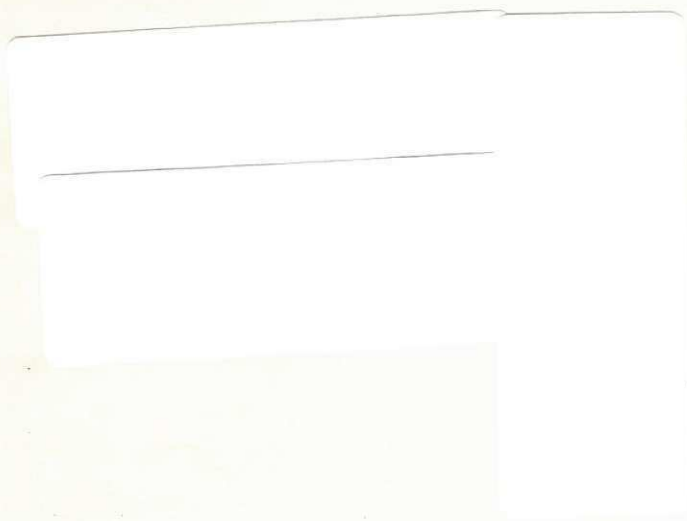


UNIVERSIDADE FEDERAL DA PARAIBA
CENTRO DE CIÊNCIAS E TECNOLOGIA
DEPARTAMENTO DE ENGENHARIA CIVIL
ÁREA DE ENGENHARIA DE RECURSOS HÍDRICOS

RELATÓRIO DE ESTÁGIO SUPERVISIONADO



CAMPINA GRANDE PB

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UNIVERSIDADE FEDERAL DA PARAIBA
CENTRO DE CIÊNCIAS E TECNOLOGIA
DEPARTAMENTO DE ENGENHARIA CIVIL
AREA DE ENGENHARIA DE RECURSOS HÍDRICOS

Relatório de Estágio Supervisionado

AVALIAÇÃO DAS CURVAS COTA X ÁREA E COTA X VOLUME
PARA O ESTUDO DAS DISPONIBILIDADES HÍDRICAS DOS RE-
SERVATÓRIOS DO ESTADO DA PARAIBA.

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Sumé - PB

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1.0 - APRESENTAÇÃO

Este relatório diz respeito ao estágio supervisionado, realizado por ÉRICA MEDEIROS C. B. DE SOUSA, sob número de matrícula 8911223 - 6, aluna do curso de ENGENHARIA CIVIL da Universidade Federal da Paraíba - Campus II, realizado no Laboratório de Hidráulica da Área de Engenharia de Recursos Hídricos, sob regime parcial de 10 horas semanais. Tendo como supervisora a Professora MÁRCIA MARIA RIOS RIBEIRO e Coordenador o Professor RICARDO CORREIA LIMA.

As atividades realizadas durante o estágio, compreenderam o período de 02/05/94 a 09/09/94, perfazendo um total de 180 horas.

2.0 - INTRODUÇÃO

O presente relatório foi dividido em duas etapas:

A primeira etapa visa a caracterização dos dados geométricos fornecidos (cota, área e volume) de alguns açudes do Estado da Paraíba. Estes dados são essenciais para o estudo da avaliação das disponibilidades hídricas superficiais das bacias hidrográficas nas quais se situam aqueles açudes.

A segunda etapa visa o estudo da disponibilidade hídrica do reservatório Epitácio Pessoa (Boqueirão), manancial localizado no município de Boqueirão e que abastece entre outras cidades, Campina Grande. O Epitácio Pessoa tem um volume máximo armazenável de aproximadamente 536 milhões de m³.

Estes dados deverão fazer parte do Plano Estadual de Recursos Hídricos, conforme consta em proposta técnica encaminhada à Secretaria de Planejamento do Estado da Paraíba - SEPLAN, pela Associação Técnica e Científica Ernesto Luis Oliveira Júnior - ATECEL (UFPB/ATECEL, 1993).

3.0 - PRIMEIRA ETAPA

3.1 - AVALIAÇÃO DAS CURVAS COTA X ÁREA E COTA X VOLUME

As curvas Cota X Área e Cota X Volume são usadas como dados essenciais para a avaliação quantitativa das disponibilidades hídricas dos reservatórios.

A partir dos dados de Cota, Área e Volume fornecidos pelos órgãos estaduais e com a ajuda do software Lotus 1-2-3 (SWENSSON e GOMES, 1986), foi possível a construção das curvas cota X área e cota X volume, curvas estas usadas como dados essenciais para a avaliação quantitativa das disponibilidades hídricas dos reservatórios.

Depois de passar todos os dados para a planilha eletrônica, faz-se necessário a correção do volume fornecido. Essa correção é feita através da seguinte expressão:

$$\text{VOL CORR} = \{[(A1+A2)/2] \cdot (C2 - C1)\} + \text{vol anterior}$$

onde:

VOL CORR - volume corrigido

A1 - Área do espelho correspondente a cota anterior.

- A2 - Área do espelho correspondente a cota posterior.
- C1 - Cota anterior.
- C2 - Cota posterior.

Em seguida, observa-se a diferença entre o volume original fornecido pelas tabelas e o volume "teórico" esperado ou volume corrigido (dado pela expressão anterior).

Para que se tenha dados coerentes das características geométricas do açude, faz-se necessário que a diferença entre o volume "teórico" esperado e o volume apresentado pelas tabelas seja aproximadamente zero.

A tabela a seguir ilustra a maneira como é feita a correção do volume para o Açude Barra de Xandu:

Tabela 1 - dados de cota, área e volume para o Açude Barra do Xandu.

Cota (m)	Área ² (m)	Volume ³ (m)	Vol.corr. ³ (m)	Dif. ³ (m)
11	400	0	0	0
12	1200	800	800	0
13	14800	8800	8800	0
14	42400	97400	97400	0
15	93000	105100	105100	0
16	144400	223800	223800	0
17	196800	394400	394400	0
18	267200	626400	626400	0
19	336000	928000	928000	0

Foram fornecidos dados de 83 (oitenta e tres) açudes (Anexo 1). Dentre os dados fornecidos, apenas 36 (trinta e seis) açudes obtiveram a "diferença" zero referenciada anteriormente, os demais foram excluídos, pois apresentavam irregularidades, tais como: dados ilegíveis; dados incompletos (Açudes Caraiqueira, Macapã, Namorado, Ouro Velho, Tauá). No anexo 2 são mostradas as tabelas dos 36 açudes que tiveram seus dados inconsistentes.

No Anexo 3 estão as figuras correspondentes aos erros acima citados.

O reconhecimento dos açudes foi feito e georeferenciado pelas coordenadas (cartesianas e geográficas) do centro de massa dos mesmos a partir da observação em mapas na escala 1:100.000, restituídos pelo LRMS - Pb (Laboratório de Meteorologia, Recursos Hídricos e Sensoriamento Remoto da Paraíba), com imagens LANDSAT de 1989 e 1990 e cedidas pelo SAIA (Secretaria de Agricultura, Irrigação e Abastecimento do Estado da Paraíba).

O levantamento foi executado no sentido oeste-leste, atribuindo-se uma numeração crescente como critério de indentificação e contagem dos açudes, tendo-se medido as áreas dos espelhos d'água. No total foram cadastrados 4.898 açudes em todo o Estado da Paraíba. Para açudes de maior porte foram planimetrados também as áreas das bacias hidrográficas.

Dos 83 açudes analisados, apenas 16 foram localizados no mapa referenciado acima, os demais estão enumerados na Tabela 2, mostrada abaixo:

Tabela 2 - Açudes Plotados no Mapa com escala 1:100.000

Açude	Município	Volume máximo (m ³)
Alto Branco	Nova Palmeira	64.546
Brejinho	Juarez Távora	789.000
Cachoeira da vaca	Cachoeira dos Índios	339.156
Catolé	Manaira	8.655.800

cont. do da Tabela 2

Açude	- Município	- Volume máximo (m ³)
Chupadouro	Antenor Navarro	2.764.100
Chã dos Pereiras	Ingá	1.766.100
Duas Estradas	Duas Estradas	410.260
Engenho Velho	Pocinhos	493.140
Genipapeiro	S. José da Lagoa Tapada	1.948.300
Glória	Jurú	1.349.980
Gurjão	Gurjão	1.929.250
Limeirão	S. José de Pira- nhas	3.051.125
Nazaré	Itaporanga	5.499.186
Novo	Tavares	706.080
Olivedos	Olivedos	5.875.124
Zé Francisco	Bonito de Sta. Fé	584.080

3.2 - CONCLUSÃO

Apenas 36 açudes analisados apresentaram dados confiáveis, ou seja, dados cuja diferença entre o volume "teórico" e o volume fornecido pelas tabelas foi de aproximadamente zero, o que nos serve de subsídio para a obtenção das curvas cota X área e cota X volume dos mesmos.

Quanto aos outros açudes, nos quais apresentaram dados inconsistentes, é prudente que se realize uma batimetria, para que se tenha os dados geométricos reais dos açudes, para posterior estudo da disponibilidade hídrica.

4.0 - SEGUNDA ETAPA

4.1 - INTRODUÇÃO

A segunda etapa deste relatório visa o estudo da disponibilidade hídrica do Açude Epitácio Pessoa(Boqueirão), açude este que abastece dentre outros municípios, a cidade de Campina Grande.

Para tal estudo, foi usada a simulação do balanço hídrico do Epitácio Pessoa, auxiliado pelo programa HEC-3 (Ribeiro, 1990), que nos fornece dados para a obtenção da curva de garantia mensal ou curva de permânencia.

4.2 - AVALIAÇÃO DA DISPONIBILIDADE ATUAL DO AÇUDE EPITÁCIO PESSOA

A avaliação da disponibilidade hídrica do Açude Epitácio Pessoa se faz mediante a metodologia de simulação do balanço hídrico no referido açude.

O programa HEC-3 fornece dados importantes para a simulação da operação de um reservatório. Neste relatório em particular, foram usados apenas os dados necessários para que se fizesse o estudo da disponibilidade hídrica do Açude Epitácio Pessoa.

Para executar o algoritmo HEC-3 é preciso que se disponha de dois arquivos de trabalho: o arquivo de entrada e o arquivo de saída.

O arquivo de entrada é composto de dados tanto geométricos (cota área e volume), quanto hidrológicos (vazão e evaporação mensais). No nosso estudo trabalhou-se com dados de vazão afluente para o período de 21 anos (de 1963, inclusive até 1983).

O volume inicial, para Janeiro de 1963 (início do estudo), foi tomado como sendo 10% do volume máximo armazenado, ou seja $53.600.000 \text{ m}^3$.

O volume inativo ou volume "morto", também foi considerado como 10% do valor máximo armazenável.

No arquivo de entrada do Epitácio Pessoa (Anexo 4), os dados geométricos e os hidrológicos são encontrados sob a forma de variáveis. Abaixo estão listados as variáveis usados no estudo do Epitácio Pessoa:

RE - valor da cota

RS - valor do volume armazenável

RA - valor da área do espelho do Epitácio Pessoa

IN - vazão afluente + precipitação

YE - evaporação

QR - vazão de demanda ou regularizável

O arquivo de saída é o resultado da simulação do balanço hídrico, realizado pelo HEC-3, que fornece os dados essenciais para o estudo da disponibilidade hídrica do manancial referido.

A dinâmica do processo do balanço Hídrico mensal pode ser sintetizada através da seguinte expressão:

$$V_i = V_{i-1} + V_{ci} + V_{pi} - V_{Ei} - V_{Qi}$$

onde:

V_{i-1} - Volume de água armazenado no reservatório no final do mês $i-1$;

V_i - Volume de água armazenado no reservatório no final do mês i ;

V_{ci} - Volume de água afluente ao reservatório

decorrente do escoamento superficial da bacia de contribuição, durante o mês i ;

VE_i - Volume de água retirado do reservatório decorrente das perdas por evaporação na bacia hidráulica;

VQ_i - Volume de água retirado do reservatório para suprir as possíveis demandas hídricas, durante o mês i .

Para o estudo do Açude Epitácio Pessoa, foram somado as contribuições de volume de água decorrente do escoamento superficial e o da precipitação.

Dentre os vários dados fornecidos, destaca-se aquele que é de maior importância: o número de meses em que a vazão regularizável assumida, não atendeu a demanda, ou seja, o número de meses em que houve falhas.

Sabendo-se o número de meses em que houve falhas(n), é possível conhecer a porcentagem de ocorrência de falhas durante o período de simulação ($m = 21$ anos), pela seguinte expressão:

$$F = (n/m) \cdot 100$$

Dai resulta o valor do nível de atendimento do manancial, ou seja $G = 100 - F$.

De posse da vazão regularizável e do nível de atendimento é possível a construção da curva de garantia mensal do Açude Epitácio Pessoa (Boqueirão).

A tabela 3 ilustra as vazões regularizáveis assumidas, com seus respectivos valores de ocorrência de falhas e nível de figura 1 mostra a curva de Garantia Mensal para o açude Epitácio Pessoa.

Tabela 3 - Vazões regularizáveis utilizadas na simulação do balanço hídrico no açude Epitácio Pessoa.

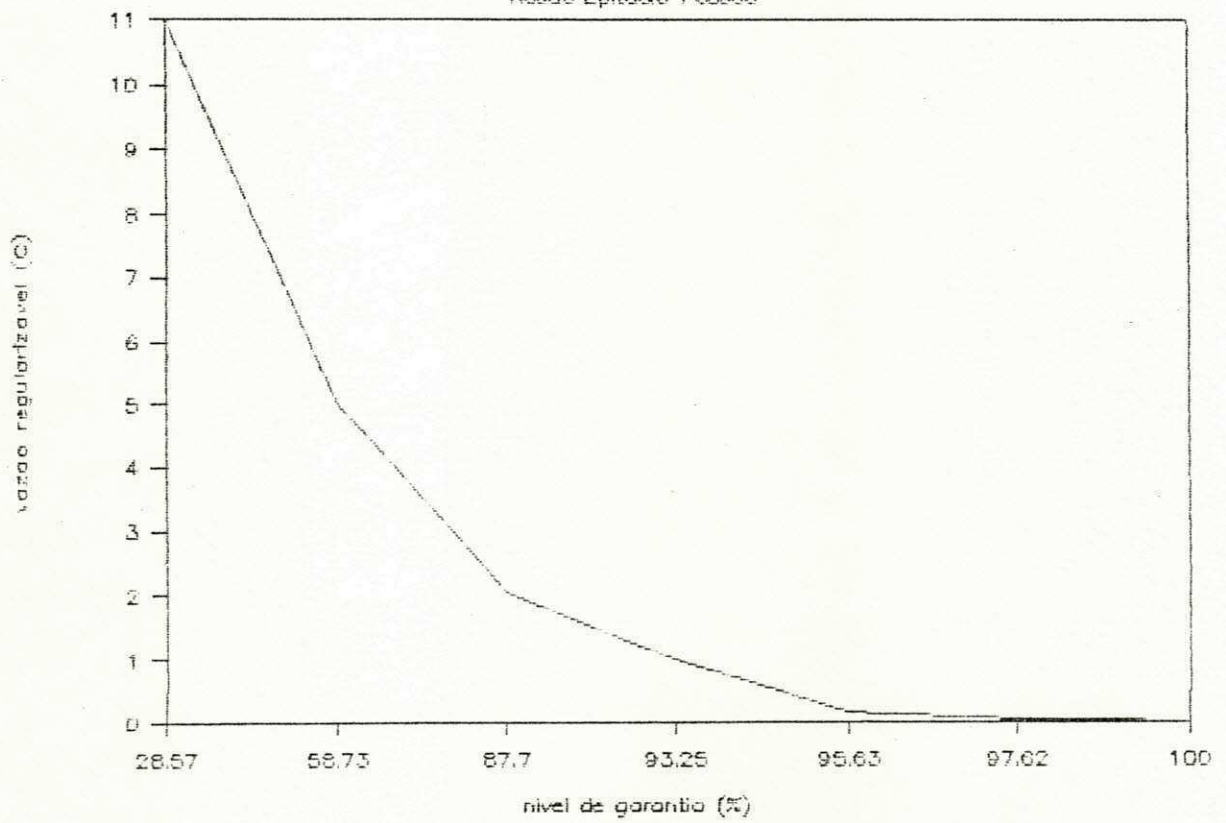
Q (Vazão) $\frac{m^3}{s}$	F (Frequência de falhas) $F = \frac{(n/m) \cdot 100}{\%}$	G (garantia) $G = 100 - F$ $\%$
0.01	00.00	100.00
0.05	02.38	97.62
0.01	03.57	96.43
0.15	04.37	95.63
0.50	06.36	93.65
1.00	06.75	93.25
2.00	08.73	91.27
2.05	12.30	87.70
3.00	22.22	77.78
3.50	26.58	73.42
4.00	29.36	70.63
4.50	36.50	63.50
5.00	41.27	58.73

cont. Tabela 3

Q (Vazão) 3 (m /s)	F (Frequência de falhas) (%)	G (Garantia) (%)
6.00	49.60	50.40
7.00	56.40	43.60
9.00	60.32	39.68
11.0	71.43	28.57
12.00	73.80	26.20
16.00	80.95	19.05

CURVA DE GARANTIA MENSAL

Acude Epitacio Pessoa



4.3 - ANÁLISE DA VAZÃO REGULARIZÁVEL DO ACUDE EPITÁCIO PESSOA PARA O NÍVEL DE 90%.

A Tabela 3 fornece os dados necessários para a construção da Curva de Garantia Mensal do Açude Epitácio Pessoa .

De acordo com a Curva de Garantia, podemos analisar o açude mediante sua capacidade de atendimento. Quando o Epitácio Pessoa assume uma vazão regularizável de $2 \text{ m}^3/\text{s}$, o mesmo atende à esta vazão durante 227 meses dos 252 meses simulados, ficando o restante dos meses (25 meses) sem abastecimento.

Pode-se verificar na Curva de Garantia Mensal do açude Epitácio Pessoa, que a medida em que as vazões regularizáveis vão aumentando , a capacidade de atendimento do manancial vai diminuindo.

Analisando o arquivo de saída (Anexo 4), para uma vazão de regularização de $2.00 \text{ m}^3/\text{s}$ têm-se:

No primeiro ano simulado (1963), o Epitácio Pessoa atendeu vazões abaixo da vazão de demanda, de janeiro a abril, enquanto que de maio a dezembro ele não havia atendido a nenhuma vazão, o que indica que o ano de 1963 é um dos anos em que houve falhas no atendimento, mensuradas no programa HEC-3.

No quarto ano simulado (1966), o Açude Epitácio Pessoa atendeu perfeitamente a vazão de demanda; apre-

sentou uma escassez zero, ou seja, neste ano o manancial Epitácio Pessoa apresentou a vazão de atendimento igual a vazão de demanda.

4.3 - CONCLUSÃO

Depois da simulação de vazões concluídas, obteve-se a Curva de Garantia mensal, que servirá como dado para a avaliação e determinação da vazão aproveitável num determinado nível de risco pré - estabelecido.

Observa-se que para uma vazão de 2.00 m³/s, o açude Epitácio Pessoa garante o atendimento em 90% do tempo.

Esses dados são importantes quando se necessita saber, se um determinado manancial têm condições de abastecer a uma população durante um determinado espaço de tempo.

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ANEXOS

ANEXO 1 - Tabela com os 83 açudes estudados

_ ANEXO 1 - Tabela com os 83 açudes estudados

Açude	Município	Vol. Máximo(m ³)
Albino	Imaculada	1.688.400
Alto Branco	Nova Palmeira	64.546
Ameixas	Catingueira	205.000
Araçagi	Esperança	1.389.376
Arrojado	Uiraúna	3.569.180
Barra	Juazeirinho	3.017.185
Bastiana	Teixeira	1.271.560
Bichinho	Barra s. Miguel	2.583.000
Bom Jesus	Carrapateira	3.405.300
Brejinho	Juarez Távora	789.000
Boa Vista	Distrito C. Grande	1.591.580
Cachoeira cegos	Catingueira	66.060.402
Cafundó	Serra Grande	313.680
Canafistula II	Bananeiras / Solânea	1.115.195
Caraibeira	Picui	2.709.260
Catolé	Manaira	8.655.800
Chã dos Pereiras	Ingá	1.766.100

cont.Anexo 1

Açude	Município	Vol. máximo (m ³)
Chupadouro	Serra Redonda	634.620
Covão	Areial	672.260
Cachoeira da vaca	Cachoeira dos Índios	339.156
Duas Estradas	Lagoa de Dentro	410.260
Emas	Emas	2.013.750
Emídio	Montadas	415.770
Engenho Velho	Pocinhos	493.140
Felismina Queiroz	Cubati / São Vicente	2.062.207
Filgueiras	Frei Martinho	167.892
Gamela	Triunfo	472.296
Gavião	Fagundes / Galante	1.450.840
Genipapeiro	S. José da L. Tapada	1.948.300
Geremias	Destêrro	5.253.905
Glória	Jurú	1.349.980
Gurjão	Gurjão	1.929.250
Jangada	Mamanguape	395.000
Lagoa de Matias	Belém / Caiçara	1.239.883
Limeirão	S. J. de Piranhas	3.051.125
Livramento	Livramento	2.432.420
Marés	João Pessoa	2.136.637
Massaranduba	Massaranduba	604.390
Namorado	S. J. do Cariri	2.120.000

cont. Anexo 1

Açude	Município	Vol. máximo (m ³)
Nazaré	Itaporanga	5.499.186
Nogueira	Brejo dos Santos	766.920
Nova Aldeia	Junco do Seridó	1.085.640
Novo	Tavares	706.080
Novo (Barragem)	Monte Horebe	382.700
Olho d`água	Sapé - Mari	868.320
Olho d`água	Camalaú	994.195
Olivedos	Olivedos	5.875.124
Ouro Velho	Ouro Velho	1.675.800
Paredão	Lagoa de Dentro	275.400
Prata	Prata	2.197.320
Riacho dos Grossos	Nova Olinda	642.240
Riacho Verde	Boa Ventura	1.575.610
Sabonete	Teixeira	1.952.540
Santana	Santana de Mangueira	387.960
Santa Helena	Santa Helena	871.500
Santo Antônio	Santo Antônio	6.833.937
São Domingos	Distrito S. Domingos	7.340.440
Serra Vermelha	Conceição	11.801.173
São Jos'	S. J. dos Cordeiros	956.000
São José	S. J. do Sabugi	554.100
Santa Rita do Cais	Baraúnas	5.456.120

cont. Anexo 1

Açude	Município	Vol. Máximo (m ³)
São Sebastião	S. Sebastião	453.075
Serra Velha	Itatuba	689.800
Tauá	Guarabira	8.573.500
Torrões	Nova Palmeira	1.319.380
Varzea	Varzea	1.132.975
Varzea da Cruz	Santa Cruz	508.433
Varzea Grande	Picui	21.532.659
Varzea da Sela	S. J. dos Espinharas	2.305.560
Zê Francisco	Bonito de Santa Fé	584.080

ANEXO 2

ANEXO 2 - Tabela com os 36 açudes com os dados consistentes e algumas curvas Cota X Área e Cota X Volume

_ ANEXO 2 - Tabelas com os 36 dados consistentes e algumas curvas
Cota X Área e Cota X Volume

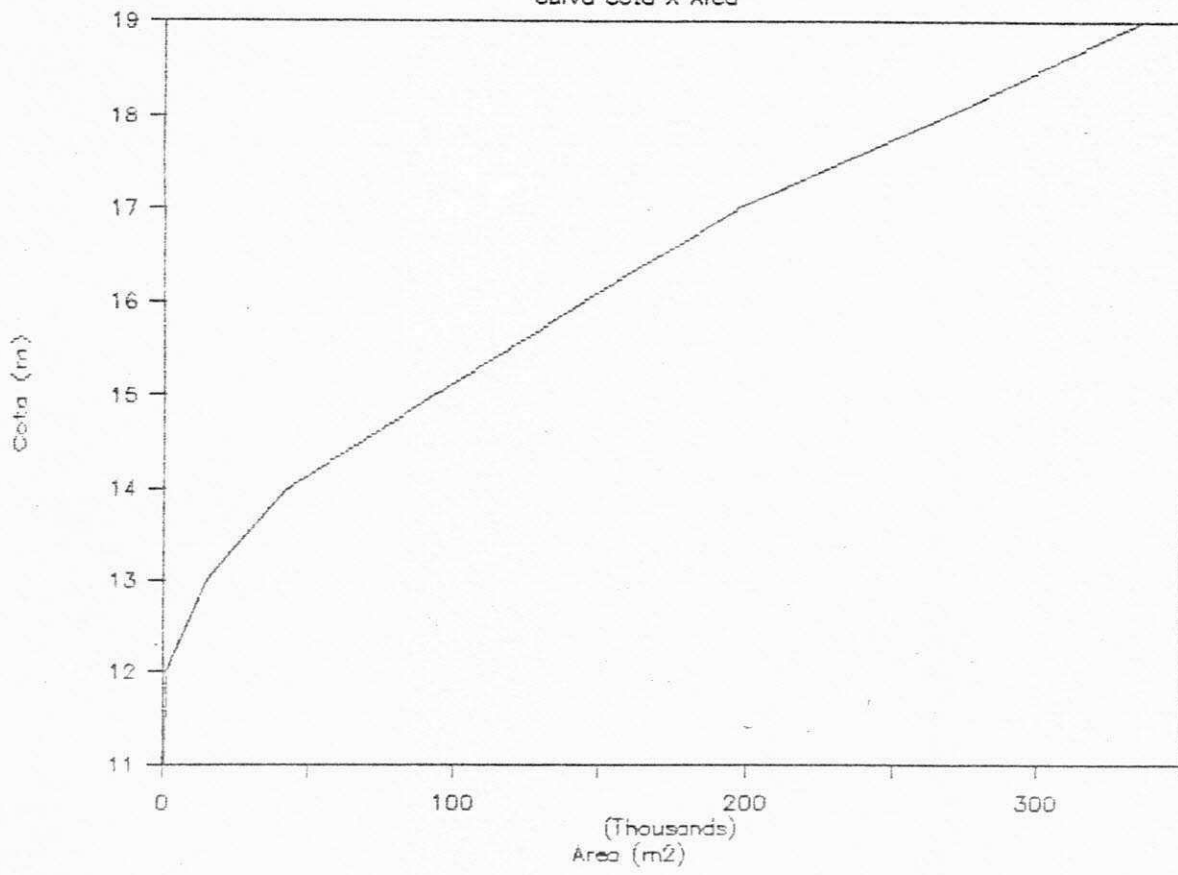
Açude	Município	Vol. Máximo(m ³)
Alto Branco	Nova Palmeira	64.546
Ameixas	Catingueira	205.000
Bichinho	Barra de S. Miguel	2.583.000
Brejinho	Juarez Távora	789.000
Caraiqueira	Picul	2.709.260
Catolé	Manaira	8.655.800
Chã dos Pereiras	Ingá	1.766.100
Chupadouro	Serra Redonda	634.620
Covão	Areial	672.260
Cachoeira da vaca	Cachoeira dos Índios	339.156
Engenho Velho	Pocinhos	493.140
Gamela	Triunfo	472.296
Gavião	Fagundes / Galante	1.450.840
Genipapeiro	S. J. da L. Tapada	1.948.300
Glória	Jurú	1.349.980
Gurjão	Gurjão	1.929.250
Limeirão	S. J. de Piranhas	3.051.125

cont. Anexo 2

Açude	Município	Vol. máximo (m ³)
Livramento	Livramento	2.432.420
Massaranduba	Massaranduba	604.390
Nazaré	Itaporanga	2.499.186
Nogueira	Brejo dos Santos	766.920
Novo	Tavares	706.080
Olho d`água	Sapé - Mari	868.320
Olho d`água	Camalaú	994.195
Olivedos	Olivedos	5.875.124
Paredão	Lagoa de Dentro	276.400
Prata	Prata	2.197.320
Riacho dos Grossos	Nova Olinda	642.240
São José	S. J. dos Cordeiros	956.000
Santa Rita do Cais	Baraúnas	5.456.120
Torrões	Nova Palmeira	1.319.380
Várzea da Cruz	Santa Cruz	508.433
Várzea Grande	Picuí	21.532.659
Zé Francisco	Bonito de Sta. Fé	584.080

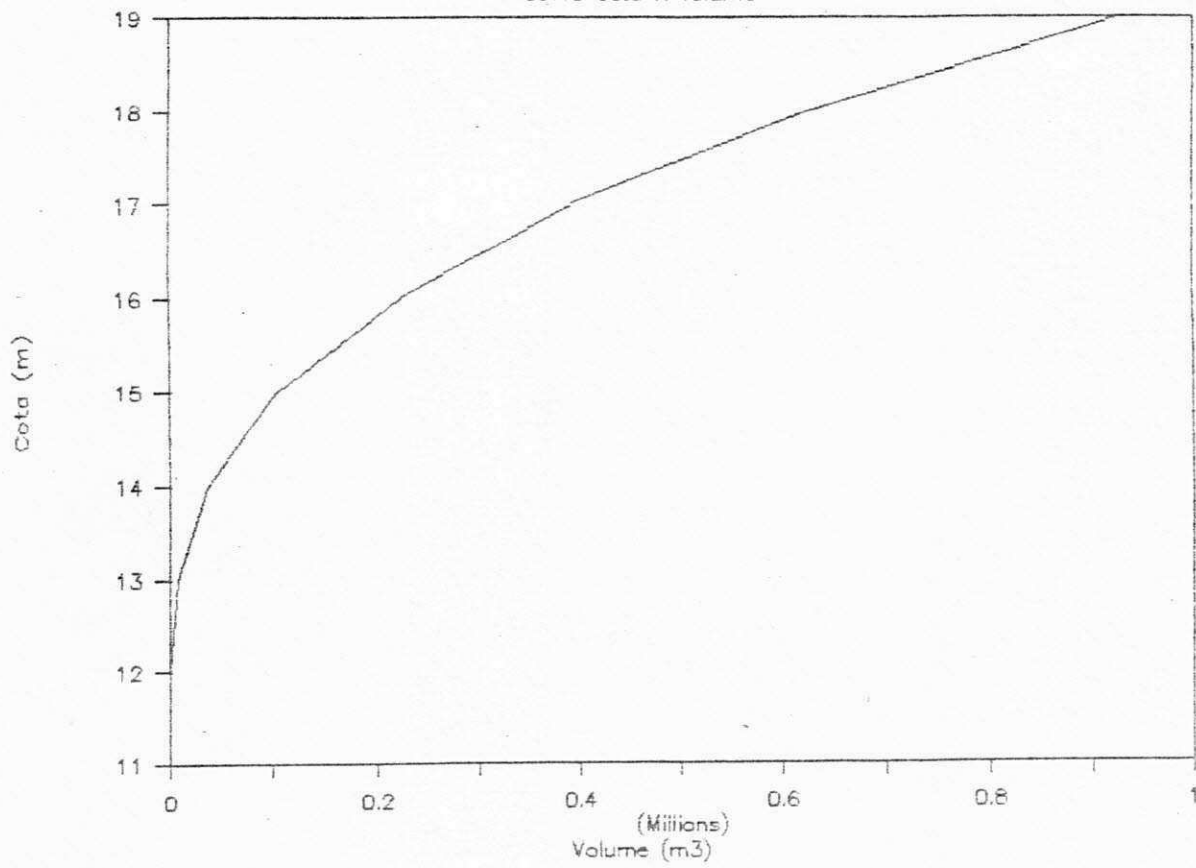
Acude Barra do Xandu

Curva Cota X Area



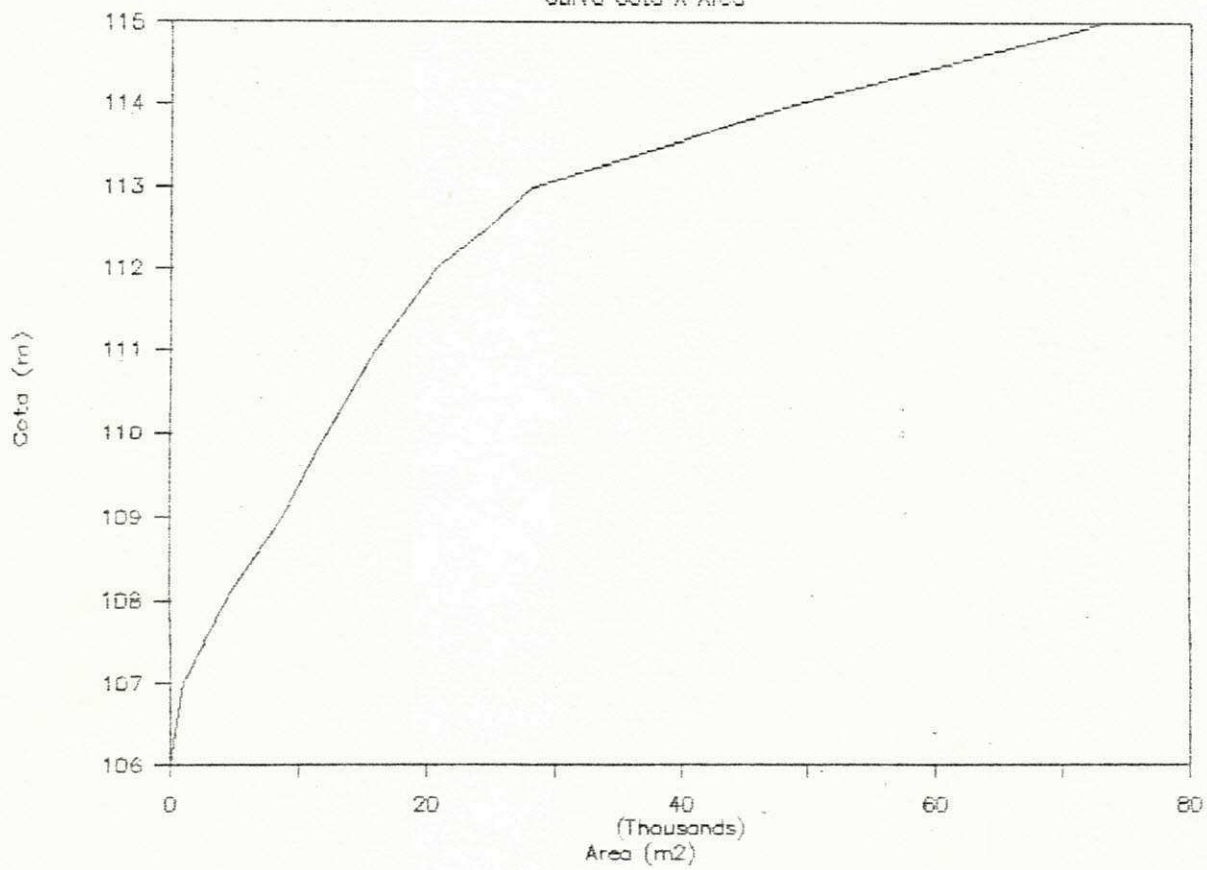
Acude Barra do Xandu.

Curva Cota X Volume



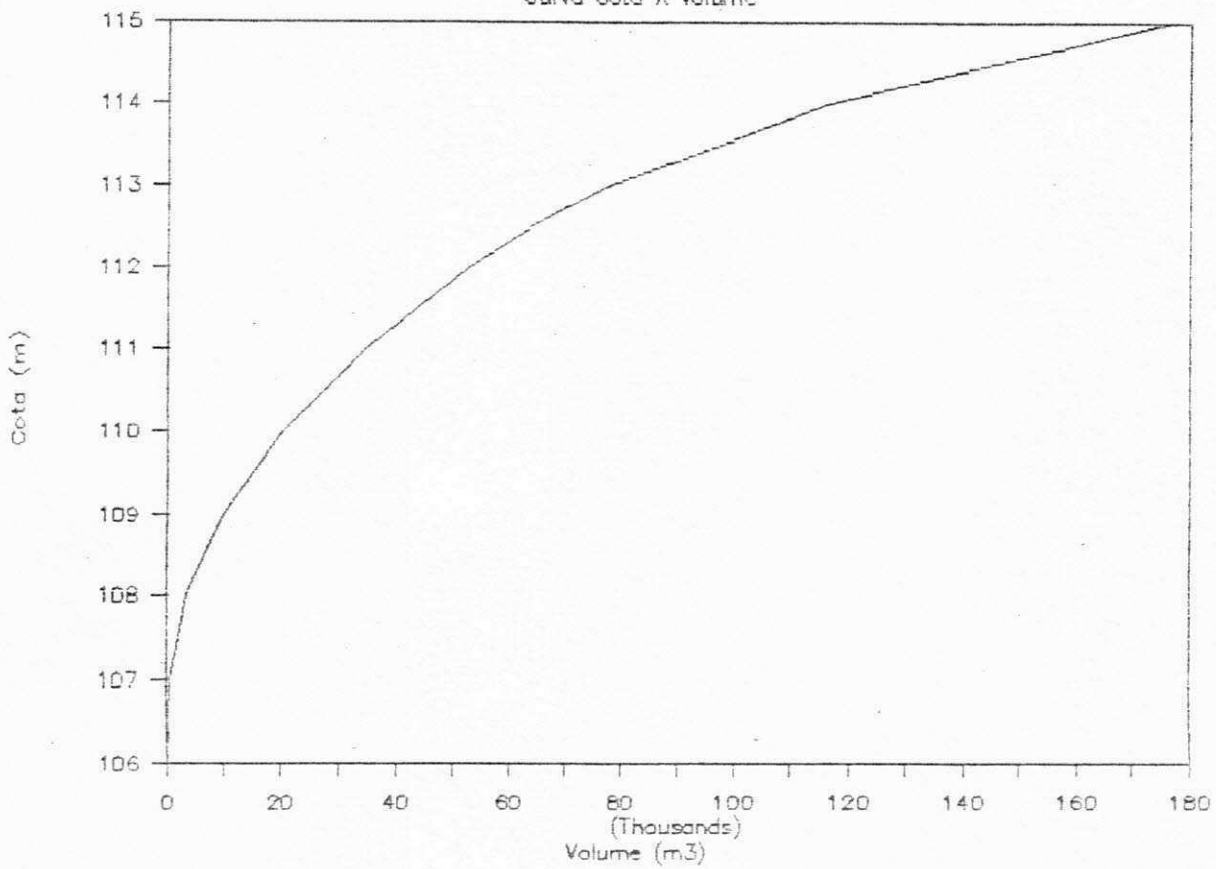
Acude Alto Branco

Curva Cota X Area



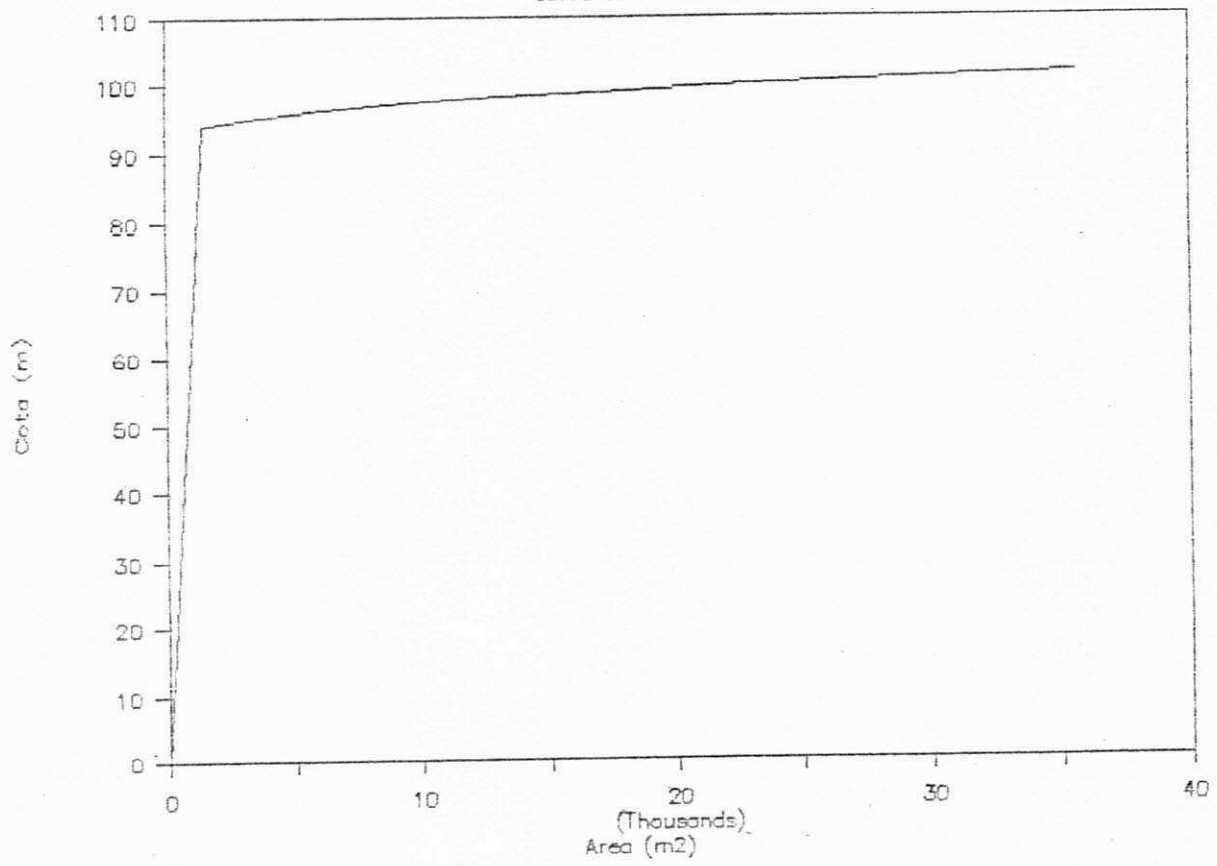
Acude Alto Branco

Curva Cota X Volume



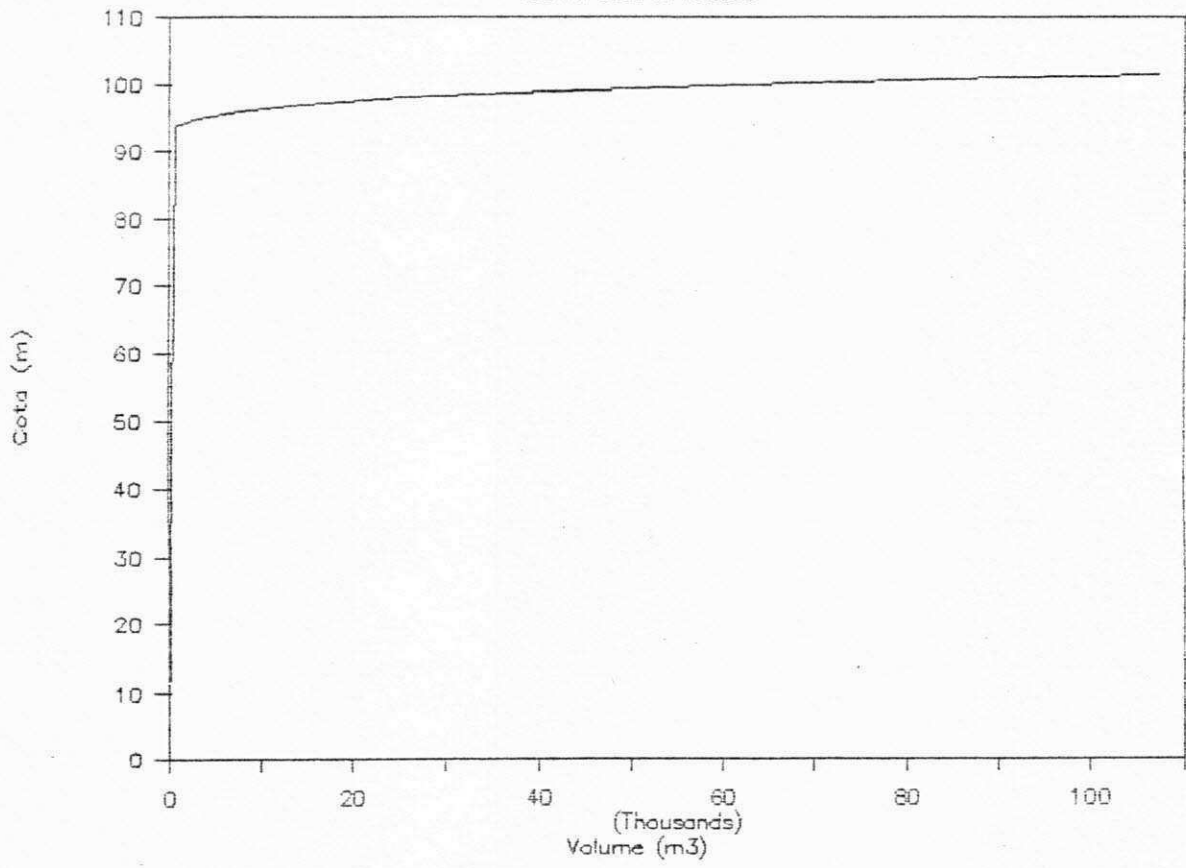
Acude Ameixas

Curva Cota X Area



Acude Ameixas

Curva Cota X Volume



ANEXO 3

Anexo 3 - Tabelas dos açudes com os dados inconsistentes

ÇAÚDE CARAIBEIRAS

▲SLOTH	AREA	VOLUME	VOL CORR	DIFERENÇA
81	0	0	0	0
82	13120	6560	6560	0
83	31760	29000	29000	0
84	54640	72200	72200	0
85	72560	135800	135800	0
86	92400	218280	218280	0
87	106560	317760	317760	0
88	140000	441040	441040	0
89	159160	590620	590620	-30000
90	203320	771860	771860	0
91	215160	981100	981100	0
92	275400	1226380	1226380	0
93	321600	1524880	1524880	0
94	370560	1870960	1870960	0
95	416680	2264580	2264580	0
96	472680	2709260	2709260	0
97	508800	3200000	3200000	0
98	581840	3745320	3745320	0

SULEIRA 96

AÇUDE MACAPÁ

▲SLOTH	HREH	VOLUME
5	1120	0
6	7200	4160
7	28000	21760
8	48240	59880
9	76080	122040
10	113200	216680
11	152240	349400
12	190800	
13	239080	735860
14	288800	999800
15	346960	1317680
16	409240	1695780
17	479240	2140020
18	533520	2658400
19	634480	3250400
20	721200	3928240

SULEIRH 18

AÇUDE NAMORADOS

▲SLOTH	HREN	VOLUME
86	0	
87		49
88		1736
89		9070
90		26939
91		60731
92		116214
93		193464
94		316824
95		474887
96		681785
97		942056
98		1263969
99		1654808
100		2120000
101		
102		

SULEIRH 100

AÇUDE OURO VELHO

▲SLU1H	HREH	VOLUME
89	0	0
90	5000	2500
91	24800	17400
92	89600	74600
93	157600	198200
94	222000	388000
95	405200	701600
96	481400	1144900
97	580400	1675800
98	846400	
99	932600	

50LE1RH 97

AÇUDE TAUÁ

▲SLUTH	HREH	VOLUME
102	200000	100000
103		235480
104		370960
105		506440
106		541900
107		656800
108		912880
109		1025250
110		1137625
111		1250000
112		1491940
113		1769240
114		2096300
115		2500880
116		2971140
117		3521980
118		4175480
119		4898380
120		5687840
121		6559020
122		7520040
123		8573500

SULEIRH 123

ANEXO 4 - Arquivos de entrada e saída do Epitácio Pessoa

ARQUIVO DE ENTRADA

T1	UFFR - PL. EST. REC. HIDRICOS												
T2	ACUDE EPITACIO PESSOA (BOQUEIRAO)												
T3	AGOSTO 1993												
J1	21	1963	4	0	0	-1	0	0	0	0			
J2	0	0	1	1	0	0	1	M3/S	1000				
J5	12	1											
CP	1	-1	0										
ID	0.00	0	0.00	500	ACUDE EPIT. PESSOA								
LF	1	9	1.00										
BD	00.5	00.5	00.5	00.5	00.5	00.5	00.5	00.5	00.5	00.5			
BD	00.5	00.5											
GR	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0			
GR	00.0	00.0											
R1	1	53600	0	0									
RL	1	1	-1	0	53600								
RL	2	1	-1	0	53600								
RL	3	1	-1	0	536000								
RL	4	1	-1	0	536000								
RS	22000	50000	75000	115000	162000	240000	330000	390000	464000	536000			
RA	4000	8200	11500	15800	20600	25600	32000	38300	42000	47000			
RD	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000			
RE	353	358	361	364	367	370	373	375	377	378.4			
ED													
IN	963	.43	.52	.99	.26	.13	.11	.06	.01	.01	.00	.26	.83
YE	63	120	110	110	100	90	80	70	80	90	110	120	120
IN	964	.54	1.14	.63	.62	.54	6.37	6.68	.14	.11	.13	.01	.01
YE	64	120	110	110	100	90	80	70	80	90	110	120	120
IN	965	.22	.02	.56	15.60	4.30	20.54	5.11	.06	.10	.04	.00	.12
YE	65	120	110	110	100	90	80	70	80	90	110	120	120
IN	966	.44	.98	.02	19.47	4.06	15.86	16.14	.05	.11	.00	.31	.07
YE	66	120	110	110	100	90	80	70	80	90	110	120	120
IN	967	.19	.23	.88	22.49	17.97	1.91	.29	.10	.02	.03	.00	.38
YE	67	120	110	110	100	90	80	70	80	90	110	120	120
IN	968	.42	.36	11.76	32.03	19.04	.05	.17	.06	.00	.00	.00	.04
YE	68	120	110	110	100	90	80	70	80	90	110	120	120
IN	969	.58	.16	1.04	3.93	.36	12.34	22.11	1.69	.01	.02	.01	.03
YE	69	120	110	110	100	90	80	70	80	90	110	120	120
IN	970	.39	.05	.68	.71	.08	.32	.48	.19	.00	.01	.00	.00
YE	70	120	110	110	100	90	80	70	80	90	110	120	120
IN	971	.01	.02	.33	13.19	7.03	.30	.31	.19	.09	.11	.01	.00
YE	71	120	110	110	100	90	80	70	80	90	110	120	120
IN	972	.08	.65	.61	.42	.47	.40	.37	.51	.08	.02	.00	.28
YE	72	120	110	110	100	90	80	70	80	90	110	120	120
IN	973	.12	.19	.46	.94	.38	.27	.28	.19	.13	.32	.04	.16
YE	73	120	110	110	100	90	80	70	80	90	110	120	120
IN	974	.52	2.23	2.48	83.91	38.70	27.44	19.27	.02	.16	.01	.01	.11
YE	74	120	110	110	100	90	80	70	80	90	110	120	120
IN	975	.14	.46	.95	2.25	.30	.47	11.37	.06	.10	.00	.01	.74
YE	75	120	110	110	100	90	80	70	80	90	110	120	120
IN	976	.10	.84	.56	.38	.54	.11	.18	.08	.00	.30	.10	.08
YE	76	120	110	110	100	90	80	70	80	90	110	120	120
IN	977	.56	.12	.31	101.23	59.66	79.81	48.08	17.65	2.98	.04	.00	.03
YE	77	120	110	110	100	90	80	70	80	90	110	120	120
IN	978	.01	.95	34.03	32.59	32.79	14.41	11.37	.11	.13	.00	.02	.03
YE	78	120	110	110	100	90	80	70	80	90	110	120	120

IN	979	.15	.08	.38	.38	.40	.22	.31	.01	.07	.01	.09	.01
YE	79	120	110	110	100	90	80	70	80	90	110	120	120
IN	980	.31	1.00	.40	.21	.17	.43	.04	.01	.01	.05	.00	.05
YE	80	120	110	110	100	90	80	70	80	90	110	120	120
IN	981	.46	.35	103.71	26.35	.58	.17	.04	.00	.01	.02	.07	.25
YE	81	120	110	110	100	90	80	70	80	90	110	120	120
IN	982	.03	.38	.05	.92	.39	6.40	.15	.14	.03	.03	.02	.03
YE	82	120	110	110	100	90	80	70	80	90	110	120	120
IN	983	.17	.66	.51	.27	.35	.28	.18	.18	.00	.04	.00	.00
YE	83	120	110	110	100	90	80	70	80	90	110	120	120
ER													

ARQUIVO DE SAÍDA

 # RESERVOIR SYSTEM ANALYSIS #
 # 723-N6-L2030 1 JULY 1974 #

LFPB - PL. EST. REC. HIDRICOS
 ACUDE EPITACIO PESSOA (BOQUEIRAO)
 AGOSTO 1993

NVRS IYR WL ICONS IDVSP IPWPR IDVPR IFLOW JUPGI
 21 1963 4 0 0 -1 0 0 0

CLOCL CFLOD IJUNIT METRC CNST1 CNSTD CDFS BUNIT CACFT VUNIT IPRMT IPRL IPWAV IUPDT IDGST
 1.00 1.00 1 1 1.000 1.000 1.000 NS/S1000.000 0 0 0 0 0

NPER= 12 IPERA= 1

PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NDAYS	31	28	31	30	31	30	31	31	30	31	30	31

CONTROL POINT SEQUENCE

 # CP NO 1 ACUDE EPIT. PESSOA #

NDWST	NDIV	NRES	NPWR	NTSRV	IPRN	NFLW	DDV	DMN	DM2	DMXX		
-1	0	1	0	0	0	1	.00	-1.00	-1.00	500.00		
ND AND RTID=		9	1.000									
DMIN	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DMIN2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RESERVOIR DATA

INITIAL STOR = 53600. DEVP = 1.000 GLKB = 0. ISRCH = 0

STORAGES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LEVEL 4	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.
LEVEL 3	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.
LEVEL 2	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.
LEVEL 1	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.	53600.

STOR	25000.	50000.	75000.	115000.	162000.	240000.	330000.	390000.	464000.	536000.		
AREA	4000.0	8200.0	11500.0	15800.0	20600.0	25600.0	32000.0	36300.0	42000.0	47000.0		
DCAP	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.	1000.		
ELEV	353.00	358.00	361.00	364.00	367.00	370.00	373.00	375.00	377.00	378.40		

ANNUAL INPUT DATA FOR 1963

##INFLOWS												
STA 9	.43	.52	.99	.36	.13	.11	.06	.01	.01	.00	.26	.83
##EVAPORATION	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

I	ACUDE EPIT. PESSOA	LEAKAGE		O. SERVED BY I									
		SERVING		I									
YR 1963	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	.31	.43	.52	.99	.36	.13	.11	.06	.01	.01	.00	.26	.83
UNREG	.31	.43	.52	.99	.36	.13	.11	.06	.01	.01	.00	.26	.83
INFLOW	.31	.43	.52	.99	.36	.13	.11	.06	.01	.01	.00	.26	.83
EDP STR	5360000	5360000	53958144	5360000	53167424	52763096	5224248	51670508	50938584	50022952	49712508	50956752	
EDP EL	358.43	358.43	358.47	358.43	358.38	358.33	358.28	358.20	358.11	358.00	357.95	358.11	
EVAPD	10208770.0	1041024.0	954272.1	954272.1	872247.4	780768.1	689448.1	599531.0	680544.3	757845.6	915628.3	984363.6	978625.2
CASE		101	101	101	101	101	101	101	101	101	101	101	101
LEVEL		1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CSV REL	.07	.04	.13	.50	.16	.00	.00	.00	.00	.00	.00	.00	.00
RIV FLW	.07	.04	.13	.50	.16	.00	.00	.00	.00	.00	.00	.00	.00
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.43	.46	.37	.00	.34	.50	.50	.50	.50	.50	.50	.50	.50
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1964

**INFLOWS													
STA 9	.54	1.14	.63	.62	.54	6.37	6.68	.14	.11	.13	.01	.01	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

I	ACUDE EPIT. PESSOA	LEAKAGE		O. SERVED BY I									
		SERVING		I									
YR 1964	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	1.41	.54	1.14	.63	.62	.54	6.37	6.68	.14	.11	.13	.01	.01
UNREG	1.41	.54	1.14	.63	.62	.54	6.37	6.68	.14	.11	.13	.01	.01
INFLOW	1.41	.54	1.14	.63	.62	.54	6.37	6.68	.14	.11	.13	.01	.01
EDP STR	51403932	52239436	53600000	53600000	53600000	53600000	68121024	83932104	81971064	79857736	77544288	74861392	72171168
EDP EL	358.17	358.39	358.43	358.43	358.43	358.43	360.17	361.67	361.52	361.36	361.19	360.98	360.66
EVAPD	12166650.0	999155.1	922365.2	949036.7	867519.9	780768.1	694016.0	741436.3	996816.1	1102445.0	1322443.0	1412621.0	1377805.0
CASE		101	101	101	101	101	101	101	101	101	101	101	101
LEVEL		1.00	1.00	1.00	1.00	1.00	2.03	2.06	2.06	2.05	2.05	2.04	2.04
CSV REL	.35	.00	.00	.14	.29	.25	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.35	.00	.00	.14	.29	.25	.50	.50	.50	.50	.50	.50	.50

DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.15	.50	.50	.36	.21	.25	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1965

**INFLOWS													
STA 9	.22	.02	.56	15.60	4.30	20.54	5.11	.06	.10	.04	.00	.12	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT. PESSOA	LEAKAGE	0.	SERVED BY	1								
		SERVING	1										
YR 1965	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LDC FLW	3.86	.22	.02	.56	15.60	4.30	20.54	5.11	.06	.10	.04	.00	.12
UNREG	3.86	.22	.02	.56	15.60	4.30	20.54	5.11	.06	.10	.04	.00	.12
INFLW	3.86	.22	.02	.56	15.60	4.30	20.54	5.11	.06	.10	.04	.00	.12
EOP STR	70086032	67731168	66732416	104630744	113685056	164376048	175270816	172376288	169425616	165875184	162077360	158586976	
EOP EL	360.41	360.13	360.01	363.24	363.90	367.09	367.51	367.40	367.29	367.15	367.00	366.78	
EVAPD	19680810.0	1335191.0	1193649.0	1159457.0	1040868.0	1323612.0	1252691.0	1452662.0	1716055.0	1913863.0	2318360.0	2501809.0	2472595.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.03	2.03	2.03	2.11	2.12	2.23	2.25	2.25	2.24	2.23	2.22	2.22	2.22
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1966

**INFLOWS													
STA 9	.44	.98	.02	19.47	4.06	15.86	16.14	.05	.11	.00	.31	.07	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT. PESSOA	LEAKAGE	0.	SERVED BY	1								
		SERVING	1										
YR 1966	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LDC FLW	4.78	.44	.98	.02	19.47	4.06	15.86	16.14	.05	.11	.00	.31	.07

UNREG	4.78	.44	.98	.02	19.47	4.06	15.86	16.14	.05	.11	.00	.31	.07
INFLOW	4.78	.44	.98	.02	19.47	4.06	15.86	16.14	.05	.11	.00	.31	.07
EOP STR	153996080	154958736	151486192	198703792	206173136	244111728	284189440	280684768	277109536	272664064	268820832	264351184	
EOP EL	366.62	366.55	366.33	368.41	368.70	370.14	371.47	371.36	371.24	371.09	370.96	370.81	
EVAPD	29159720.0	2430172.0	2198552.0	2186899.0	1952625.0	2065753.0	1874529.0	1812467.0	2299389.0	2564383.0	3106279.0	3350734.0	3317938.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.21	2.21	2.20	2.30	2.32	2.39	2.48	2.47	2.46	2.45	2.45	2.44	
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTEE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTEE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1967

##INFLOWS													
STA 9	.19	.23	.88	22.49	17.97	1.91	.29	.10	.02	.03	.00	.38	
##EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EP17, PESSOA	LEAKAGE	0, SERVED BY	1									
		SERVING	1										
YR 1967	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LDC FLW	3.71	.19	.23	.88	22.49	17.97	1.91	.29	.10	.02	.03	.00	.38
UNREG	3.71	.19	.23	.88	22.49	17.97	1.91	.29	.10	.02	.03	.00	.38
INFLOW	3.71	.19	.23	.88	22.49	17.97	1.91	.29	.10	.02	.03	.00	.38
EOP STR	260241104	256613584	254685408	309019040	353064960	354027424	351104448	347352064	343115968	338233728	333026880	328839424	
EOP EL	370.67	370.55	370.49	372.30	373.77	373.80	373.70	373.58	373.44	373.27	373.10	372.96	
EVAPD	36736170.0	3279797.0	2974331.0	2945955.0	2664430.0	2745722.0	2692239.0	2360538.0	2680999.0	2991921.0	3623398.0	3910810.0	3866031.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.43	2.42	2.42	2.53	2.62	2.62	2.62	2.61	2.60	2.59	2.58	2.57	
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTEE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTEE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1968

##INFLOWS													
STA 9	.42	.36	11.76	32.03	19.04	.05	.17	.06	.00	.00	.00	.04	
##EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1		ACUDE EPIT. PESSOA		LEAKAGE		0, SERVED BY 1		SERVING		1									
YR 1988	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC						
LOC FLW	5.34	.42	.36	11.76	32.03	19.04	.05	.17	.06	.00	.00	.00	.04						
UNREG	5.34	.42	.36	11.76	32.03	19.04	.05	.17	.06	.00	.00	.00	.04						
INFLW	5.34	.42	.36	11.76	32.03	19.04	.05	.17	.06	.00	.00	.00	.04						
EDP STR	324775104	320771152	347866328	426402504	472222688	467833824	463812224	459276848	454231616	448335200	442163808	436092600							
EDP EL	372.83	372.70	373.59	375.98	377.16	377.07	376.99	376.87	376.74	376.58	376.41	376.25							
EVAP0	45343060.0	35330077.0	34792286.0	3449422.0	3326724.0	3517161.0	3405699.0	2957782.0	3358843.0	3747244.0	4537253.0	4875391.0	4638163.0						
CHSE	101	101	101	101	101	101	101	101	101	101	101	101	101						
LEVEL	2.36	2.55	2.61	2.61	2.77	2.87	2.86	2.85	2.84	2.83	2.82	2.81	2.79						
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50						
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50						
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50						
SHORTIE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
SHORTIE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						

ANNUAL INPUT DATA FEB 1989

##INFLOWS

STR 9	.58	.16	1.04	3.93	.36	12.34	22.11	1.69	.01	.02	.01	.03
##EVAPORATION	120.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	120.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1		ACUDE EPIT. PESSOA		LEAKAGE		0, SERVED BY 1		SERVING		1									
YR 1989	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC						
LOC FLW	3.54	.58	.16	1.04	3.93	.36	12.34	22.11	1.69	.01	.02	.01	.03						
UNREG	3.54	.58	.16	1.04	3.93	.36	12.34	22.11	1.69	.01	.02	.01	.03						
INFLW	3.54	.58	.16	1.04	3.93	.36	12.34	22.11	1.69	.01	.02	.01	.03						
EDP STR	431522856	426350496	423503776	428504272	424977244	432169440	4307173504	430678896	4301443520	429251840	428661312	428176800							
EDP EL	376.12	375.98	375.91	376.04	375.94	376.68	377.84	377.83	377.73	377.61	377.48	377.35							
EVAP0	4994280.0	4782035.0	4394848.0	4301085.0	3888049.0	3533942.0	3117194.0	2678211.0	3599883.0	4047566.0	4706028.0	5300432.0	5245678.0						
CHSE	101	101	101	101	101	101	101	101	101	101	101	101	101						
LEVEL	2.78	2.77	2.77	2.77	2.78	2.77	2.83	2.94	2.94	2.93	2.92	2.90	2.89						
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50						
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50						

BES FLOW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
RIV FLOW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1970

##INFLOWS

STA 9 .39 .05 .68 .71 .68 .32 .48 .19 .00 .01 .00 .00 .00
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 60.00 50.00 40.00 30.00 20.00 10.00 0.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1 ACUDE EPIT, PESSOA LEASAGE 0, SERVED BY 1
 SERVING 1

YR 1970	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLOW	.24	.39	.05	.68	.71	.68	.32	.48	.19	.00	.01	.00	.00
UNRCS	.24	.39	.05	.68	.71	.68	.32	.48	.19	.00	.01	.00	.00
INFLOW	.24	.39	.05	.68	.71	.68	.32	.48	.19	.00	.01	.00	.00

EDP STR	47669752	47685152	46669720	463020520	458125144	454331808	451390368	447277760	442521762	436568696	430498400	424418992
EDP EL	377.25	377.13	377.05	376.97	376.84	376.74	376.66	376.55	376.41	376.24	376.09	375.93
EVAPD	47669720.0	5191474.0	4716944.0	4672595.0	4618713.0	4577569.0	4538787.0	4502297.0	44684074.0	4436266.0	4786446.0	4730225.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.88	2.87	2.86	2.85	2.84	2.83	2.82	2.82	2.81	2.79	2.78	2.77

ESV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLOW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
BES FLOW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
RIV FLOW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1971

##INFLOWS

STA 9 .01 .02 .33 13.19 7.03 .30 .31 .19 .09 .11 .01 .00 .00
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 60.00 50.00 40.00 30.00 20.00 10.00 0.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1 ACUDE EPIT, PESSOA LEASAGE 0, SERVED BY 1
 SERVING 1

YR 1971	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLOW	1.80	.01	.02	.33	13.19	7.03	.30	.31	.19	.09	.11	.01	.00

UNREG	1.80	.01	.02	.33	13.19	7.03	.30	.31	.19	.09	.11	.01	.00
INFLOW	1.80	.01	.02	.33	13.19	7.03	.30	.31	.19	.09	.11	.01	.00

EDP STR	418430432	413035328	408391840	437512672	451406208	447605440	444244896	440176352	435498752	430075680	424079200	418068992	
EDP EL	375.77	375.62	375.50	376.28	376.66	376.56	376.47	376.36	376.23	376.08	375.92	375.76	
EVAPD	47227280.0	4674125.0	4233891.0	4188178.0	3771667.0	3596379.0	3282395.0	2851602.0	3238266.0	3614844.0	4378510.0	4726429.0	4671003.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.76	2.75	2.74	2.80	2.82	2.82	2.81	2.80	2.79	2.78	2.77	2.76	
DSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1972

##INFLOWS
 STA 9 .08 .65 .61 .42 .47 .40 .37 .51 .08 .02 .00 .28
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 80.00 90.00 110.00 120.00 120.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EP17. PEGSOA	LEAKAGE	0.	SERVED BY	1								
		SERVING	1										
YR 1972	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	.32	.08	.65	.61	.42	.47	.40	.37	.51	.08	.02	.00	.28
UNREG	.32	.08	.65	.61	.42	.47	.40	.37	.51	.08	.02	.00	.28
INFLOW	.32	.08	.65	.61	.42	.47	.40	.37	.51	.08	.02	.00	.28
EDP STR	412328640	408509344	404654080	400703872	397282336	394074240	391163104	388278752	383934208	378703360	373148544	368348256	
EDP EL	375.60	375.50	375.40	375.29	375.20	375.11	375.03	374.94	374.80	374.62	374.44	374.28	
EVAPD	44125370.0	4615449.0	4182190.0	4149829.0	3742876.0	3341204.0	2946875.0	2562968.0	2911167.0	3255898.0	3945182.0	4258850.0	4211078.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.74	2.74	2.73	2.72	2.71	2.71	2.70	2.69	2.68	2.67	2.66	2.65	
DSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTBE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1973

##INFLOWS
 STA 9 .12 .19 .46 .94 .38 .27 .28 .19 .13 .32 .04 .16
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 80.00 90.00 110.00 120.00 120.00

ALL FLOWS IN MG/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPT. PESSOA	LEAKAGE	0. SERVED BY 1	*****											
		SERVING	1	*****											
YR 1973	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
LOC FLW	.29	.12	.19	.46	.94	.38	.27	.28	.19	.13	.32	.04	.16		
UNRES	.29	.12	.19	.46	.94	.38	.27	.28	.19	.13	.32	.04	.16		
INFLOW	.29	.12	.19	.46	.94	.38	.27	.28	.19	.13	.32	.04	.16		
EQP STR	363164672	323629280	354776448	352537360	349192576	345726368	343017184	337532224	335651584	331644896	326355808	321837368			
EQP EL	374.11	373.95	373.83	373.75	373.64	373.53	373.43	373.32	373.19	373.05	372.89	372.73			
EVAPD	37875020.0	4169796.0	3781417.0	3745674.0	3377564.0	3025379.0	2670037.0	2319878.0	2634632.0	2941612.0	3564554.0	3853862.0	3810635.0		
CHSE	101	101	101	101	101	101	101	101	101	101	101	101	101		
LEVEL	2.64	2.63	2.62	2.62	2.62	2.61	2.61	2.60	2.59	2.58	2.58	2.57	2.56		
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50		
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50		
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50		
SHRTOSE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
SHRTOSE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		

ANNUAL INFLUT DATA FOR 1974

***INFLOWS

STA 9 .52 2.23 2.48 63.91 38.70 27.44 19.27 .02 .16 .01 .01 .11

***EVAPORATION

120.00 110.00 110.00 100.00 90.00 80.00 70.00 80.00 90.00 110.00 120.00 120.00 120.00

ALL FLOWS IN MG/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPT. PESSOA	LEAKAGE	0. SERVED BY 1	*****											
		SERVING	1	*****											
YR 1974	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
LOC FLW	14.53	.52	2.23	2.48	63.91	38.70	27.44	19.27	.02	.16	.01	.01	.11		
UNRES	14.53	.52	2.23	2.48	63.91	38.70	27.44	19.27	.02	.16	.01	.01	.11		
INFLOW	14.53	.52	2.23	2.48	63.91	38.70	27.44	19.27	.02	.16	.01	.01	.11		
EQP STR	318120736	318578912	320749120	3333813632	3336000000	3336000000	3336000000	3336000000	3336000000	3336000000	3336000000	3336000000	3336000000		
EQP EL	372.60	372.63	372.69	378.36	378.40	378.40	378.40	378.40	378.30	378.20	378.06	377.95	377.62		
EVAPD	49030160.0	37703348.0	34327078.0	34333009.0	3134216.0	4218336.0	3760000.0	3290000.0	3760000.0	4190435.0	5092654.0	5502248.0	5445812.0		
CHSE	101	101	101	101	101	103	103	103	101	101	101	101	101		
LEVEL	2.55	2.55	2.55	2.55	3.00	3.00	3.00	3.00	2.99	2.98	2.97	2.95	2.94		
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50		
RIV FLW	7.13	.50	.50	.50	.50	36.31	25.99	18.04	.50	.50	.50	.50	.50		

DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1975

**INFLOWS													
STA 9	.14	.46	.95	2.25	.50	.47	11.37	.06	.10	.00	.01	.74	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT, PEBSDA	LEAKAGE	0. SERVED BY 1										
		SERVING	1										
YR 1975	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	1.42	.14	.46	.95	2.25	.50	.47	11.37	.06	.10	.00	.01	.74
UNREG	1.42	.14	.46	.95	2.25	.50	.47	11.37	.06	.10	.00	.01	.74
INFLW	1.42	.14	.46	.95	2.25	.50	.47	11.37	.06	.10	.00	.01	.74
EOP STR	499851040	494860416	491209984	491357024	486870400	483305600	509385952	504595296	499524704	493294144	486740000	482153312	
EOP EL	377.70	377.60	377.53	377.53	377.44	377.38	377.88	377.79	377.69	377.57	377.44	377.35	
EVAPD	53053030.0	5391725.0	4893843.0	4355740.0	4366958.0	3950982.0	3487058.0	3033847.0	3612144.0	4033721.0	4891370.0	5284118.0	5229501.0
CASE		101	101	101	101	101	101	101	101	101	101	101	101
LEVEL		2.93	2.91	2.91	2.91	2.90	2.89	2.94	2.93	2.92	2.91	2.90	2.89
DSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1976

**INFLOWS													
STA 9	.10	.84	.56	.38	.54	.11	.18	.08	.00	.30	.10	.08	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT, PEBSDA	LEAKAGE	0. SERVED BY 1										
		SERVING	1										
YR 1976	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	.27	.10	.84	.56	.38	.54	.11	.18	.08	.00	.30	.10	.08

UNREG .27 .10 .84 .56 .38 .54 .11 .18 .08 .00 .30 .10 .08 .08
 INFLOW .27 .10 .84 .56 .38 .54 .11 .18 .08 .00 .30 .10 .08 .08

EQP STR 476894688 472023268 467481922 462943732 459281216 454937360 451191168 446785184 441828544 436666672 431034720 425174528
 EDP EL 377.23 377.16 377.07 376.97 376.87 376.76 376.65 376.53 376.40 376.27 376.11 375.95
 EVAP0 47700470.0 5171278.0 4710832.0 4681130.0 46294180.0 3772679.0 3530922.0 2891146.0 3281070.0 3668660.0 4432152.0 4789145.0 4732296.0
 CASE 101 101 101 101 101 101 101 101 101 101 101 101 101
 LEVEL 2.88 2.87 2.86 2.85 2.84 2.83 2.82 2.82 2.82 2.80 2.77 2.78 2.77

LSV REL .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 RIV FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 RES FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 SHAPTEE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 MIN FLOW .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 SHAPTEE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00

ANNUAL INPUT DATA FOR 1977

##INFLOWS

STA 9 .56 .12 .31 101.23 59.66 79.81 48.08 17.65 2.98 .04 .00 .03
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 80.00 90.00 110.00 120.00 120.00 120.00

ALL FLOWS IN HDYS, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1 ACUTE EPIT. PESSORA LEASAGE 0, SERVED BY 1
 SERVING 1

YR 1977 AVG JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
 LDC FLOW 25.86 .56 .12 .31 101.23 59.66 79.81 48.08 17.65 2.98 .04 .00 .03
 UNREG 25.86 .56 .12 .31 101.23 59.66 79.81 48.08 17.65 2.98 .04 .00 .03
 INFLOW 25.86 .56 .12 .31 101.23 59.66 79.81 48.08 17.65 2.98 .04 .00 .03
 EQP STR 421624112 415482080 410762568 536000000 536000000 536000000 536000000 536000000 536000000 522715392 515927328
 EDP EL 375.83 375.69 375.56 378.40 378.40 378.40 378.40 378.40 378.40 378.28 378.14 378.01
 EVAP0 52486660.0 4681127.0 4202732.0 378991.0 420000.0 378000.0 378000.0 378000.0 420000.0 517000.0 5586651.0 5522295.0
 CASE 101 101 101 103 103 103 103 103 103 103 101 101 101
 LEVEL 2.76 2.75 2.74 3.00 3.00 3.00 3.00 3.00 3.00 2.99 2.97 2.96

LSV REL .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 RIV FLOW 21.32 .50 .50 .50 51.45 58.08 78.36 46.85 16.25 1.35 .50 .50 .50
 RES FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 SHAPTEE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 MIN FLOW .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 SHAPTEE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00

ANNUAL INPUT DATA FOR 1978

##INFLOWS

STA 9 .01 .95 34.03 32.59 32.79 14.41 11.37 .11 .13 .00 .02 .03
 ##EVAPORATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 80.00 90.00 110.00 120.00 120.00 120.00

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EP17, PESSOA	LEAKAGE		O. SERVED BY 1									
		SERVING		1									
YR 1978	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	10.60	.01	.95	34.03	32.59	32.79	14.41	11.37	.11	.13	.00	.02	.03
UNREC	10.60	.01	.95	34.03	32.59	32.79	14.41	11.37	.11	.13	.00	.02	.03
INFLOW	10.60	.01	.95	34.03	32.59	32.79	14.41	11.37	.11	.13	.00	.02	.03
EDP STR	509142176	505265984	536000000	536000000	536000000	536000000	536000000	531195424	526036512	519603392	512855872	506149952	
EDP EL	377.88	377.80	378.40	378.40	378.40	378.40	378.40	378.31	378.21	378.08	377.95	377.82	
EVAP0	55357150.0	5472728.0	4964837.0	4935227.0	4700000.0	4230000.0	3760000.0	3290000.0	2760000.0	4199972.0	5093890.0	5503362.0	5447133.0
CASE	101	101	103	103	103	103	103	103	101	101	101	101	101
LEVEL	2.94	2.94	3.00	3.00	3.00	3.00	3.00	3.00	2.99	2.98	2.97	2.95	2.94
DSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	9.16	.50	.50	20.71	30.78	31.21	12.98	10.14	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1979

***INFLOWS	STA 9	.15	.08	.38	.38	.40	.22	.31	.01	.07	.01	.09	.01
**EVAPORATION	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EP17, PESSOA	LEAKAGE		O. SERVED BY 1									
		SERVING		1									
YR 1979	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	.18	.15	.08	.38	.38	.40	.22	.31	.01	.07	.01	.09	.01
UNREC	.18	.15	.08	.38	.38	.40	.22	.31	.01	.07	.01	.09	.01
INFLOW	.18	.15	.08	.38	.38	.40	.22	.31	.01	.07	.01	.09	.01
EDP STR	499821280	493911552	488741664	484058816	479885664	475711648	472205792	467487744	462571424	456651136	450816352	444387680	
EDP EL	377.70	377.58	377.48	377.39	377.31	377.23	377.16	377.07	376.96	376.80	376.64	376.47	
EVAP0	51559390.0	5391250.0	4893636.0	4848491.0	4371817.0	3905368.0	3448254.0	2996932.0	2405588.0	3801798.0	4607896.0	4972073.0	4916292.0
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.93	2.91	2.90	2.89	2.88	2.88	2.87	2.86	2.85	2.84	2.82	2.81	
DSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50

DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1980

**INFLOWS													
STA 9	.31	1.00	.40	.21	.17	.43	.04	.01	.01	.05	.00	.05	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT. PESSOA	LEAKAGE	O. SERVED BY 1										
		SERVING											
YR 1980	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	.22	.31	1.00	.40	.21	.17	.43	.04	.01	.01	.05	.00	.05
UNREG	.22	.31	1.00	.40	.21	.17	.43	.04	.01	.01	.05	.00	.05
INFLOW	.22	.31	1.00	.40	.21	.17	.43	.04	.01	.01	.05	.00	.05
EOP STR	439020098	435821312	431172258	426473408	422049498	418786658	414858368	410488768	405809664	400477408	394728608	389123648	
EOP EL	376.32	376.24	376.11	375.99	375.87	375.78	375.67	375.55	375.43	375.28	375.13	374.97	
EWAPD	46358860.0	4858719.0	4408346.0	4381243.0	3947137.0	3519850.0	3101619.0	2698215.0	3057181.0	3409037.0	4126955.0	4452845.0	4399708.0
CASE		101	101	101	101	101	101	101	101	101	101	101	101
LEVEL		2.80	2.79	2.78	2.77	2.76	2.76	2.75	2.74	2.73	2.72	2.71	2.70
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RIV FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ANNUAL INPUT DATA FOR 1981

**INFLOWS													
STA 9	.46	.35	103.71	26.35	.58	.17	.04	.00	.01	.02	.07	.25	
**EVAPORATION													
	120.00	110.00	110.00	100.00	90.00	80.00	70.00	80.00	90.00	110.00	120.00	120.00	

ALL FLOWS IN M3/S, STORAGES AND EVAP IN , AND POWER IN THOUSAND KWH

1	ACUDE EPIT. PESSOA	LEAKAGE	O. SERVED BY 1										
		SERVING											
YR 1981	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLW	11.14	.46	.35	103.71	26.35	.58	.17	.04	.00	.01	.02	.07	.25

UNREG 11.14 .46 .55 103.71 26.35 .58 .17 .04 .00 .01 .02 .07 .25
 INFLOW 11.14 .46 .55 103.71 26.35 .58 .17 .04 .00 .01 .02 .07 .25

EOP STR 394638064 390354240 536000000 536000000 531954256 527391200 525910944 517895612 512497664 506221600 497715264 493706832
 EOP EL 374.82 374.88 378.40 378.40 378.32 378.23 378.15 378.05 377.94 377.82 377.69 377.58
 EVMFO 51656240.0 43465640.0 3750767.0 3516360.0 4700000.0 4230000.0 3737690.0 3248152.0 3487263.0 4116778.0 4770469.0 5391247.0 5337658.0
 CASE 101 101 101 103 103 101 101 101 101 101 101 101 101
 LEVEL 2.69 2.68 3.00 3.00 3.00 2.79 2.76 2.77 2.76 2.75 2.74 2.82 2.91

CSV REL .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 RIV FLOW 6.16 .50 .50 44.14 24.54 .50 .50 .50 .50 .50 .50 .50 .50
 DES FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 SURFACE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 RUN FLOW .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 SHORTIE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00

ANNUAL INPUT DATA FOR 1962

##INFLOWS

STA 9 .03 .38 .05 .52 .39 6.40 .15 .14 .03 .03 .02 .03
 ##EVAPOREATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 60.00 50.00 40.00 30.00 20.00 10.00

ALL FLOWS IN MG/S, STORAGEE AND EVAP IN ; AND POWER IN THOUSAND KWHR

1 ACUE EPTT, FEEDER LEASEE 0, SERVED BY 1 SERVING 1

YR 1962 AVG JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
 LOG FLOW .70 .03 .38 .05 .52 .39 6.40 .15 .14 .03 .03 .02 .03
 UNREG .70 .03 .38 .05 .52 .39 6.40 .15 .14 .03 .03 .02 .03
 INFLOW .70 .03 .38 .05 .52 .39 6.40 .15 .14 .03 .03 .02 .03

EOP STR 487161568 482079360 476111072 472915552 468785248 480691456 476735864 472537952 467287520 461386616 455123680 448706912
 EOP EL 377.45 377.35 377.24 377.17 377.09 377.32 377.25 377.16 377.06 376.93 376.76 376.59
 EVMFO 51251850.0 5287568.0 4776959.0 4728069.0 4284105.0 3835723.0 3021139.0 3430738.0 3632112.0 4645114.0 5015817.0 4957733.0
 CASE 101 101 101 101 101 101 101 101 101 101 101 101
 LEVEL 2.90 2.89 2.88 2.87 2.87 2.86 2.89 2.88 2.87 2.86 2.85 2.82

CSV REL .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 RIV FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 DES FLOW .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50 .50
 SURFACE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 RUN FLOW .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00
 SHORTIE .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00

ANNUAL INPUT DATA FOR 1963

##INFLOWS

STA 9 .17 .66 .51 .27 .35 .28 .18 .18 .00 .04 .00 .00
 ##EVAPOREATION
 120.00 110.00 110.00 100.00 90.00 80.00 70.00 60.00 50.00 40.00 30.00 20.00 10.00

ALL FLOWS IN MGDS, STORAGES AND EVAP IN , AND POWER IN THOUSAND KW-H

1 ACQUE EPIT. FESSOR		0, SERVED BY 1											
		SERVING 1											
YR 1983	AVG	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LOC FLOW	.22	.17	.66	.51	.27	.35	.28	.18	.18	.00	.04	.00	.00
UNREG	.22	.17	.66	.51	.27	.35	.28	.18	.18	.00	.04	.00	.00
INFLOW	.22	.17	.66	.51	.27	.35	.28	.18	.18	.00	.04	.00	.00
EDP STR	443122528	437066484	436686512	430141112	426187232	422470080	418896960	414957792	410221792	404825376	399036384	393257696	
EDP EL	376.44	376.33	376.21	376.06	375.98	375.88	375.78	375.67	375.55	375.40	375.24	375.09	
EVAPD	46733350.0	44900491.0	4448106.0	4408740.0	3545069.0	3126568.0	2716075.0	3082068.0	3440018.0	4164339.0	4493035.0	4439526.0	
CASE	101	101	101	101	101	101	101	101	101	101	101	101	101
LEVEL	2.81	2.80	2.79	2.79	2.78	2.77	2.76	2.76	2.75	2.74	2.73	2.72	2.70
CSV REL	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
RTV FLOW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
DES FLOW	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SHORTAGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN FLOW	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHORTAGE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

AVERAGES FOR PERIOD OF OPERATION 1963 - 1963

1 ACQUE EPIT. FESSOR	
LOC FLOW	4.32
UNREG	4.32
INFLOW	4.32
EVAPD	42445670.0
CSV REL	.47
RTV FLOW	2.46
DES FLOW	.50
SHORTAGE	.03
MIN FLOW	.00
SHORTAGE	.00

DES FLOW SHORTAGE INDEX 1 3.953

MIN FLOW SHORTAGE INDEX 1 -1.000

DIVISION SHORTAGES DES FLOW SHORTAGES MIN FLOW SHORTAGES SYS PWR SHORTAGES AT SITE PWR SHORTAGES

STA	NO	MAX	NO	MAX	NO	MAX	NO	MAX	NO	MAX
1	-	-	16	.00	16	.00	0	.00	0	.00

STORAGE FREQUENCY PER 21 YEARS AT LOCATION 1

CONS POOL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
99-100 PCT	0	0	2	4	4	3	3	2	1	0	0	0
95-99 PCT	0	0	0	0	0	1	1	2	3	3	3	1

90- 95 PCT	3	3	3	1	0	0	3	3	3	3	3	3	3
80- 90 PCT	4	3	3	4	7	3	3	3	3	3	3	4	4
70- 80 PCT	5	3	3	3	4	3	3	3	3	3	3	3	3
60- 70 PCT	2	2	2	1	2	2	2	2	2	2	1	1	2
40- 60 PCT	3	3	3	1	0	0	2	2	2	2	3	3	3
20- 40 PCT	1	1	1	1	1	2	1	1	1	1	1	1	1
1- 20 PCT	1	1	1	1	1	1	1	1	1	1	1	1	1
0- 1 PCT	2	2	2	2	2	1	1	1	1	1	1	1	1