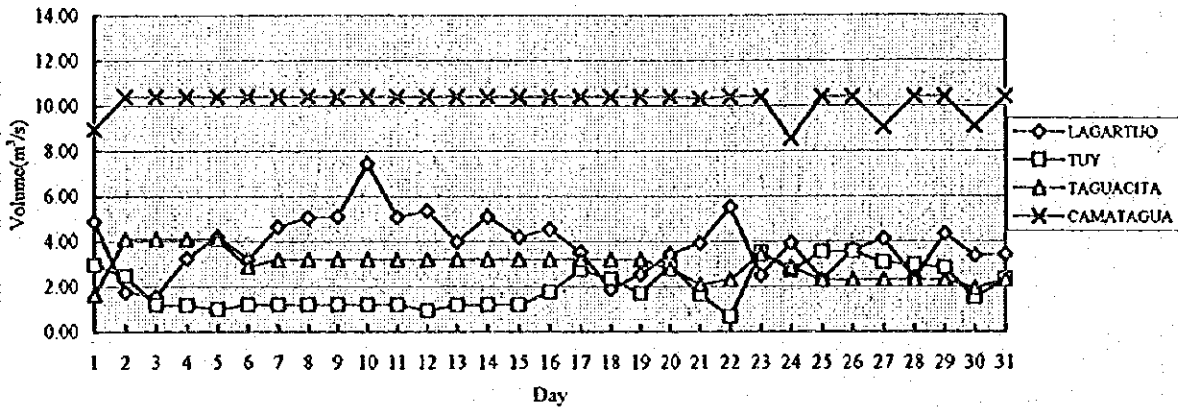


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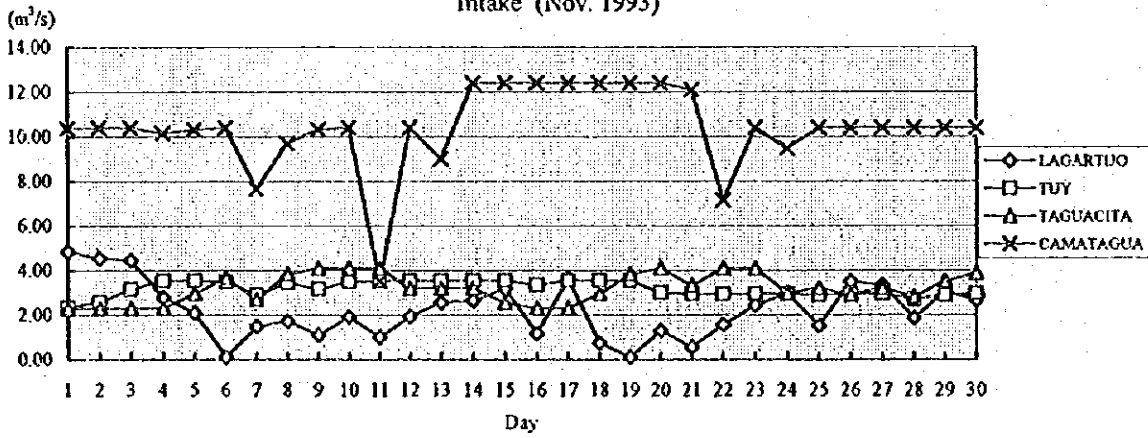
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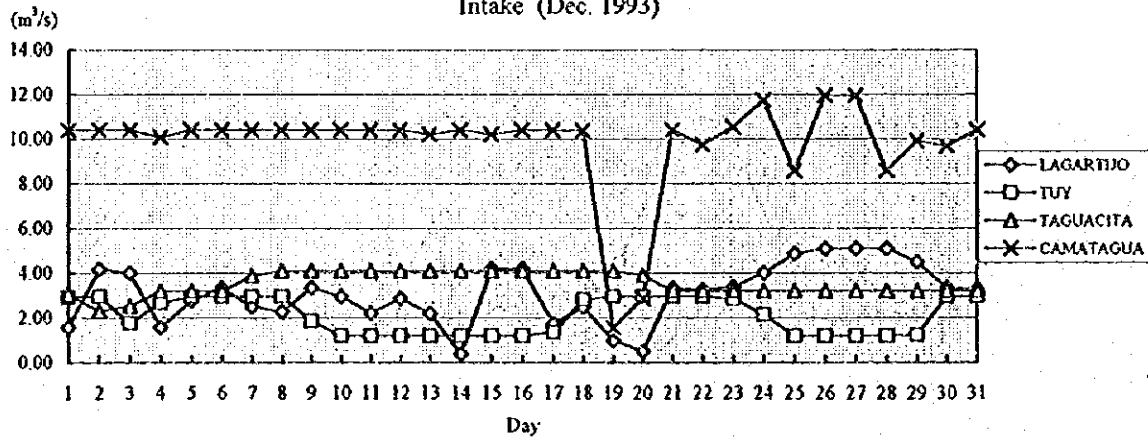
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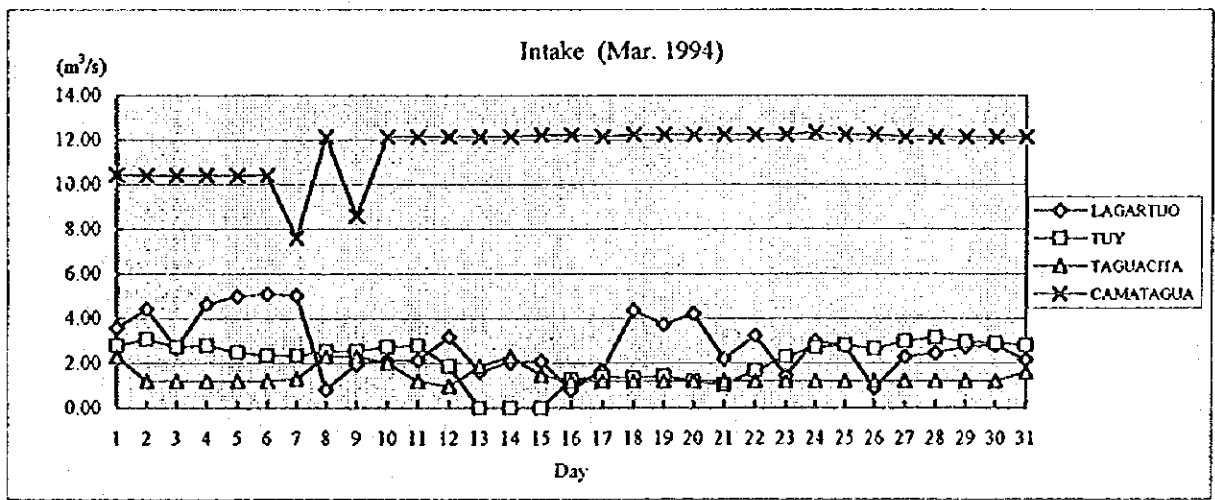
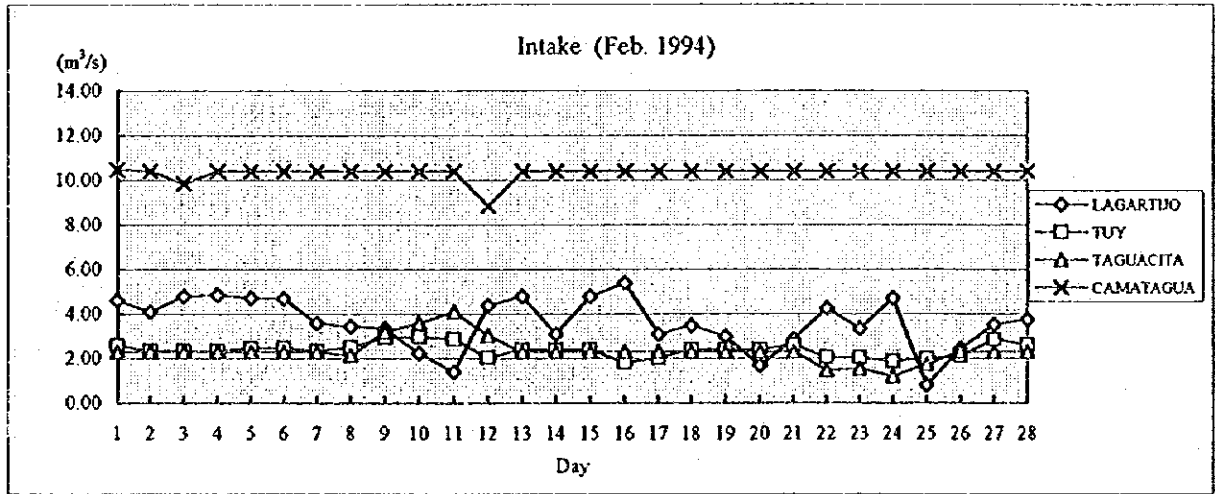
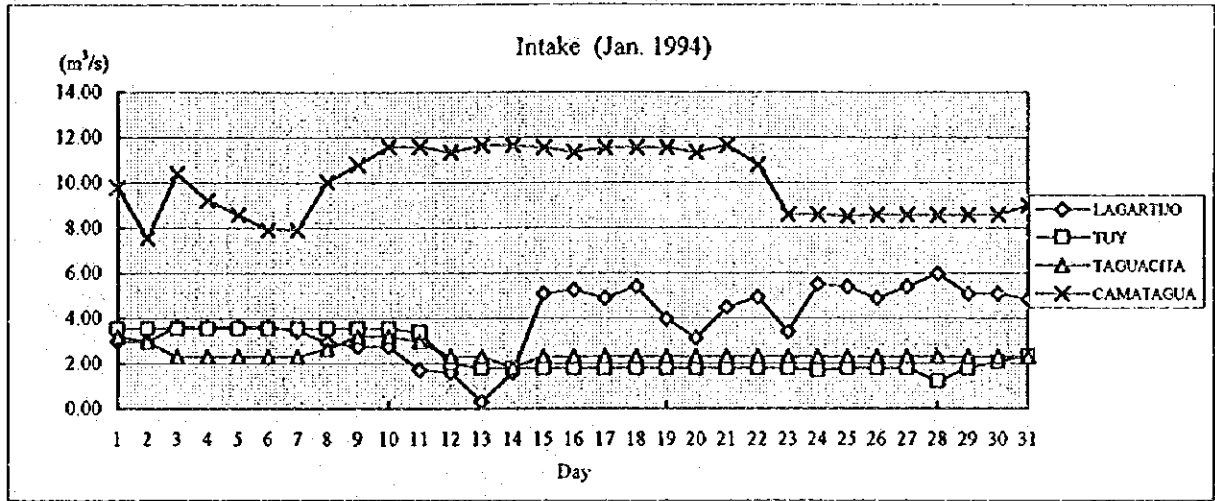


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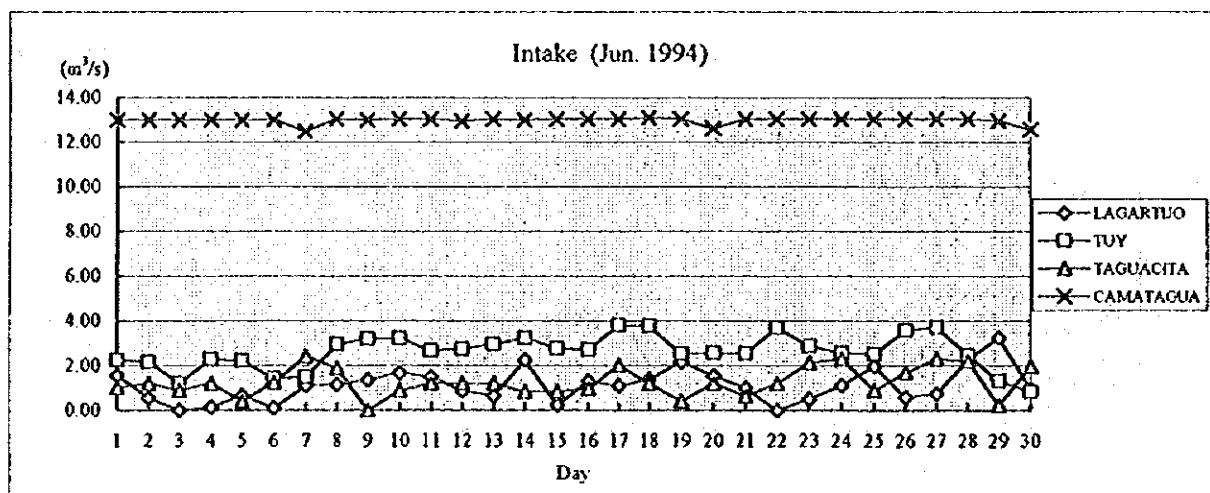
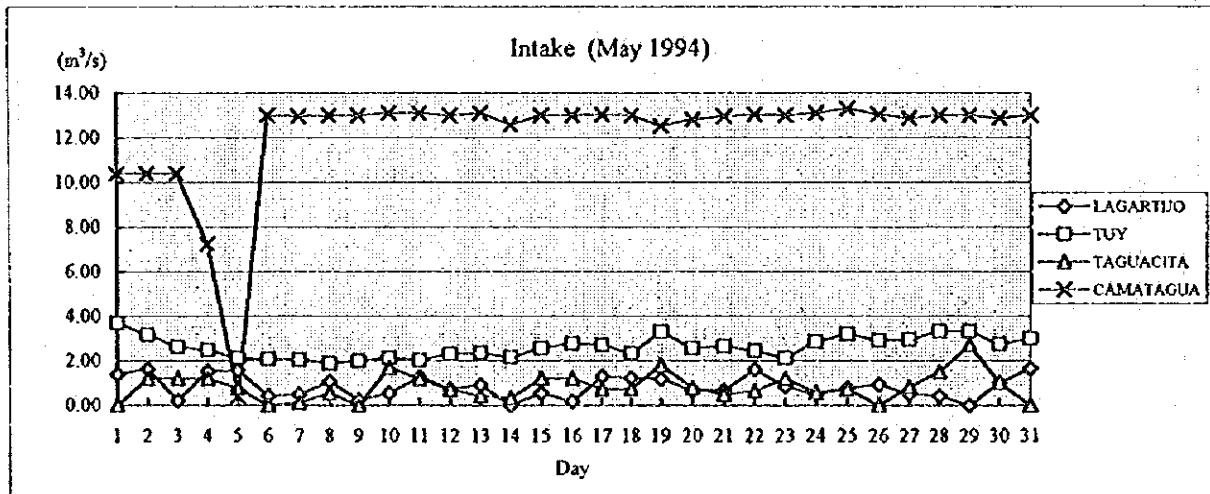
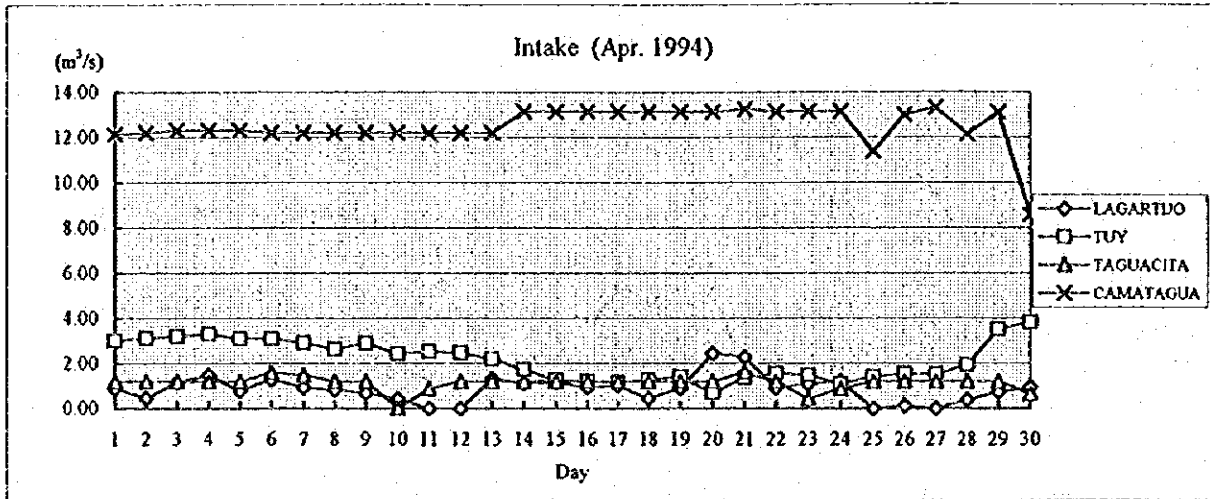




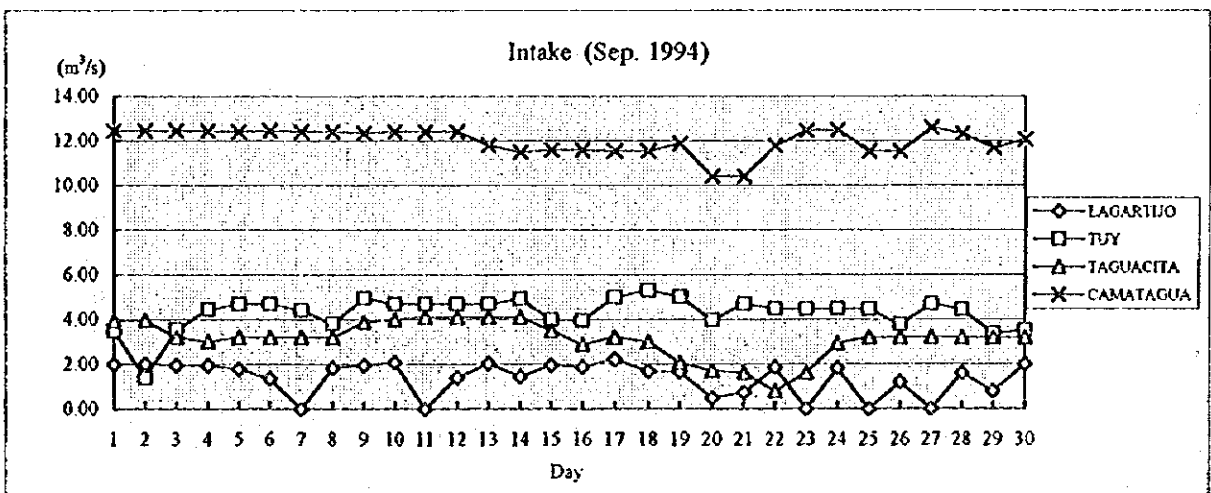
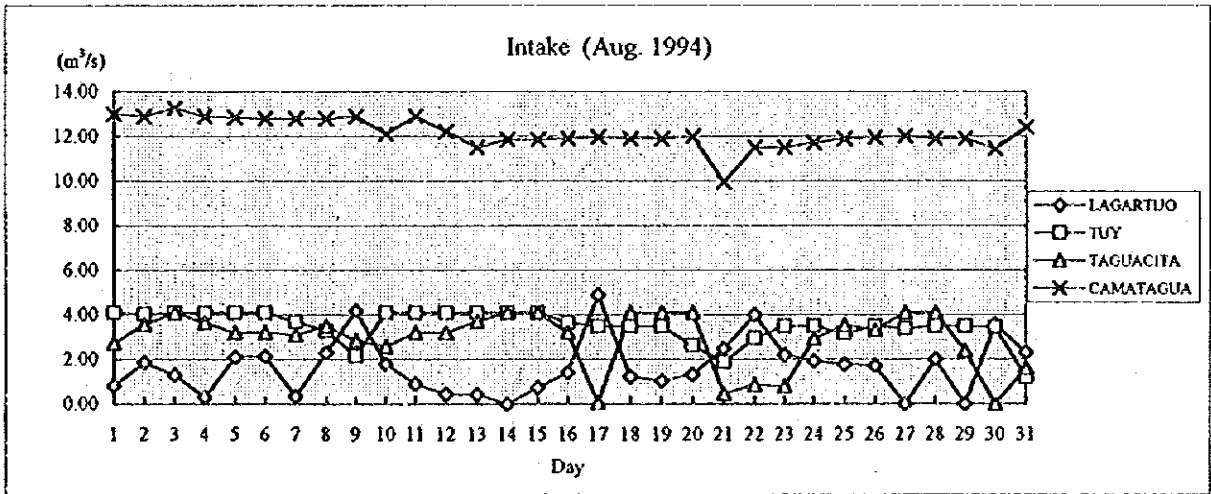
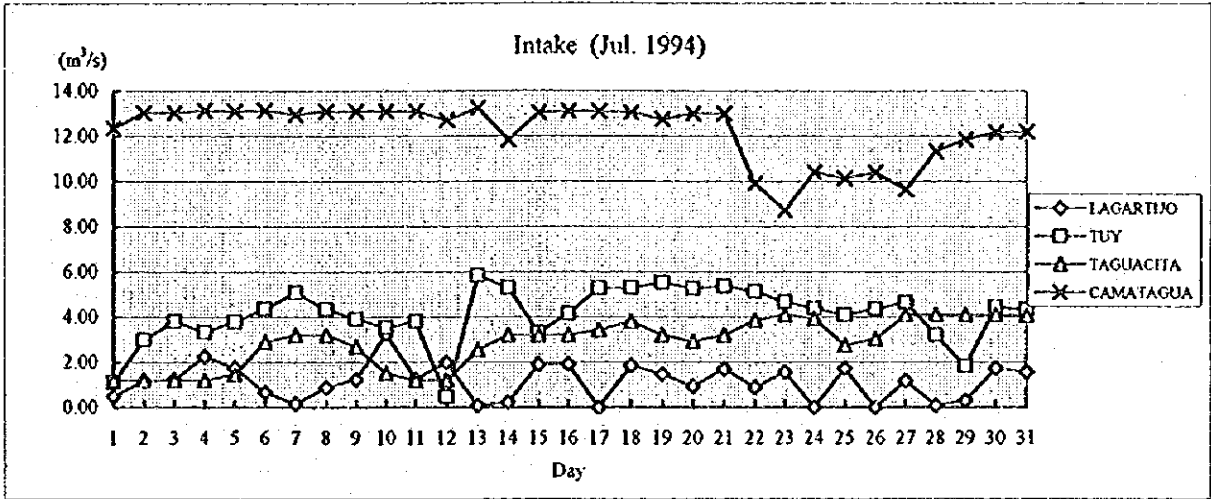
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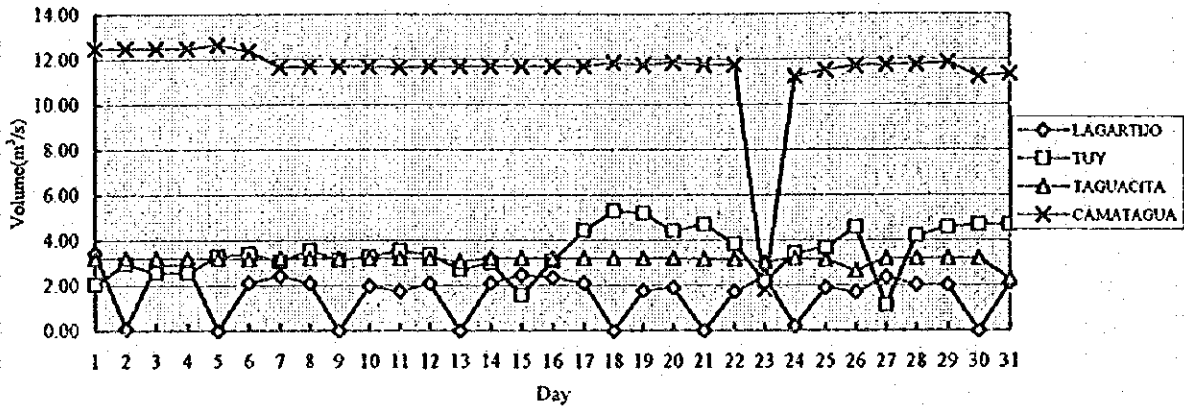


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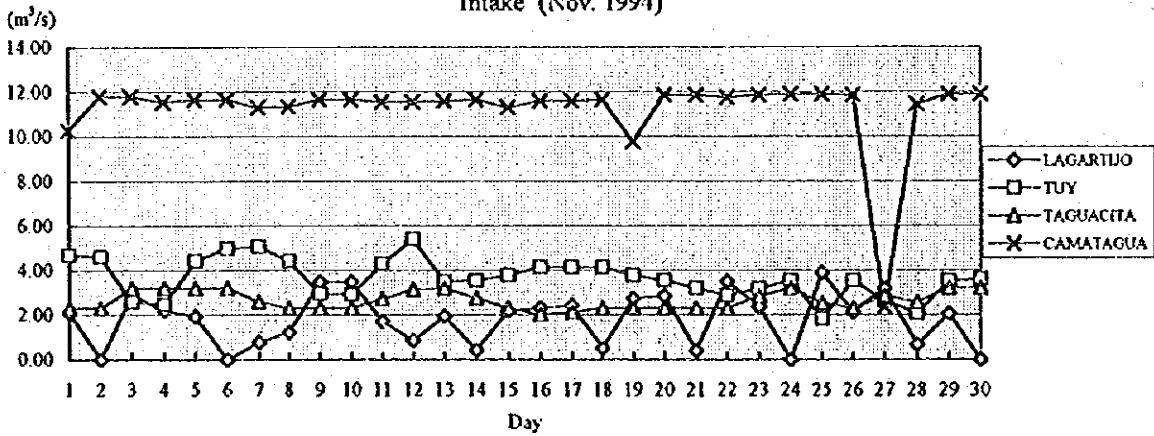
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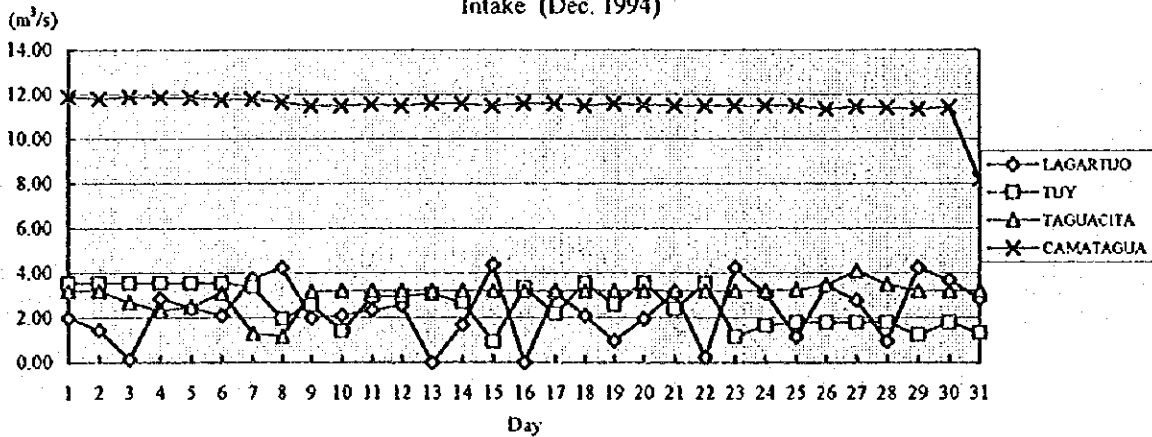
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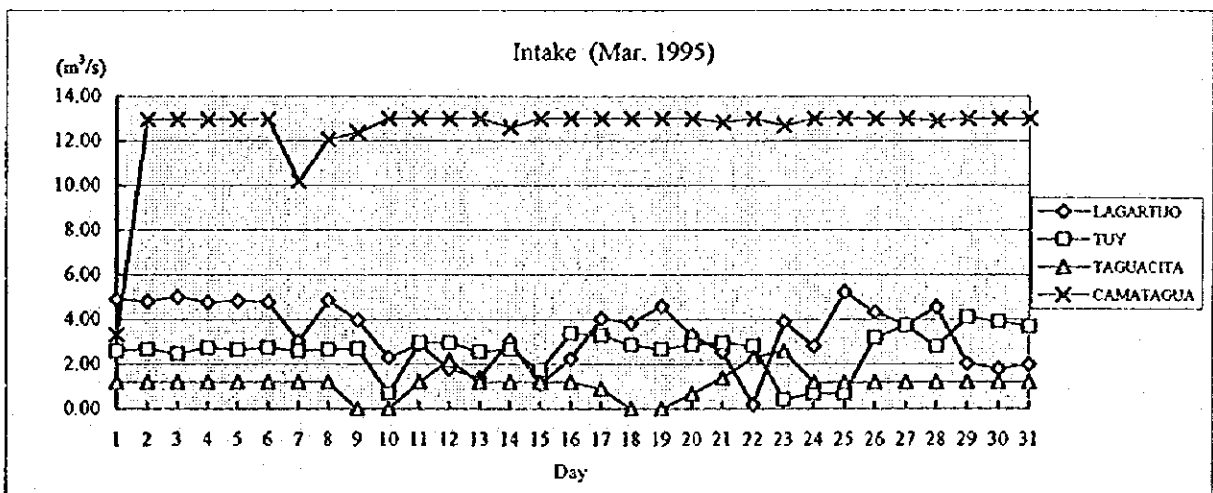
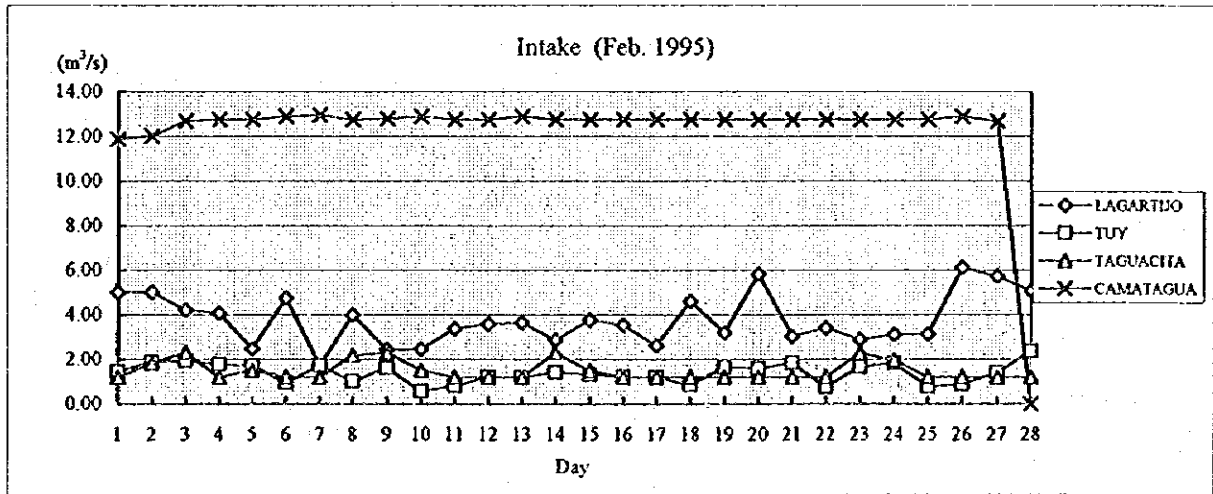
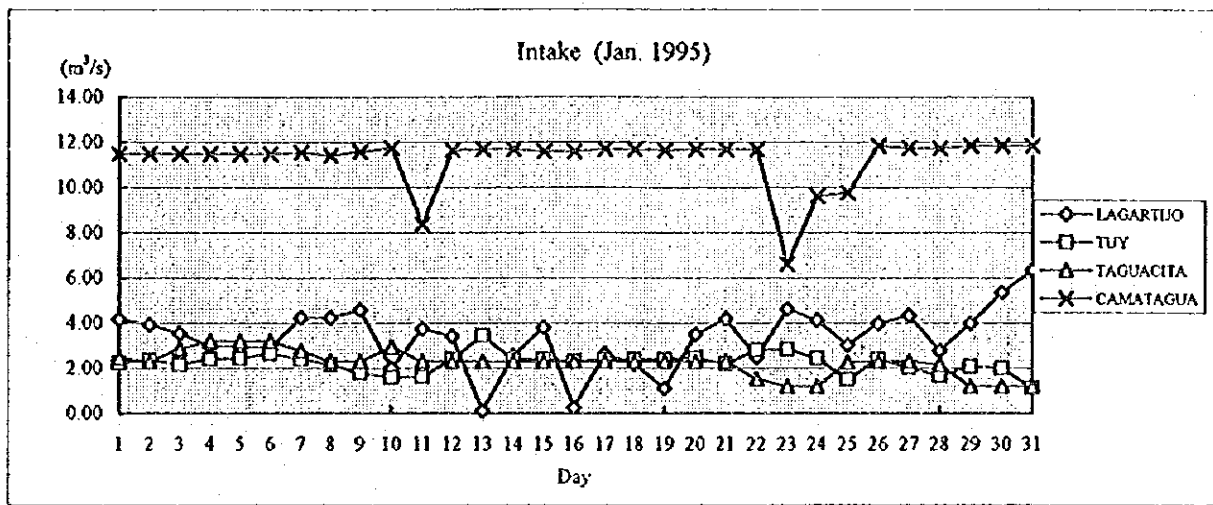
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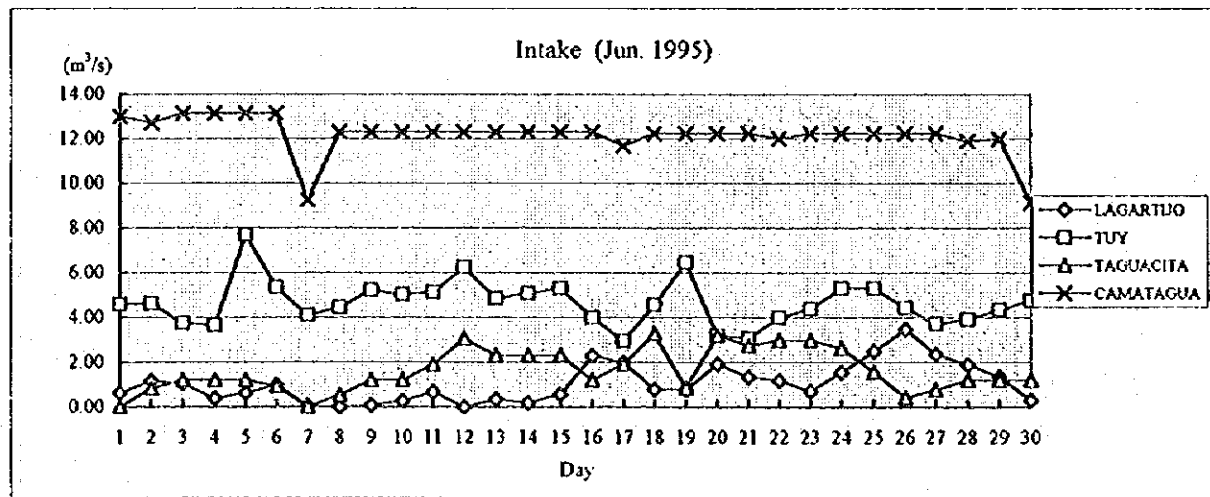
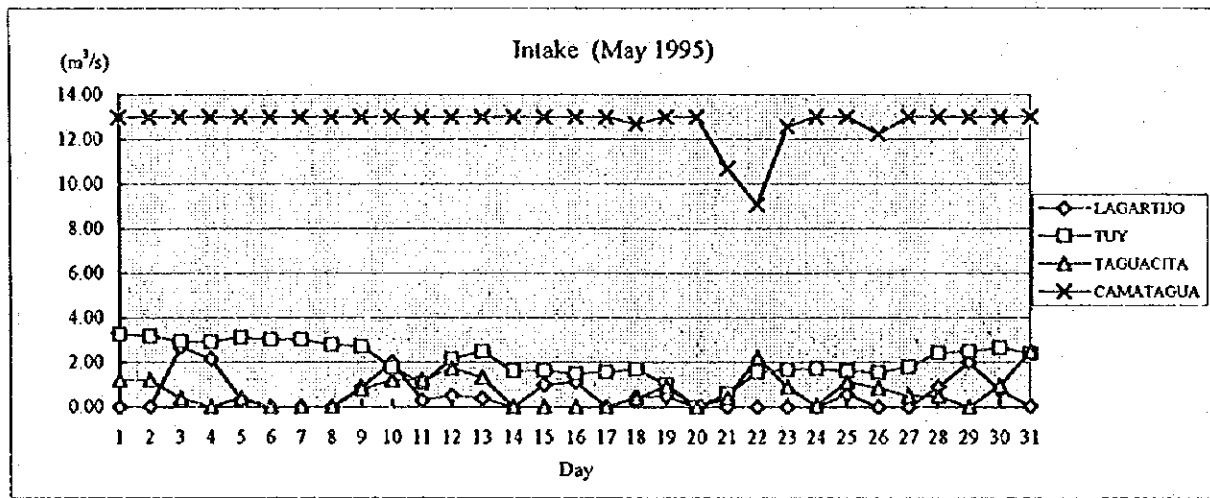
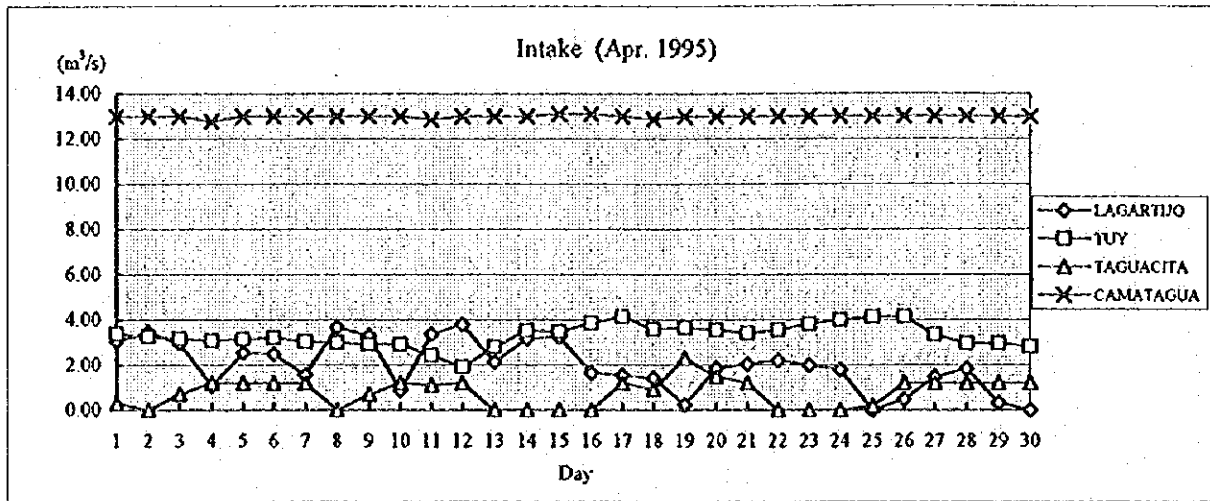
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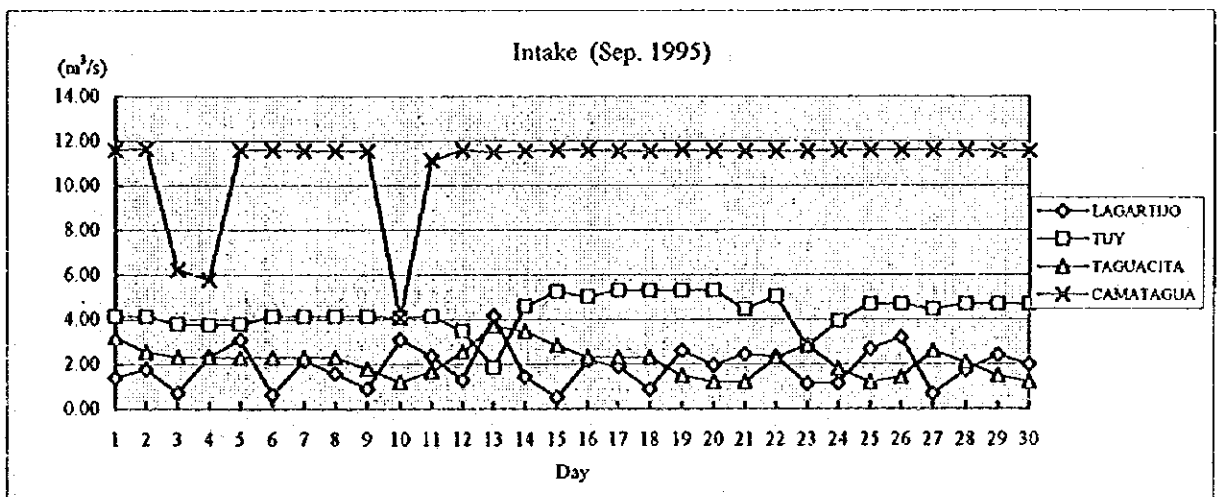
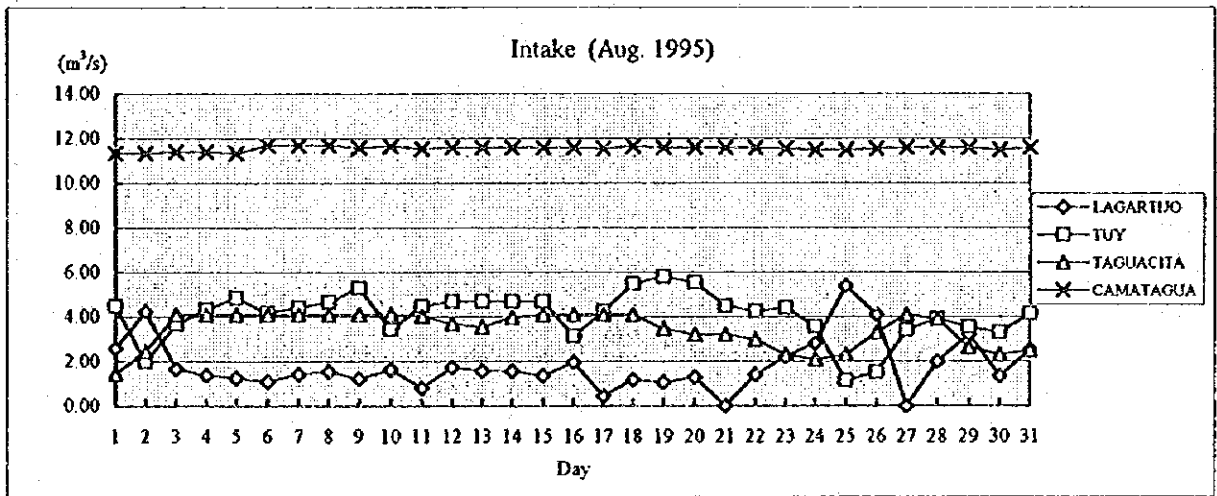
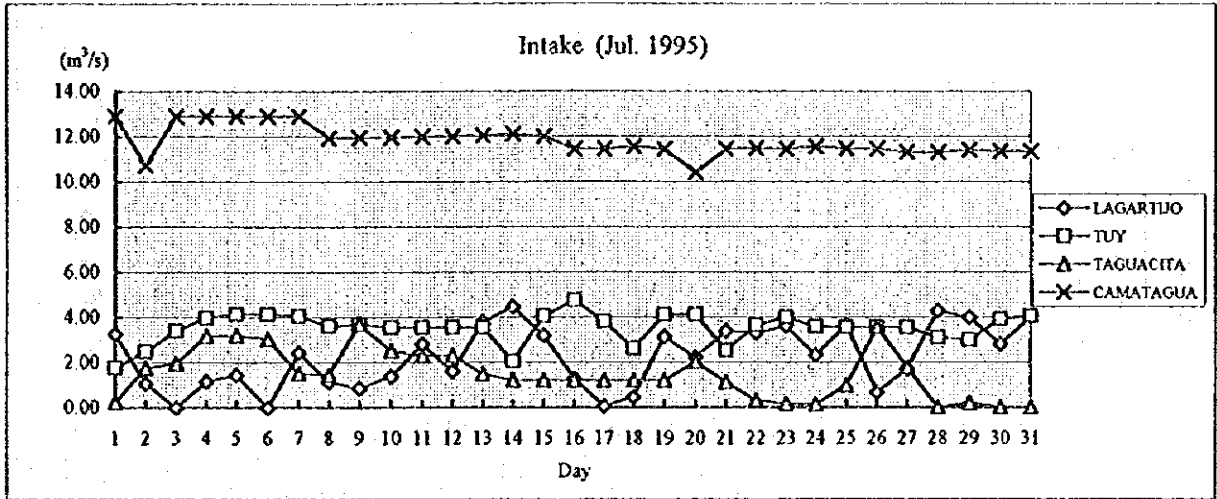
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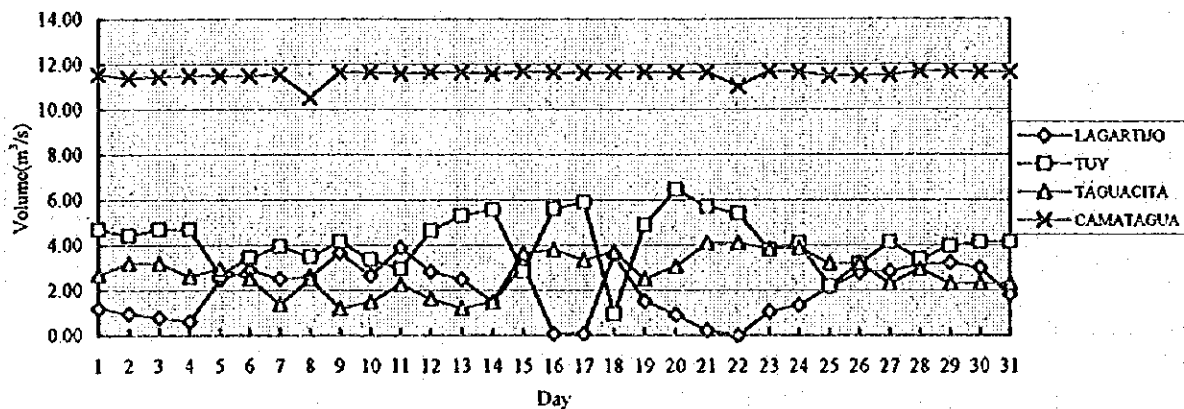


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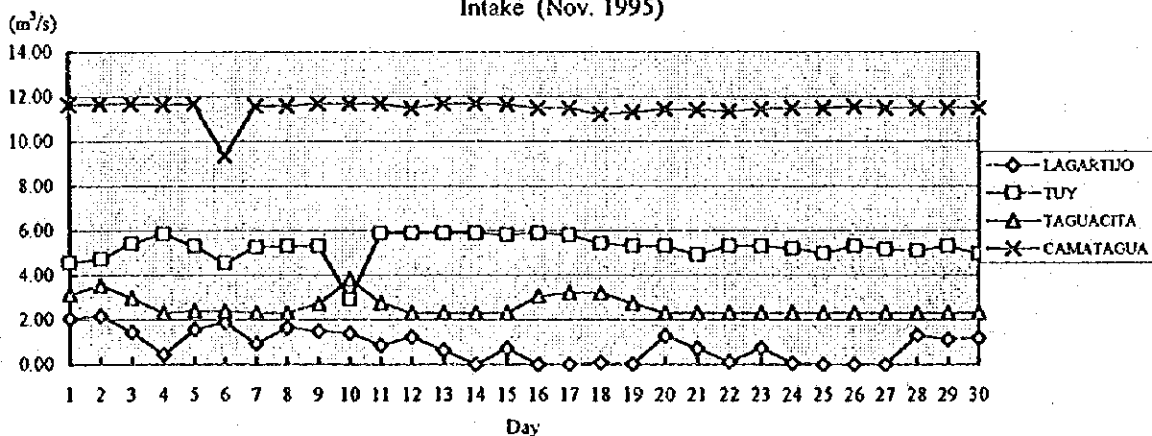
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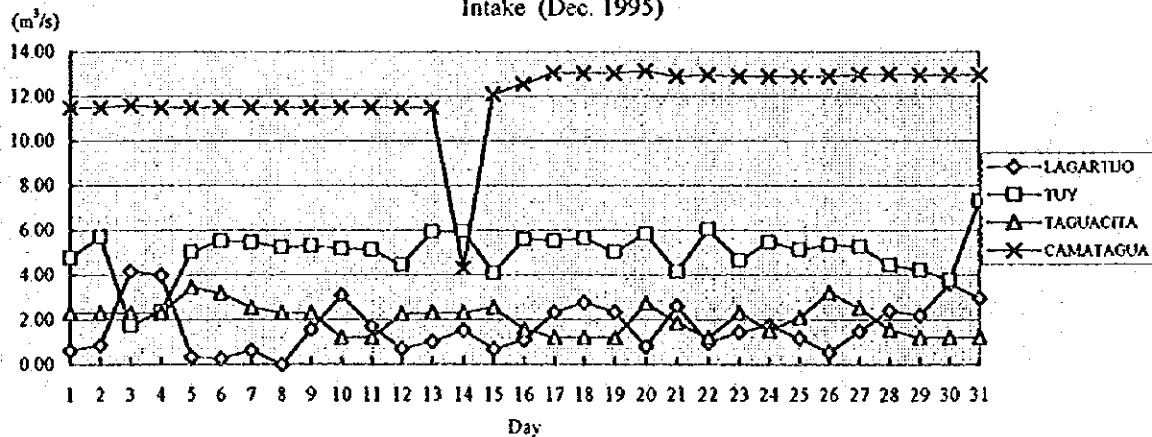
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## PARADAS SISTEMA DE BOMBEO TUY I AÑO 95

FECHA	MOTIVO	TIEMPO
27-01-95	Parada del sistema por caída en la intermedia E-12. Falta de tensión 110 V c/c	01:03
09-02-95	Por mantenimiento de las termas en la E-12	15:00
10-02-95	Parada del sistema por explosión en la alimentación del 66 KW E-11	11:00
11-02-95	Parada del sistema para realizar trabajos eléctricos en la E-11	08:45
12-02-95	El sistema volvió a parar por los trabajos de E-11	05:30
15-02-95	Parada del sistema para recuperar los niveles en la planta de Caujarito	12:15
18-02-95	Cayó bombeo por disparo de la línea INOS 2	01:00
20-02-95	Parada por problema eléctrico	07:30
21-05-95	El sistema viene parado por problema en la línea 115 KW Sta Teresa	20:15
06-06-95	Parada para recuperar los niveles en la planta de Caujarito	08:10
11-06-95	El sistema viene parado por falla del anillo de lubricación y Rudio Estrano	06:30
19-06-95	Parada del sistema por problema en la bomba del grupo N 4 E-11	05:20
20-06-95	Parada del sistema por reparación en el rompecarga	17:55
28-06-95	El sistema cayó por caída de bombeo E-12	00:40
01-07-95	Cayó bombeo por ( Cadafe ) problemas en sub estación San Geronimo	03:40

## PARADAS SISTEMA DE BOMBEO TUY I AÑO 95

15-07-95	El sistema fue parado por reparación de fuga de agua en el punto alto	03:52
09-09-95	Cayó el bombeo total por disparo de la Terma 2 por Cadafe	07:45
19-09-95	Paró el sistema por pruebas en la intermedia	02:12
29-09-95	El sistema se paró por trabajo mecánico en la E-13	13:00
18-09-95	El sistema se paró por problema del grupo N 2 E-13 (mecánico)	07:00
24-11-95	El sistema se paró por pruebas a realizar por Cadafe	07:00
10-12-95	Por trabajo en la línea 115 KW Mariposa II por Cadafe	00:40

## PARADAS SISTEMA DE BOMBEO TUY II AÑO 95

FECHA	MOTIVO	TIEMPO
16-02-95	Cayó bombeo por falla eléctrica en la E-22	01:30
14-03-95	El sistema se paró por trabajos eléctricos y mecánicos	15:37
24-04-95	El sistema paró por reparaciones en el alimentador Norte E-25	14:25
25-04-95	El sistema viene parado por el mismo problema anterior	07:05
04-05-95	El sistema paró por control de nivel del embalse Lagartijo	72:00
12-05-95	El sistema paró por control de nivel del embalse Lagartijo	79:25
17-05-95	Se procedió a parar el sistema por instrucciones de Capital II	19:05
18-05-95	Se paró el sistema para colocar una válvula de línea en la salida del embalse Lagartijo	14:35
20-05-95	El sistema continua parado por los trabajos en la aducción del embalse Lagartijo	24:25
24-05-95	El sistema paró por control de embalse Lagartijo	07:17
07-06-95	Cayó bombeo total por falla eléctrica (Cadafe)	08:20
07-07-95	Se paró el sistema por instrucciones de Capital II	05:40
08-07-95	Estuvo parado por las mismas notas anteriores	05:10
15-07-95	Cayó bombeo por problema de Cadafe en la Sub-estacion San Geronimo	00:30

## PARADAS SISTEMA DE BOMBEO TUY II AÑO 95

17-07-95	El sistema paró por instrucciones de Capital I por T11 y T12	04:05
10-09-95	Cayó bombeo por disparo por parte de Cadafe	00:50
22-09-95	Cayó bombeo por disparo de la Terma II de Cadafe	07:15
23-09-95	El sistema paró por disparo de la Terma y un pararrayos E-22	01:05
03-10-95	El Bombeo cayó por sobrecorriente en los transformadores I-II	01:05
08-10-95	El sistema cayó por disparo de la terma II de Cadafe	00:10
13-10-95	El sistema cayó por disparo de Cadafe	02:00
14-10-95	Cayó bombeo por disparo del seccionado de consumo propio E-21	01:48
15-10-95	Cayó bombeo por disparo de Cadafe	01:15
18-10-95	El sistema paró por caída de bombeo en la E-21 (eléctricos)	00:54
29-10-95	Cayó bombeo total por sobrecorriente en la alimentación del grupo 4 E-22	00:35
20-11-95	El sistema paró por trabajos programados por Hidrocapital	17:40

## PARADAS SISTEMA DE BOMBEO TUY III AÑO 95

FECHA	MOTIVO	TIEMPO
27-02-95	El sistema paró por trabajos programados en la Estación Mamonal	44:50
02-03-95	Cayó bombeo por disparo de la línea 230 de Cadafe	00:50
07-03-95	Paró el sistema por caída de bombeo E-32 por nache en seco	00:43
18-03-95	Cayó bombeo total por disparo de Cadafe (descarga atmosférica)	01:25
21-03-95	Cayó bombeo por disparo de grupo N 7 Estación 32 (fallo maniobra de parada)	00:30
17-04-95	El sistema paró por T 11 en la planta de Caujarito (por Turbidez)	02:55
20-04-95	Se paró el sistema por disparo de la E-32 problema de los instrumentos en la misma	00:57
20-05-95	El sistema paró por disparo de la línea 115 Kv. Santa Teresa, Camatagua. Bajo nivel planta de Caujarito y disparo de Mamonal	16:15
22-05-95	Cayó bombeo por nache seco en la E-33 por disparo de la E-32 señalizando barra de alimentación a tierra I. Falla en el armario de regulación	06:55
24-05-95	Cayó bombeo por disparo de la Terma Diego de Losada Camatuy	00:40
25-05-95	Paró el sistema por instrucciones de Capital 2 para subir los niveles en el embalse Ocumarito	15:45
26-05-95	El sistema viene parado por el mismo motivo del día 25-05-96	02:35
29-05-95	Cayó bombeo total por caída en la Estación 32 por falla técnica del personal 80.86	00:23

## PARADAS SISTEMA DE BOMBEO TUY III AÑO 95

06-06-95	El sistema paró por bajo nivel en la Estación 32 y caída de bombeo en las estaciones 31 y Mamonal por mínima tensión	06:23
27-06-95	Cayó bombeo total por el Tuy III señalizando Nache en seco, falla en armario de regulación, el grupo N.4 E-32 señalizando disparo por sobrecorriente, cortocircuito y protección diferencial	03:10
28-06-95	El sistema paró por instrucciones de Capital 2 por rotura de tubería en la Avenida Guzman Blanco del Valle (Caracas)	06:28
29-06-95	El sistema paró por pruebas de la compañía Edelca en la Est 31	06:25
01-07-95	Cayó bombeo total por Cadafe. Problema en la sub-estación San Geronimo	06:48
14-07-95	Cayó bombeo total por nache seco Estación 33 debido a la caída de bombeo estación 32, señalizando baja tensión, falla en armario de regulación y barra de alimentación N-1 a tierra. Esto debido a problema en la Sub-estación San Geronimo por parte de (Cadafe)	04:25
16-07-95	El sistema paró por problema en la estación Mamonal. Problema de alta temperatura en los grupos	14:12
02-08-95	Cayó bombeo en la Estación 32 y 33 motivado a falla eléctrica en el interruptor que alimenta la planta de Caujarito de la Estación 32, el sistema viene parado por el mismo problema	36:75
03-08-95	La Estación 32, el sistema viene parado por el mismo problema	36:75

## PARADAS SISTEMA DE BOMBEO TUY III AÑO 95

09-09-95	El sistema paró por reparaciones de tramo de la tubería de descarga de Santa Barbara	20:00
20-09-95	Cayó bombeo por disparo de la línea Camatuy Santa Teresa	04:40
22-09-95	Paró el sistema por caída del grupo N 7 Estación 32 señalizando alta temperatura y aire de entrada y de salida sobrecalentado	01:40
26-09-95	El sistema paró por un cambio de terma y mediciones por parte de Edelca	7:40
02-10-95	Cayó bombeo total por Cadafe	03:50
25-10-95	Se paró el bombeo en la E-33 por disparo de la E-32 por sobrecarga	01:35
05-11-95	Se procedió a parar el sistema por disparo de mínima tensión en la Estación 31	03:45
13-12-95	Se procedió a parar el sistema por trabajos en la Estación Mamonal, reparación de la válvula de succión y cambio de amortiguadores de los hidráulicos de los grupos 3 y 4 y reparación de la compuerta de Caicita, y cambio de la válvula de retención de los grupos 3 y 4 de mamonal	16:30