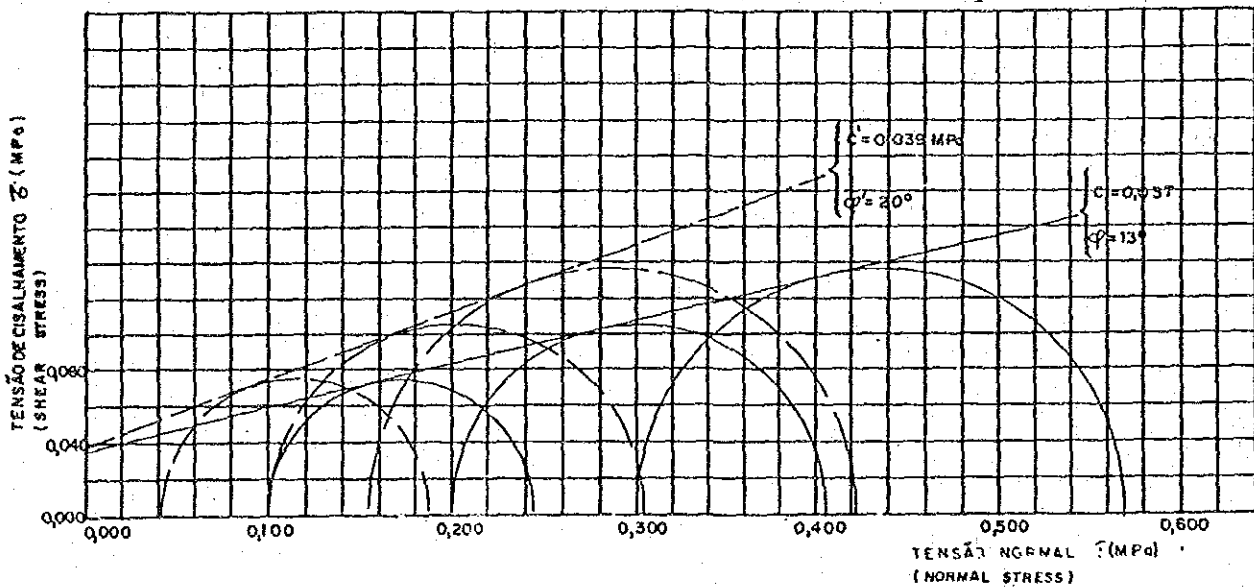
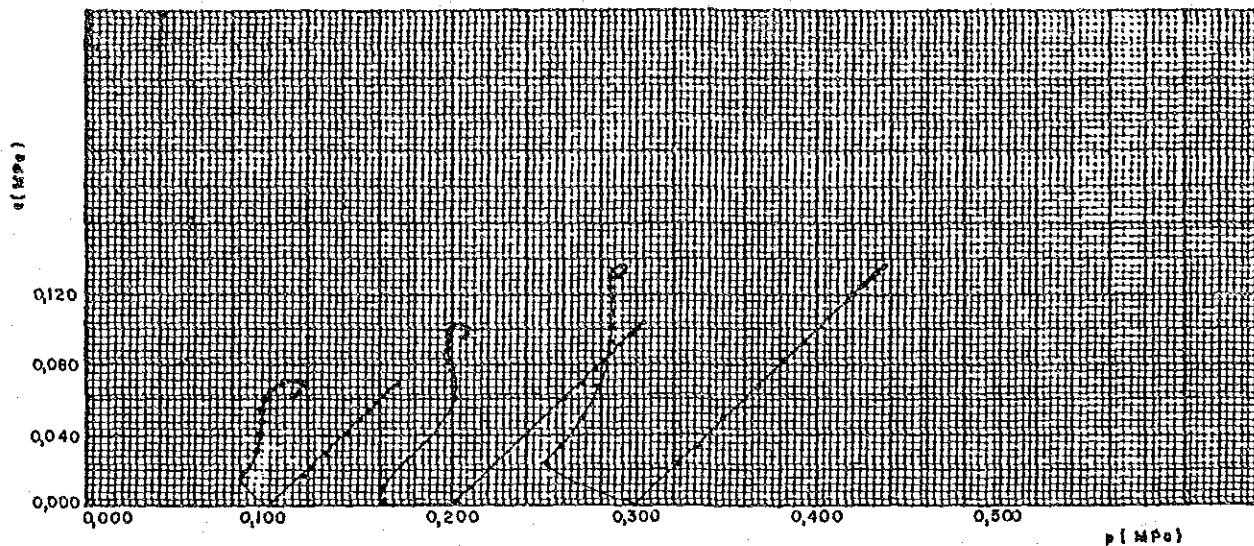


# Triaxial Compression Test



CP	$n_i$ (%)	$\gamma_{ni}$ (kg/m <sup>3</sup> )	$H_i$ (cm)	$D_i$ (cm)	$e_i$	$S$ (%)	$e_c$	$\bar{\sigma}_c$ (MPa)	$(\bar{\sigma}_3)_i$ (MPa)	$(\bar{\sigma}_3)_f$ (MPa)	$(\bar{\sigma}_1)_i$ (MPa)	$(\bar{\sigma}_1)_f$ (MPa)	$(\bar{\sigma}_1/\bar{\sigma}_3)_f$	$(A)_f$	$(\bar{\epsilon}_A)_f$ (%)	$(\mu)_f$ (MPa)
1	30,9	1,779	9,96	5,07	0,92	88	0,92	0,100	0,100	0,041	0,184	0,143	4,48	0,41	11,08	0,059
2	31,6	1,784	9,98	5,07	0,93	89	1,05	0,200	0,200	0,100	0,305	0,205	3,05	0,49	13,21	0,100
3	31,9	1,772	9,97	5,08	0,95	88	0,89	0,300	0,300	0,154	0,425	0,271	2,76	0,54	15,11	0,146

## LEGENDA

$n$  — UMIDADE (MOISTURE CONTENT)  
 $\gamma$  — PESO ESPECÍFICO APARENTE ÚMIDO (WET UNIT WEIGHT)  
 $H$  — ALTURA DO CORPO DE PROVA (SPECIMEN HEIGHT)  
 $D$  — DIÂMETRO DO CORPO DE PROVA (SPECIMEN DIAMETER)  
 $e$  — ÍNDICE DE VAZIOS (VOID RATIO)  
 $S$  — GRAU DE SATURAÇÃO (DEGREE OF SATURATION)  
 $i$  — CONDIÇÕES INICIAIS (INITIAL CONDITIONS)  
 $e_c$  — ÍNDICE DE VAZIOS APÓS O ADENSAMENTO (VOID RATIO AFTER CONSOLIDATION)  
 $\bar{\sigma}_c$  — PRESSÃO EFETIVA DE ADENSAMENTO (CONSOLIDATION EFFECTIVE PRESSURE)

$\bar{\sigma}_3$  — TENSÃO PRINCIPAL MENOR TOTAL (MINOR PRINCIPAL TOTAL STRESS)  
 $\bar{\sigma}_3'$  — TENSÃO PRINCIPAL MENOR EFETIVA (MINOR PRINCIPAL EFFECTIVE STRESS)  
 $\bar{\sigma}_1$  — TENSÃO PRINCIPAL MAIOR EFETIVA (MAJOR PRINCIPAL EFFECTIVE STRESS)  
 $\bar{\sigma}_1 - \bar{\sigma}_3$  — DIFERENÇA ENTRE AS TENSÕES PRINCIPAIS MAIOR E MENOR (DEVIATOR STRESS)  
 $\bar{\sigma}_1' / \bar{\sigma}_3'$  — RAZÃO ENTRE TENSÕES PRINCIPAIS EFETIVAS (PRINCIPAL EFFECTIVE STRESSES RATIO)  
 $A$  — PARÂMETRO "A" DE PRESSÃO NEUTRA (PORE PRESSURE PARAMETER A)  
 $\bar{\epsilon}_A$  — DEFORMAÇÃO AXIAL ESPECÍFICA (AXIAL STRAIN)  
 $\mu$  — TENSÃO NEUTRA (PORE PRESSURE)  
 $f$  — CONDIÇÕES NA ROTURA (FAILURE CONDITIONS)

Cliente  
 (Client) JICA

Furo (Boring)  
 FP-3

Prof. (m.) (Depth)  
 2,50-3,50

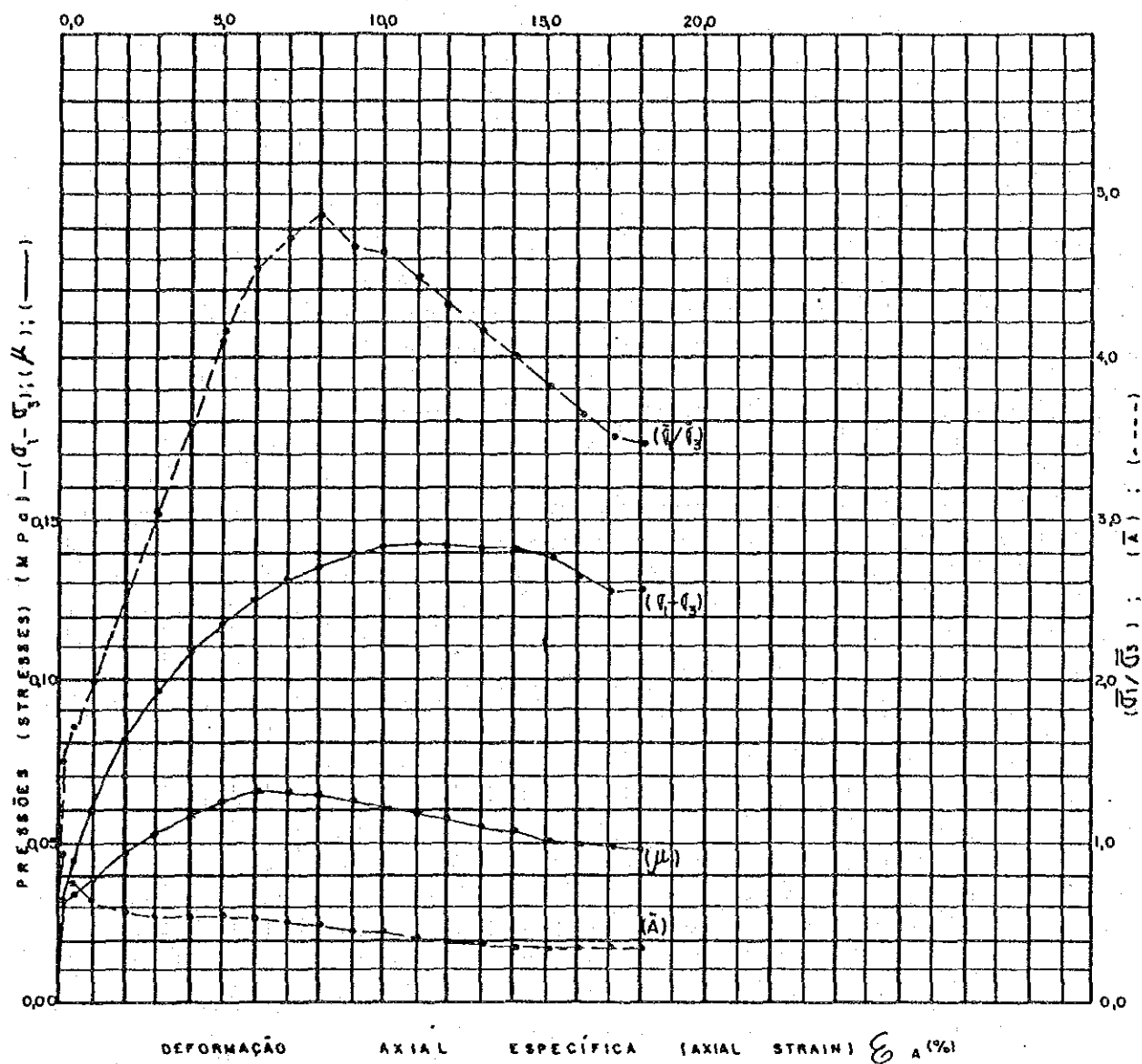
Des. (orig. by)  
 Cavaleiro

Des. n.º (Drawn)  
 223.857

Ref.:  
 PR SC-608

Site : Floodway to Piçarras Coast (Fp-3)

# Triaxial Compression Test



TIPO (TYPE) ADENSADO RÁPIDO CÚ NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $0.139 \times 10^{-2}$  mm/s.

CP	n <sub>i</sub>	$\bar{\sigma}_1$	H <sub>i</sub>	D <sub>i</sub>	$\sigma_i$	s <sub>i</sub>	$\sigma_c$	$(\sigma_1)$	$(\sigma_3)$	$(\bar{\sigma}_1)$	$(\sigma_1 - \sigma_3)$	$(\bar{\sigma}_1/\bar{\sigma}_3)$	(A)	( $\sigma_1$ )	( $\mu$ )
Specimen	(%)	(Kg/cm <sup>2</sup> )	(cm)	(cm)		(%)		(MPa)	(MPa)	(MPa)	(MPa)			(%)	(MPa)
1	30,9	1,779	9,96	5,07	0,92	88	0,92	0,100	0,100	0,041	0,143	4,48	0,41	11,08	0,059

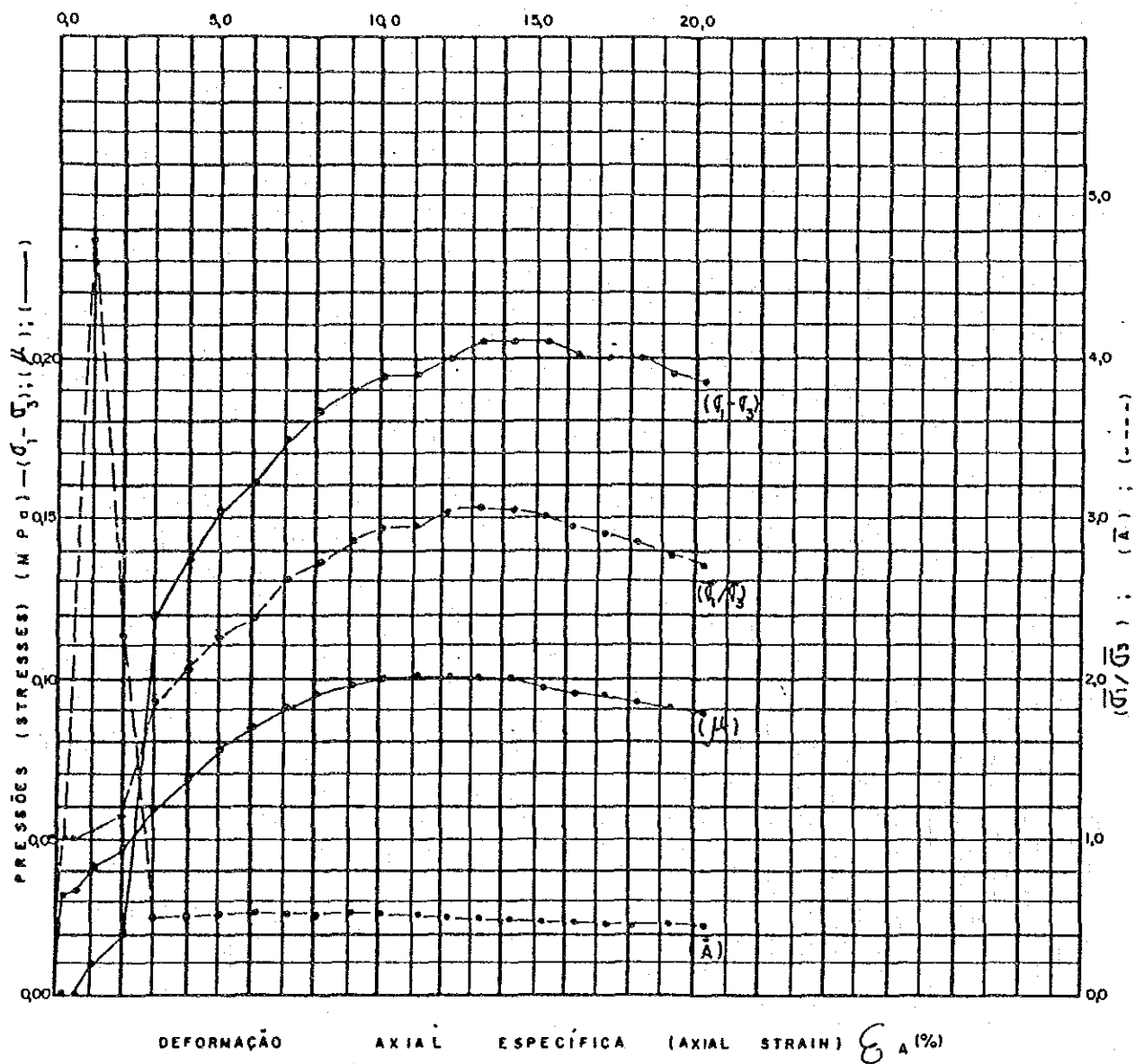
FURO (BORING) Fp - 3

AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 2,50 - 3,50 m

Site : Floodway to Piçarras Coast (Fp-3)

# Triaxial Compression Test



TIPO (TYPE) ADENSADO RÁPIDO CÚ NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $0,139 \times 10^{-2}$  mm/s.

CP	n <sub>i</sub>	$\bar{\sigma}_{h1}$	H <sub>1</sub>	D <sub>1</sub>	$\sigma_1$	s <sub>1</sub>	$\epsilon_c$	$\bar{\sigma}_c$	( $\sigma_3$ ) <sub>i</sub>	( $\bar{\sigma}_3$ ) <sub>i</sub>	( $\bar{\sigma}_1$ ) <sub>i</sub>	( $\sigma_1 - \sigma_3$ ) <sub>i</sub>	( $\bar{\sigma}_1 / \bar{\sigma}_3$ ) <sub>i</sub>	( $\mu$ ) <sub>i</sub>	( $\epsilon_{a1}$ ) <sub>i</sub>	( $\mu$ ) <sub>i</sub>
Specimen	(%)	(Kg/cm <sup>2</sup> )	(cm)	(cm)		(%)		(MPa)	(MPa)	(MPa)	(MPa)	(MPa)			(%)	(MPa)
2	31,6	1,784	2,98	5,07	0,93	89	1,05	0,200	0,200	0,100	0,305	0,205	3,05	0,49	13,21	0,100

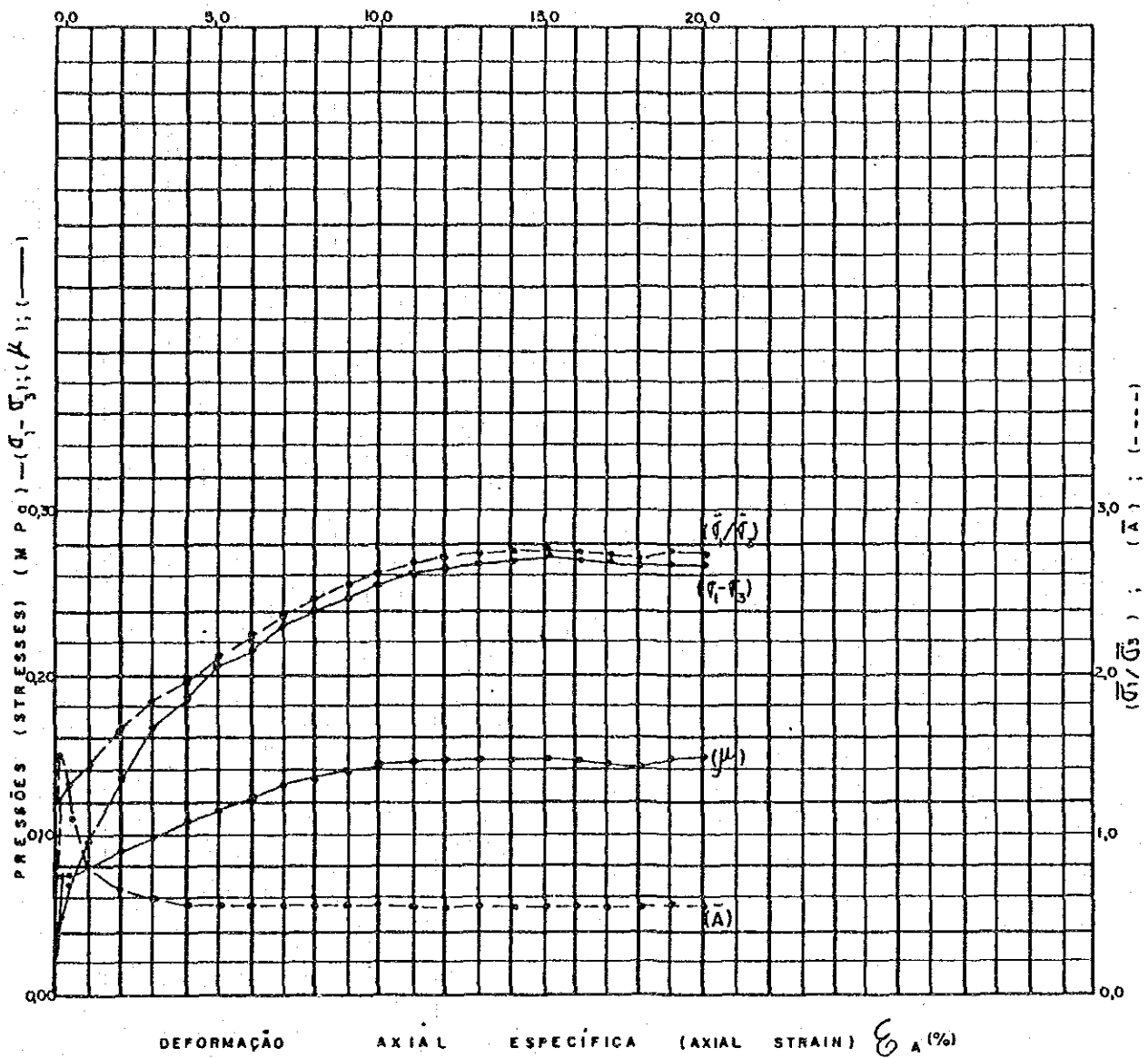
FURO (BORING) Fp-3

AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 2,50-3,50 m

Site : Floodway to Piçarras Coast (Fp-3)

# Triaxial Compression Test



TIPO (TYPE) ADENSADO RÁPIDO CÚ NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $0,139 \times 10^{-2}$  mm/s.

CP Specimen	h <sub>i</sub> (%)	$\gamma_{hi}$ (Kg/m <sup>3</sup> )	H <sub>i</sub> (cm)	D <sub>i</sub> (cm)	e <sub>i</sub>	s <sub>i</sub> (%)	e <sub>c</sub>	$\bar{\sigma}_c$ (MPa)	( $\sigma_3$ ) (MPa)	( $\bar{\sigma}_3$ ) (MPa)	( $\bar{\sigma}_1$ ) (MPa)	( $\sigma_1 - \sigma_3$ ) (MPa)	( $\bar{\sigma}_1 / \bar{\sigma}_3$ )	(A)	( $\epsilon_a$ ) (%)	( $\mu$ ) (MPa)
3	31,9	1,772	9,97	3,08	0,95	88	0,89	0,300	0,300	0,154	0,425	0,271	2,76	0,54	15,11	0,146

FURO (BORING) Fp - 3

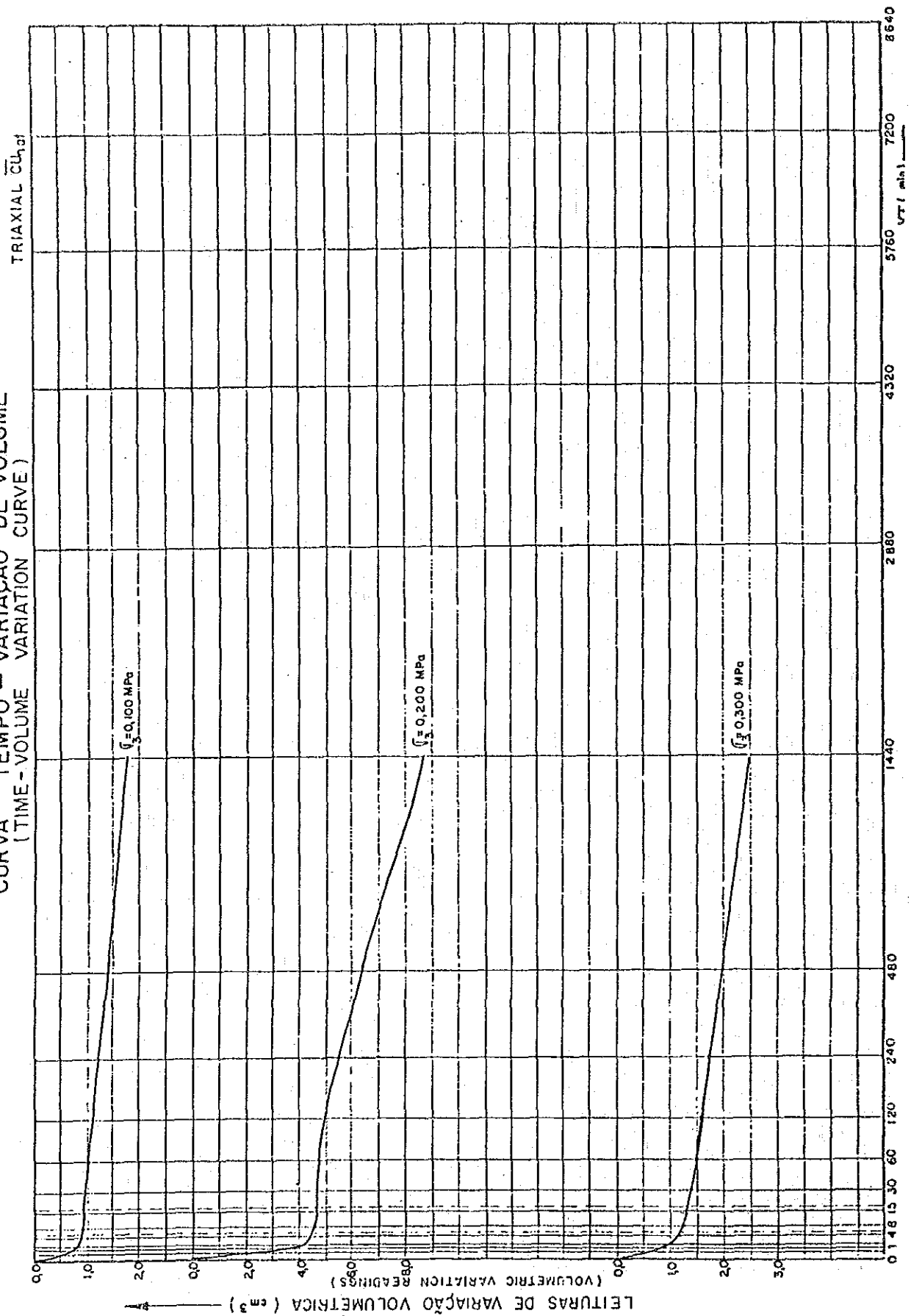
AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 2,50-3,50 m

Site : Floodway to Piçarras Coast (Fp-3)

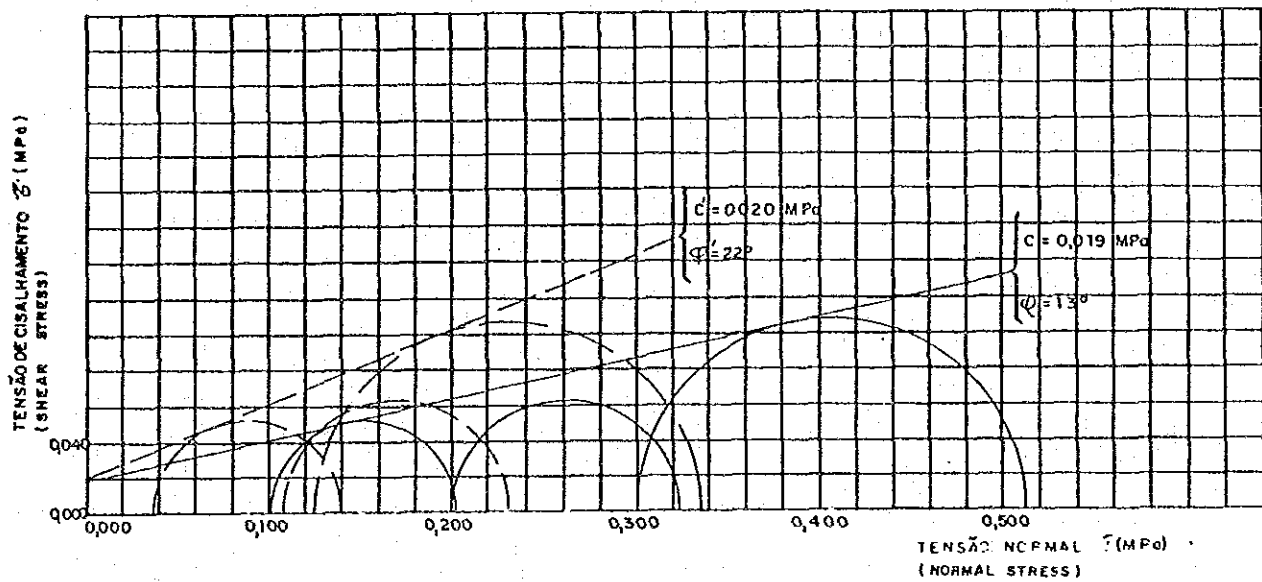
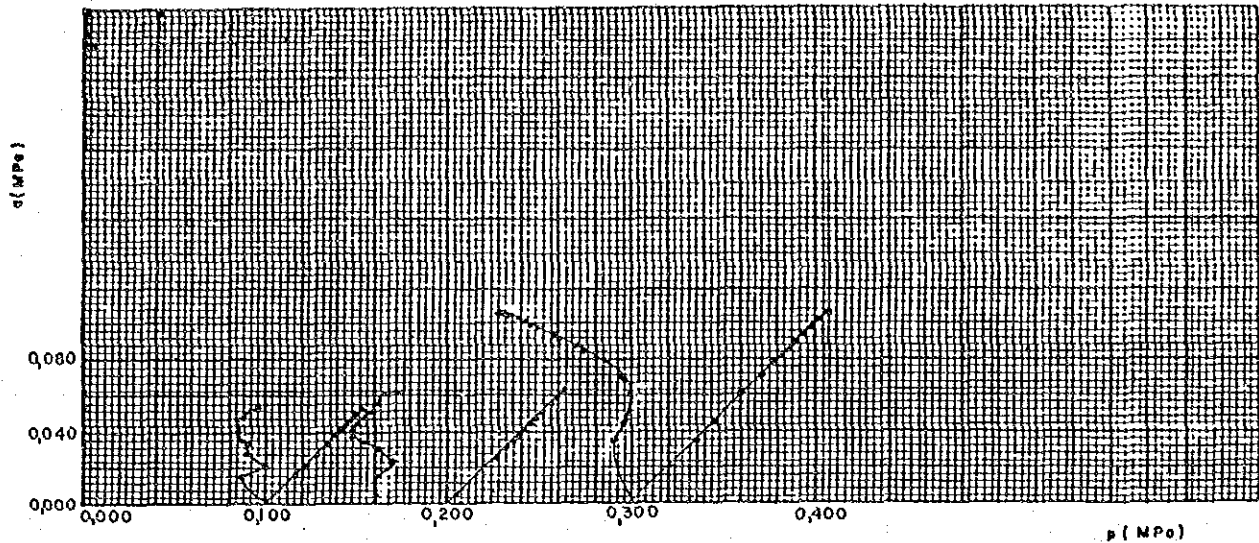
# Triaxial Compression Test

CURVA TEMPO - VARIAÇÃO DE VOLUME  
(TIME - VOLUME VARIATION CURVE)



Site : Floodway to Piçarras Coast (Fp-3)

# Triaxial Compression Test



CP	$h_i$ (%)	$\gamma_{hi}$ (kg/m <sup>3</sup> )	$H_i$ (cm)	$D_i$ (cm)	$e_i$	S (%)	$e_c$	$\bar{\sigma}_c$ (MPa)	$(\bar{\sigma}_3)_i$ (MPa)	$(\bar{\sigma}_3)_f$ (MPa)	$(\bar{\sigma}_1)_f$ (MPa)	$(\bar{\sigma}_1 - \bar{\sigma}_3)_f$ (MPa)	$(\bar{\sigma}_1 / \bar{\sigma}_3)_f$	A <sub>f</sub>	$(\bar{\sigma}_1)_f$ (%)	$\mu_f$ (MPa)
1	26,1	1,946	8,00	3,55	0,63	104	0,63	0,100	0,100	0,038	0,141	0,103	3,70	0,60	16,29	0,062
2	26,0	1,940	7,98	3,55	0,63	104	0,56	0,200	0,200	0,107	0,233	0,126	2,18	0,74	19,06	0,093
3	26,4	1,947	8,00	3,55	0,63	105	0,53	0,300	0,300	0,125	0,337	0,212	2,69	0,83	16,52	0,175

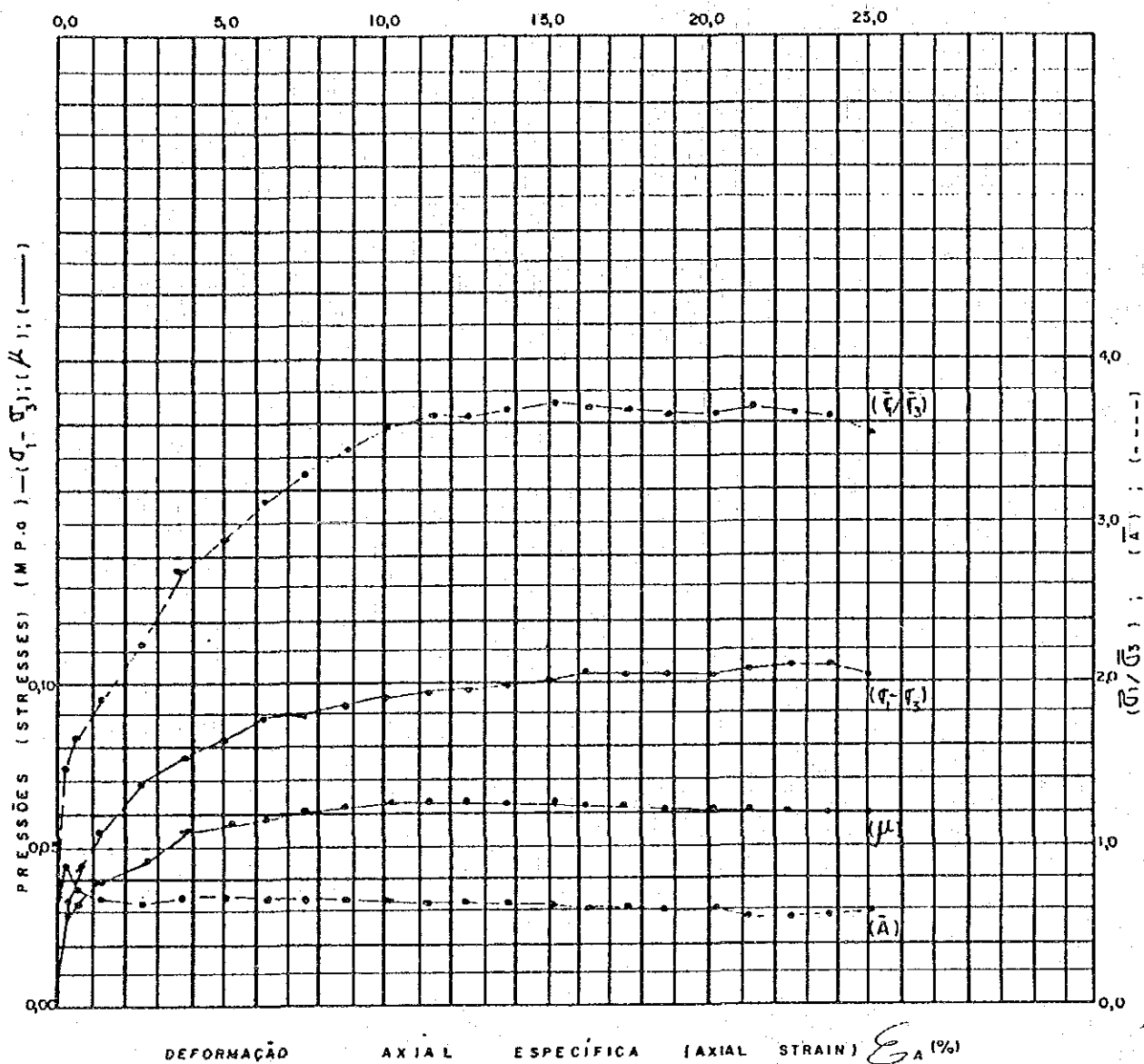
## LEGENDA

$h$ — UMIDADE (MOISTURE CONTENT)	$\bar{\sigma}_3$ — TENSÃO PRINCIPAL MENOR TOTAL (MINOR PRINCIPAL TOTAL STRESS)
$\gamma$ — PESO ESPECÍFICO APARENTE ÚMIDO (WET UNIT WEIGHT)	$\bar{\sigma}_3$ — TENSÃO PRINCIPAL MENOR EFETIVA (MINOR PRINCIPAL EFFECTIVE STRESS)
$H$ — ALTURA DO CORPO DE PROVA (SPECIMEN HEIGHT)	$\bar{\sigma}_1$ — TENSÃO PRINCIPAL MAIOR EFETIVA (MAJOR PRINCIPAL EFFECTIVE STRESS)
$D$ — DIÂMETRO DO CORPO DE PROVA (SPECIMEN DIAMETER)	$\bar{\sigma}_1 - \bar{\sigma}_3$ — DIFERENÇA ENTRE AS TENSÕES PRINCIPAIS MAIOR E MENOR (DEVIATOR STRESS)
$e$ — ÍNDICE DE VAZIOS (VOID RATIO)	$\bar{\sigma}_1 / \bar{\sigma}_3$ — RAZÃO ENTRE TENSÕES PRINCIPAIS EFETIVAS (PRINCIPAL EFFECTIVE STRESSES RATIO)
$S$ — GRAU DE SATURAÇÃO (DEGREE OF SATURATION)	$A$ — PARÂMETRO "A" DE PRESSÃO NEUTRA (PORE PRESSURE PARAMETER A)
$i$ — CONDIÇÕES INICIAIS (INITIAL CONDITIONS)	$\epsilon_A$ — DEFORMAÇÃO AXIAL ESPECÍFICA (AXIAL STRAIN)
$e_c$ — ÍNDICE DE VAZIOS APÓS O ADENSAMENTO (VOID RATIO AFTER CONSOLIDATION)	$\mu$ — TENSÃO NEUTRA (PORE PRESSURE)
$\bar{\sigma}_c$ — PRESSÃO EFETIVA DE ADENSAMENTO (CONSOLIDATION EFFECTIVE PRESSURE)	$f$ — CONDIÇÕES NA ROTURA (FAILURE CONDITIONS)

Cliente (Client) JICA	Furo (Boring) Fp-4	Prof. (m) (Depth) 300 - 400	Des. (Dr'd by) JICA	Des. n.º (Drawn) 223.862	Ref. DD 00 600
--------------------------	-----------------------	--------------------------------	------------------------	-----------------------------	-------------------

Site : Floodway to Piçarras Coast (Fp-4)

## Triaxial Compression Test



TIPO (TYPE) ADENSADO RÁPIDO CÚ NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $0,139 \times 10^{-2}$  mm/s.

CP	$h_i$	$\bar{F}_{h_i}$	$H_i$	$D_i$	$\sigma_i$	$S_i$	$\epsilon_i$	$\bar{\sigma}_i$	$(\sigma_3)_i$	$(\bar{\sigma}_3)_i$	$(\bar{\sigma}_1)_i$	$(\sigma_1 - \sigma_3)_i$	$(\bar{\sigma}_1 - \bar{\sigma}_3)_i$	$(A)_i$	$(\epsilon_n)_i$	$(\mu)_i$
Specimen	(%)	(Kg/m <sup>2</sup> )	(cm)	(cm)	(%)	(%)	(%)	(MPa)	(MPa)	(MPa)	(MPa)	(MPa)	(MPa)	(A)	(%)	(MPa)
I	26,1	1,946	8,00	3,55	0,63	10,4	0,63	0,100	0,100	0,038	0,141	0,103	3,70	0,60	16,29	0,062

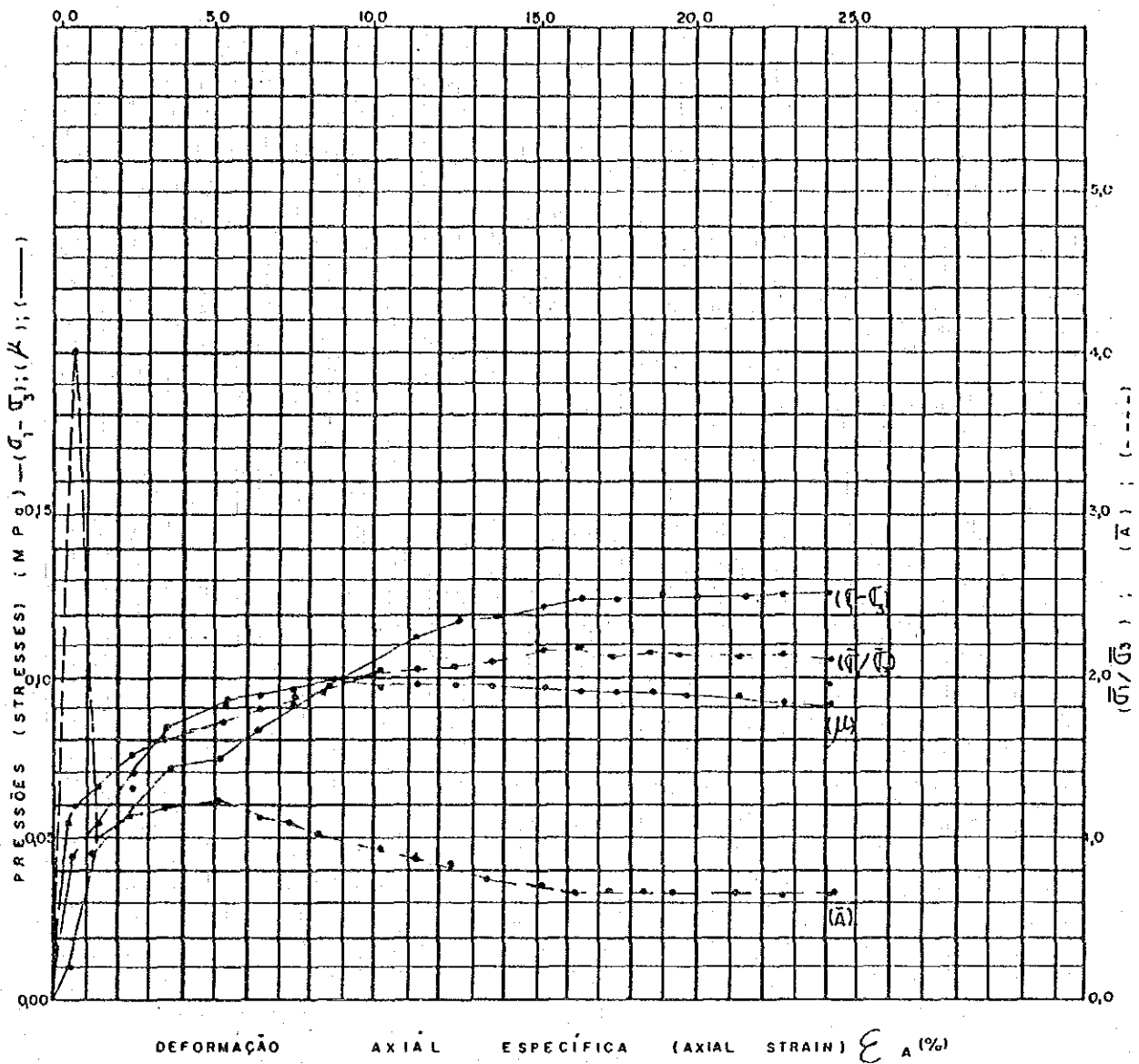
FURO (BORING) Fp-4

AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 3,00 - 4,00

Site : Floodway to Piçarras Coast (Fp-4)

# Triaxial Compression Test



TIPO (TYPE) ADENSADO RÁPIDO OU NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $0.139 \times 10^{-2} \text{ mm/s}$

CP	$n_i$	$\bar{h}_i$	$H_i$	$D_i$	$e_i$	$s_i$	$e_c$	$\bar{\sigma}_c$	$(\sigma_3)_i$	$(\bar{\sigma}_3)_i$	$(\bar{\sigma}_1)_i$	$(\sigma_1 - \sigma_3)_i$	$(\bar{\sigma}_1/\bar{\sigma}_3)_i$	$(A)_i$	$(\epsilon_A)_i$	$(\mu)_i$
Specimen	(%)	(Kg/m <sup>3</sup> )	(cm)	(cm)		(%)		(MPa)	(MPa)	(MPa)	(MPa)	(MPa)			(%)	(MPa)
2	26.0	1.940	7.98	3.55	0.63	104	0.56	0.200	0.200	0.107	0.233	0.126	2.18	0.74	12.06	0.093

FURO (BORING) Fp - 4

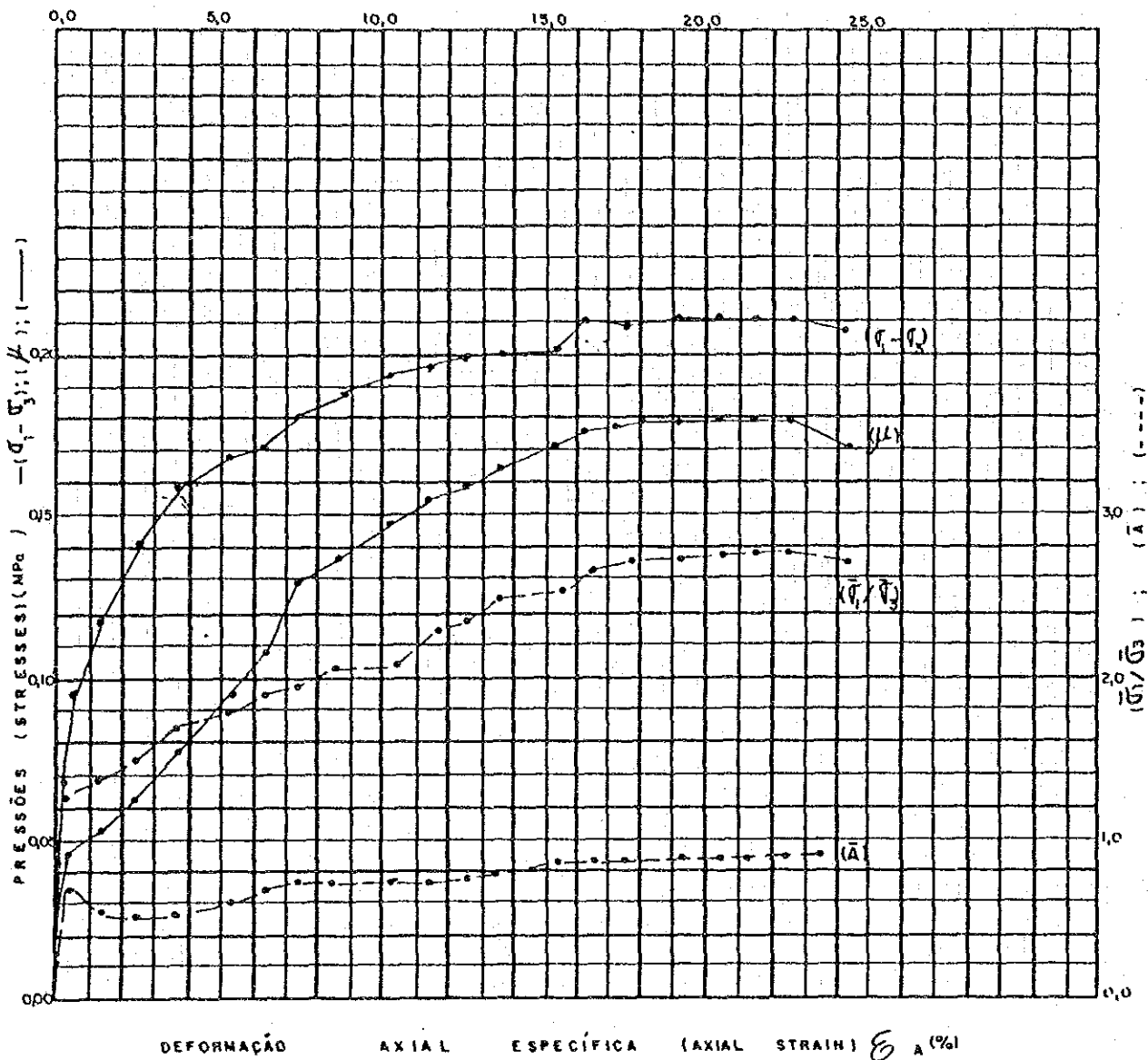
AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 3.00 - 4.00 m

Site : Floodway to Piçarras Coast (Fp-4)



# Triaxial Compression Test



TIPO (TYPE) ADENSADO RAPIDO E NÁ NATURAL (QUICK CONSOLIDATED)

VELOCIDADE AXIAL (AXIAL VELOCITY)  $10,139 \times 10^{-2}$  mm/s.

CP	n <sub>i</sub>	T <sub>h<sub>i</sub></sub>	H <sub>i</sub>	D <sub>i</sub>	ρ <sub>i</sub>	s <sub>i</sub>	e <sub>i</sub>	σ <sub>c</sub>	(σ <sub>3</sub> ) <sub>i</sub>	(σ <sub>3</sub> ) <sub>i</sub>	(σ <sub>1</sub> ) <sub>i</sub>	(σ <sub>1</sub> -σ <sub>3</sub> ) <sub>i</sub>	(σ <sub>3</sub> /σ <sub>1</sub> ) <sub>i</sub>	(A) <sub>i</sub>	(ε <sub>A</sub> ) <sub>i</sub>	(μ) <sub>i</sub>
Specimen	(%)	(Kg/m <sup>3</sup> )	(cm)	(cm)		(%)		(MPa)	(MPa)	(MPa)	(MPa)	(MPa)			(%)	(MPa)
3	26,4	1,947	8,00	3,55	0,63	105	0,53	0,300	0,300	0,125	0,337	0,212	2,69	0,83	16,52	0,175

FURO (BORING) Fp-4

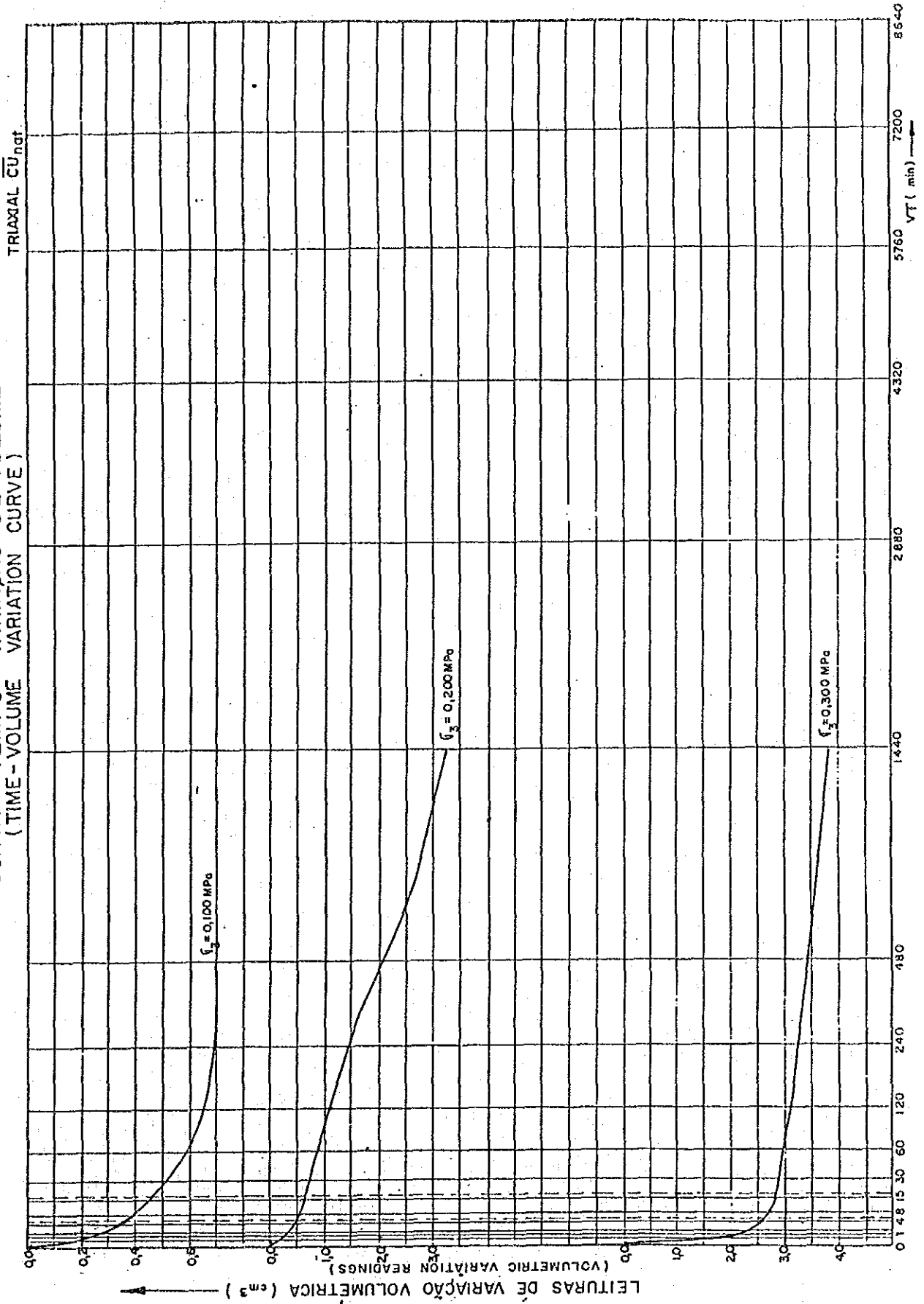
AMOSTRA (SAMPLE) 1

PROFUNDIDADE (DEPTH) 3,00 - 4,00 m

Site : Floodway to Piçarras Coast (Fp-4)

# Triaxial Compression Test

CURVA TEMPO - VARIAÇÃO DE VOLUME  
(TIME - VOLUME VARIATION CURVE)



Site : Floodway to Piçarras Coast (Fp-4)



## ***C COASTAL INVESTIGATION***

### ***C.1 Tide Water Level at Piçarras Coast***



\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARRAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39 6 W

DURATION : DEC. 1.-DEC. 31. 1988

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. T	H.W. T	L.W. T				
1																																
2																																
3																																
4																																
5																																
6	20	13	4	-23	-33	-42	-45	-43	-46	-38	-21	1	14	14	0	-17	-41	-63	-68	-66	-51	-31	-10	10	0654	-43	0606	-45	1230	16	0746	-46
7	23	26	12	-9	-28	-40	-47	-50	-49	-42	-29	-10	10	20	15	-4	-32	-57	-65	-68	-63	-45	-25	-4	0041	27	0715	-50	1310	20	1853	-68
8	16	32	28	8	-16	-36	-46	-47	-45	-43	-45	-36	-17	6	10	-2	-26	-61	-74	-83	-87	-77	-56	-33	0118	33	0650	-47	0754	-45	0900	-48
9	-1	21	30	18	-2	-22	-39	-36	-37	-40	-38	-32	-20	4	28	29	5	-24	-46	-57	-64	-59	-46	-23	0156	30	0621	-40	0715	-36	0906	-40
10	3	32	58	60	43	18	-2	-9	-12	-8	-13	-16	-10	4	21	36	16	-9	-29	-46	-58	-65	-67	-59	0236	61	0756	-12	0857	-8	1050	-16
11	-37	-11	18	39	35	11	-11	-29	-34	-29	-23	-26	-31	-29	-17	4	9	-8	-28	-49	-64	-73	-78	-78	0320	40	0800	-34	1010	-23	1213	-31
12	-68	-43	-13	16	28	16	-6	-26	-43	-34	-27	-20	-28	-42	-37	-19	-1	-3	-24	-42	-57	-65	-76	-83	0400	28	0809	-43	1058	-20	1314	-43
13	-84	-73	-51	-13	10	18	2	-20	-33	-37	-24	-9	-10	-23	-33	-27	4	1	-10	-24	-36	-45	-52	0450	18	0844	-38	1126	-7	1407	-33	
14	-55	-52	-42	-23	4	35	37	17	-2	-12	-4	16	24	19	7	-2	4	18	28	24	10	-1	-8	-14	0535	39	0900	-55	1207	24	0903	-12
15	-22	-35	-40	-28	-6	13	30	27	6	-4	-9	-5	14	20	6	-9	-16	-15	6	16	9	0	-10	-20	0621	31	0148	-40	1248	20	1003	-9
16	-31	-44	-54	-44	-23	-6	3	1	-12	-19	-16	-3	10	14	2	-15	-22	-7	12	22	20	13	4	0719	4	0230	-55	1345	15	1012	-19	
17	-4	-13	-26	-36	-39	-31	-18	-6	4	7	-4	-13	-11	0	10	7	-14	-29	-29	-18	5	19	17	8	0843	8	0346	-39	1416	10	1119	-14
18	-2	-11	-21	-30	-39	-47	-46	-33	-16	-3	-10	-18	-21	-18	-12	-8	-17	-37	-53	-50	-33	-13	11	6	0909	-3	0524	-48	1448	-8	1300	-21
19	-3	5	-16	-23	-32	-46	-55	-48	-33	-21	-13	-10	-18	-23	-18	-21	-20	-28	-41	-47	-42	-21	12	29	0047	6	0002	-3	1046	-10	0604	-55
20	34	30	21	11	-1	-13	-26	-34	-28	-9	6	20	25	20	10	2	-5	-12	-19	-27	-34	-21	19	39	0003	34	0704	-34	1200	25	1951	-34
21	53	53	43	27	14	6	2	-2	-9	-6	2	17	33	30	16	4	-6	-16	-25	-34	-40	-36	-20	6	0030	54	0812	-9	1221	34	2006	-40
22	39	52	53	41	13	-3	-11	-16	-19	-21	-21	-10	9	22	13	-7	-28	-43	-52	-56	-62	-63	-51	-37	0135	54	0930	-22	1305	22	2035	-64
23	-8	17	36	27	11	-17	-30	-32	-26	-25	-27	-25	-12	8	17	17	-3	-26	-43	-49	-52	-56	-49	-27	0211	36	0645	-32	0830	-26	0950	-27
24	-9	18	45	52	39	15	-4	-13	-12	-5	-1	3	9	21	41	41	19	6	-27	-42	-47	-44	-50	-38	0251	52	0724	-14	1430	44	2007	-47
25	-23	1	27	51	51	30	6	-13	-20	-9	0	3	5	11	23	33	36	15	-13	-36	-46	-44	-37	-38	0330	54	0753	-20	1538	38	2020	-47
26	-30	-12	9	34	56	41	28	4	-19	-13	-4	12	14	14	18	33	50	33	8	-10	-41	-42	-39	-38	0406	56	0818	-20	1800	50	2045	-42
27	-32	-24	-6	13	34	42	27	14	-10	-23	-20	-1	8	12	13	19	30	35	22	-6	-26	-41	-39	-30	0451	42	0919	-24	1647	35	2123	-42
28	-28	-25	-21	-8	14	30	29	19	-4	-21	-28	-25	-8	7	11	7	16	32	32	11	-9	-25	-31	-23	0526	32	1012	-28	1400	11	1448	7
29	-17	-9	-9	1	18	33	52	44	30	18	4	5	16	24	31	33	37	48	58	47	31	12	-1	-3	0612	53	1026	3	1759	58	2254	-3
30	0	2	2	4	11	20	26	33	25	14	1	-10	-11	-10	-6	1	-3	7	14	17	5	-10	-23	-31	0658	33	1200	-11	1508	1	1547	-3
31	-30	-27	-29	-31	-33	-24	-10	-1	0	-4	-11	-19	-23	-25	-24	-19	-17	-14	-8	0	5	-2	-14	-27	0106	-27	0341	-34	0742	0	1310	-25

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	***** MONTHLY MEAN *****
SUN																
MEAN																
									</							

\*\*\*\*\*

HOURLY TIDAL OBSERVATIONS

\*\*\*\*\*

AREA : PICARRAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39 6 W

DURATION : JAN 1.-JAN. 31, 1989

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. CM	H.W. T	L.W. CM	H.W. T	L.W. CM	H.W. T	L.W. CM		
1	-32	-29	-28	-30	-33	-31	-23	-14	-5	-3	-5	-15	-20	-25	-29	-31	-31	-28	-21	-9	0	5	5	-6	0150	-28	0406	-33	0900	-3	1530	-31		
2	-15	-22	-24	-25	-31	-36	-36	-29	-20	-9	-4	-10	-14	-21	-32	-39	-39	-41	-39	-29	-16	-3	0	1	0957	-4	0530	-37	2250	1	1700	-41		
3	-1	-7	-14	-20	-26	-30	-34	-37	-35	-28	-14	-2	4	0	-9	-15	-32	-45	-55	-40	-25	-8	9	16	1206	4	0706	-37	2339	17	1754	-55		
4	17	11	-3	-12	-14	-20	-30	-41	-41	-33	-14	6	10	8	-1	-16	-32	-43	-57	-53	-38	-20	5	20					0730	-42	1210	10	1817	-58
5	29	23	16	0	-11	-19	-25	-33	-40	-36	-25	-6	8	8	5	-13	-28	-46	-57	-73	-63	-39	-21	8	0006	29	0808	-40	1230	8	1907	-73		
6	30	38	35	22	6	-9	-16	-25	-31	-32	-29	-22	1	22	25	15	-1	-21	-50	-66	-73	-62	-41	-15	0114	38	0845	-32	1344	25	1953	-73		
7	18	32	41	36	22	5	-14	-23	-28	-38	-43	-33	-18	13	23	23	9	-13	-35	-61	-75	-77	-62	-26	0208	41	0950	-43	1430	25	2037	-78		
8	8	31	55	65	51	37	8	4	1	1	-6	-9	4	26	54	61	51	25	-3	-25	-39	-45	-44	-27	0355	65	1041	-10	1455	61	2122	-45		
9	6	36	65	84	81	67	48	31	21	23	24	23	15	13	28	59	75	73	45	19	-8	-19	-29	-35	0322	85	0820	20	1000	24	1237	12		
10	-23	8	41	66	85	75	57	30	13	14	19	21	19	15	16	34	60	61	43	21	-1	-23	-33	-44	0409	85	0827	11	1100	21	1318	15		
11	-44	-25	2	29	59	66	51	28	9	1	11	19	22	14	11	21	40	56	53	27	2	-15	-30	-36	0449	66	0857	1	1146	22	1344	11		
12	-47	-47	-40	-20	13	33	38	21	-1	-29	-27	-11	0	1	-4	-12	-10	10	26	20	5	-13	-28	-35	0544	39	0930	-48	1240	1	0926	-32		
13	-39	-48	-51	-38	-21	1	22	24	-4	-25	-30	-21	-6	15	14	7	7	20	32	28	9	-1	-7	0634	27	0141	-52	1327	17	0951	-30			
14	-4	0	-22	-24	-16	-3	16	28	12	-13	-26	-27	-10	9	21	9	-8	-12	5	18	24	13	3	-6	0039	2	0242	-24	0656	28	1033	-29		
15	-8	-11	-16	-23	-27	-20	-7	3	-6	-21	-32	-33	-22	-10	-2	-7	-18	-32	-25	-9	7	7	8	9	0702	3	0352	-27	1407	-2	1035	-34		
16	7	5	-2	-24	-26	-31	-16	-4	-6	-9	-15	-15	-10	1	5	4	-16	-27	-26	-14	3	16	22	28	0731	-3	0445	-32	1418	5	1030	-16		
17	29	28	21	15	8	-1	-12	-6	0	10	20	16	10	5	4	12	15	3	-10	-18	-17	-5	14	26	0015	29	0609	-12	1013	20	1337	3		
18	38	44	43	38	31	20	3	-6	9	1	9	20	22	10	10	0	-7	-12	-25	-39	-45	-31	-15	8	0122	44	0744	-9	1139	23	1948	-45		
19	27	28	27	14	5	-3	-11	-21	-27	-28	-22	-9	8	6	5	-15	-14	-27	-44	-51	-66	-59	-44	-17	0100	28	0839	-28	1224	9	1527	-17		
20	21	36	26	42	28	3	-3	-9	-27	-27	-6	7	18	43	36	19	3	-20	-29	-40	-63	-44	-44	-31	0106	36	0153	26	0302	42	0830	-30		
21	12	45	48	61	44	15	-10	-3	-25	-18	-7	-4	14	30	43	46	19	-13	-32	-42	-52	-54	-51	-34	0256	61	0617	-11	0644	-2	0816	-26		
22	-8	19	46	58	53	35	-1	-13	-15	-19	-3	1	-7	30	40	40	46	7	-30	-46	-51	-55	-41	0313	58	0842	-20	1050	1	1141	-9			
23	-27	-5	26	49	56	39	21	-8	-25	-30	-11	-4	3	19	35	55	64	38	0	-26	-42	-44	-35	-31	0347	57	0843	-31	1545	65	2041	-45		
24	-20	-17	7	38	66	55	24	-2	-26	-34	-32	-13	-4	7	16	31	42	40	1	-27	-59	-61	-59	-60	0413	67	0918	-34	1621	43	2100	-61		
25	-58	-33	-43	-5	17	31	22	-5	-43	-58	-49	-43	-28	-6	3	20	34	34	21	-6	-39	-52	-60	-46	0113	-32	0143	-45	0506	31	0907	-58		
26	-33	-18	-10	2	22	48	49	22	-2	-24	-35	-23	-5	5	15	24	35	43	38	14	-13	-39	-52	-46	0532	52	0959	-35	1707	43	2211	-52		
27	-35	-27	-20	3	14	25	43	29	9	-25	-29	-25	-12	7	18	24	31	46	54	46	21	3	-13	-18	0604	43	1000	-29	1800	54	2300	-18		
28	-13	7	11	5	21	29	44	43	24	-1	-14	-20	-14	-4	2	11	16	19	27	30	13	-1	-30	-31	0154	41	0246	4	0626	46	1100	-20		
29	-22	-16	-17	-23	-20	-11	2	9	1	-14	-27	-35	-35	-29	-28	-20	-15	-12	-4	5	6	-13	-24	-35	0121	-16	0310	-23	0658	9	1130	-36		
30	-34	-25	-17	-22	-31	-25	-21	-10	-10	-19	-17	-23	-26	-21	-19	-15	-16	-9	-4	12	11	11	12	9	0207	-17	0406	-31	0730	-9	0919	-20		
31	10	12	24	13	10	1	-1	11	12	11	22	19	14	13	11	4	0	-2	-2	6	16	23	22	21	0201	24	0539	-2	0800	12	0835	10		

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*  
( 31 DAYS )

SUM  
-295.  
MEAN  
-12.3

14  
-13.  
-0.5

13  
-105.  
-4.4

12  
-157.  
-6.5

11  
371.  
15.5

10  
574.  
23.9

9  
745.  
31.0

8  
284.  
11.8

7  
-324.  
-13.5

6  
-299.  
-12.5

5  
-438.  
-18.3

4  
-391.  
-16.3

3  
-448.  
-18.7

2  
-533.  
-22.2

1  
-437.  
-18.2

C1.2

\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARRAS  
STATION : TIDE  
LATITUDE : 26 46 9 S  
LONGITUDE : 48 39 6 W  
DURATION : FEB. 1-FEB. 28, 1989  
UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	E.W. CM T	L.W. CM T	E.W. CM T	L.W. CM T
1	25	22	21	18	6	-9	-21	-26	-13	-8	0	8	5	4	-3	-13	-25	-32	-31	-23	-18	-4	10	22	1114	8 0553	-26	1723
2	30	33	28	29	18	5	-7	-16	-15	-3	9	19	30	34	29	21	9	-8	-19	-27	-12	1	22	40	0053	33 0320	28	0235
3	56	63	56	50	46	26	14	-6	-15	-12	6	26	36	40	37	26	9	-17	-37	-48	-46	-34	-8	17	0100	63 0315	-15	1304
4	43	59	51	50	38	23	6	-4	-19	-27	-18	3	25	48	49	43	25	-5	-24	-46	-49	-44	-26	1	0110	59 0358	-27	1339
5	36	61	73	72	59	42	29	17	3	-13	-17	-8	15	44	60	63	45	19	-12	-35	-51	-57	-51	-29	0226	74 0948	-17	1439
6	9	40	66	73	65	43	17	4	-4	-6	-16	-25	-19	9	43	64	55	31	-2	-33	-58	-71	-79	-58	0258	73 1106	-25	1512
7	-29	6	41	61	64	41	12	-10	-11	-5	-9	-22	-22	-5	25	58	72	48	13	-22	-39	-52	-65	-61	0337	66 0739	-11	0906
8	-39	1	39	70	78	51	22	7	2	9	15	13	11	17	47	73	93	83	45	17	-1	-10	-20	-28	0344	79 0755	2	1015
9	-17	7	43	79	85	63	40	15	-1	4	18	26	18	21	27	41	67	83	69	37	5	-15	-18	-20	0343	86 0816	-2	1100
10	-27	-20	-3	21	43	56	37	7	-13	-28	-14	8	18	15	4	6	23	49	51	26	-1	-18	-29	-21	0454	56 0900	-27	1216
11	-19	-25	-20	-10	10	27	4	23	-3	-29	-43	-16	3	6	5	-2	-3	13	34	26	9	-11	-16	-12	0519	28 0103	-25	1315
12	2	-4	-1	-13	-7	4	16	7	-18	-30	-41	-27	-5	8	10	-2	-7	15	5	19	14	4	1	12	0012	-13 0604	16 0956	-41
13	10	16	8	1	-7	-7	1	6	-5	-24	-36	-36	-19	-3	10	3	-8	-18	-17	-1	7	14	18	13	0056	16 0430	-8 0653	6 1030
14	17	25	32	26	17	6	2	8	10	13	3	-6	-3	3	15	19	9	-7	-17	-9	5	19	26	28	0202	32 0600	2 0844	13 1115
15	32	36	37	36	24	13	-1	-3	-2	9	17	8	1	-2	-3	3	-5	-13	-28	-29	-21	-4	13	27	0200	37 0710	-3 0958	17 1339
16	35	34	34	31	26	9	0	-13	-15	1	11	12	10	5	1	-4	-10	-26	-40	-49	-45	-23	-2	16	0024	36 0737	-16 1050	12 1912
17	30	41	37	25	18	7	-7	-17	-22	-12	5	20	23	18	10	-1	-11	-25	-37	-51	-54	-38	-17	11	0114	41 0750	-22 1153	23 1939
18	38	52	49	40	21	4	-13	-13	-21	-9	8	23	39	51	37	12	-5	-22	-29	-45	-51	-40	-25	-2	0119	53 0754	-21 1258	51 1951
19	28	51	67	57	36	6	-18	-23	-22	-21	-3	12	33	47	47	33	3	-20	-39	-52	-58	-58	-45	-21	0207	67 0720	-23 1330	49 2030
20	12	38	56	61	45	17	-15	-33	-31	-24	-13	-1	20	44	61	63	30	0	-28	-48	-55	-54	-44	-27	0244	62 0724	-35 1433	66 2023
21	-2	25	43	60	59	32	-2	-31	-39	-32	-16	3	11	34	49	66	51	16	-17	-46	-59	-55	-51	-45	0327	62 0802	-39 1502	66 2016
22	-17	11	33	55	59	43	3	-24	-54	-34	-18	-1	20	32	50	69	80	53	21	-13	-33	-31	-26	-13	0342	60 0806	-54 1547	81 2025
23	-1	22	43	69	84	66	38	3	-22	-26	-16	0	27	38	41	62	73	65	40	-2	-33	-42	-32	-26	0357	84 0847	-26 1605	73 2058
24	-14	-2	17	31	46	56	27	1	-30	-43	-39	-19	-9	13	29	41	54	50	36	6	-22	-37	-30	-18	0445	57 0816	-44 1616	55 2111
25	-16	-2	7	17	30	41	31	9	-17	-45	-42	-34	24	1	15	23	36	51	38	15	-9	-22	-25	-11	0501	41 0824	-48 1213	26 1307
26	6	14	23	21	32	49	52	39	20	-2	-7	4	11	20	33	41	54	68	69	50	29	11	4	12	0219	24 0839	20 0541	53 0949
27	16	21	24	18	21	29	34	26	6	-8	-15	-11	-7	1	11	10	14	29	36	28	17	4	-4	3	0150	24 0810	18 0553	34 1008
28	14	18	14	6	-2	6	6	3	-3	-11	-20	-29	-26	-27	-23	-25	-20	-15	-6	-1	-7	-13	-18	-18	0100	18 0400	-2 0530	6 1115

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SUM	MEAN
SUM	-95.	250.	10.4	285.	202.	8.4	365.	15.2	148.	6.2	148.	89.	3.7	24.8	677.	239.	140.
MEAN	-4.0	10.4	11.9	11.9	8.4	3.1	15.2	1.7	14.8	0.6	12.5	7.9	3.8	2.8	10.0	5.8	7.2

\*\*\*\*\* DAILY MEAN \*\*\*\*\*

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SUM	MEAN
SUM	-95.	250.	10.4	285.	202.	8.4	365.	15.2	148.	6.2	148.	89.	3.7	24.8	677.	239.	140.
MEAN	-4.0	10.4	11.9	11.9	8.4	3.1	15.2	1.7	14.8	0.6	12.5	7.9	3.8	2.8	10.0	5.8	7.2





\*\*\*\*\*

HOURLY TIDAL OBSERVATIONS

\*\*\*\*\*

AREA : PICARRAS  
STATION : TIDE  
LATITUDE : 26 46 9 S  
LONGITUDE : 48 39 6 W  
DURATION : APR. 1-APR. 30, 1989  
UNIT : CENTIMETER.

HOUR	DAY																									H.W.	L.W.	H.W.	L.W.			
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	T	CM	T	CM			
1	66	71	62	41	16	-3	-8	8	20	32	46	66	36	25	4	-13	-23	-19	-5	16	44	66	67	69	0051	71	0544	-9	1054	66	1613	-23
2	69	66	55	31	11	-9	-17	-11	7	28	49	59	55	47	27	3	-17	-35	-42	-33	-12	14	40	60	1113	59	0604	-17	1230	54	1756	-42
3	67	71	64	47	31	15	-8	-29	-37	-25	2	29	53	53	46	23	-6	-36	-56	-70	-63	-39	-14	16	0052	71	0754	-37	1330	54	1910	-70
4	44	55	47	30	16	4	-10	-26	-37	-40	-24	12	44	66	63	43	22	-16	-38	-59	-69	-58	-33	-6	0105	55	0839	-41	1323	62	1959	-69
5	27	55	63	50	28	13	1	-7	-19	-29	-26	-3	34	73	89	70	40	3	-23	-43	-54	-62	-42	-10	0153	63	0916	-29	1357	89	2047	-63
6	26	52	53	36	14	-10	-17	-19	-19	-30	-28	-22	-4	24	64	93	69	35	-1	-26	-31	-27	-38	-30	0133	55	0921	-31	1503	93	2003	-31
7	-3	22	51	60	47	16	-7	-14	-3	-3	-9	-15	-16	14	48	77	90	67	28	-1	-16	-11	-9	-14	0255	60	0730	-15	0930	-2	1103	-9
8	-1	8	25	45	48	19	-7	-25	-35	-19	-10	-15	-16	-16	3	35	63	63	33	0	-23	-10	-12	12	0236	51	0753	-35	1009	-10	1330	-18
9	-12	-13	-9	0	15	10	-12	-42	-61	-57	-40	-26	-31	-32	-28	-12	17	40	30	1	-21	-22	-15	1	0415	16	0042	-13	1114	-25	0820	-62
10	3	-4	-11	-9	-2	17	3	-23	-60	-45	-51	-32	-13	-22	-21	-9	-7	24	27	22	7	-4	-3	16	0505	17	0217	-11	0913	-45	0813	-61
11	43	39	26	12	16	26	42	11	0	-16	-15	3	14	17	15	7	22	37	53	58	50	42	38	44	0022	45	0317	11	0550	43	0926	-18
12	64	72	67	48	32	27	40	36	29	8	-4	-6	8	15	10	6	-2	5	20	26	28	34	30	30	0107	72	0447	27	0616	41	1038	-7
13	40	48	50	40	22	10	10	13	22	12	0	-5	0	-5	-6	-9	-17	-16	-9	-4	3	17	21	15	0140	51	0530	9	0747	22	1100	-5
14	25	29	31	27	15	1	-3	0	9	21	14	5	6	5	-1	0	-12	-16	-11	-3	9	19	29	39	0150	31	0604	-3	0908	21	1124	4
15	44	46	42	33	19	9	-1	-2	11	24	33	22	25	15	8	-2	-13	-22	-23	-21	-14	-1	16	34	0050	46	0634	-3	0957	33	1117	21
16	44	43	34	20	7	-9	-19	-21	-10	8	22	34	26	16	6	-11	-26	-35	-35	-42	-36	-18	3	22	0025	45	0639	-22	1106	34	1902	-42
17	36	35	27	10	-12	-27	-40	-41	-30	-16	-1	18	31	24	3	-14	-34	-50	-59	-65	-65	-52	-30	-5	0028	37	0635	-42	1209	31	1930	-67
18	15	25	22	-1	-26	-49	-63	-57	-46	-31	-8	15	32	41	37	15	-1	-16	-27	-26	-20	-12	6	33	0116	25	0612	-63	1312	41	1825	-28
19	60	83	85	72	44	14	-6	-5	4	13	29	57	67	83	87	69	39	10	-9	-22	-25	-18	-13	8	0138	85	0627	-8	1341	88	1948	-25
20	28	50	63	54	28	-10	-40	-56	-49	-38	-20	0	23	41	58	50	27	1	-26	-39	-38	-25	-25	-7	0205	63	0712	-56	1411	53	1926	-40
21	16	36	50	57	40	8	-23	-44	-41	-35	-22	-7	13	34	51	64	48	19	-14	-36	-40	-35	-28	-15	0247	58	0723	-46	1457	64	1957	-40
22	-3	9	27	45	39	13	-21	-43	-59	-46	-34	-23	-1	20	43	63	60	39	9	-13	-22	-13	-4	4	0315	46	0803	-59	1522	65	2000	-22
23	10	17	27	47	53	35	12	-16	-39	-42	-30	-23	-5	12	33	53	66	52	27	-5	-23	-19	-7	2	0345	54	0842	-43	1559	66	2019	-24
24	1	0	5	13	26	22	9	-22	-47	-56	-53	-50	-42	-26	-7	15	33	38	17	-8	-29	-34	-24	-11	0416	27	0040	0	1642	39	0915	-56
25	-3	1	-5	-9	2	9	3	-14	-34	-47	-49	-46	-41	-35	-21	2	19	37	33	9	-10	-22	-18	-2	0054	1	0246	-9	0502	9	0954	-49
26	7	14	5	-9	-9	-3	1	-7	-24	-33	-37	-39	-37	-38	-32	-17	3	24	30	22	1	-8	-9	2	0056	14	0330	-10	0550	1	1100	-39
27	26	22	29	16	-1	0	5	14	7	-2	-8	-16	-16	-18	-16	-21	3	22	40	43	40	30	26	34	0051	29	0357	-5	0704	14	1300	-18
28	48	55	49	30	10	-2	11	23	27	14	15	22	8	1	-11	-17	-13	1	18	26	33	35	33	36	0102	55	0459	-2	0744	28	0926	13
29	45	54	56	33	13	-3	-5	8	21	30	32	32	21	15	5	-14	-17	-22	8	7	35	45	43	50	0135	58	0538	-6	1030	33	1639	-24
30	57	67	65	58	48	9	2	5	27	45	57	66	59	48	32	12	-9	-11	-12	8	16	40	50	55	0120	68	0612	2	1104	66	1733	-14

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*

( 30 DAYS )

SUM 282. 5713.  
MEAN 9.9 11.8 7.9

14 238. 9.9  
15 282. 11.8  
16 299. 11.8  
17 299. 11.8  
18 299. 11.8  
19 299. 11.8  
20 299. 11.8  
21 299. 11.8  
22 299. 11.8  
23 299. 11.8  
24 299. 11.8  
25 299. 11.8  
26 299. 11.8  
27 299. 11.8  
28 299. 11.8  
29 299. 11.8  
30 299. 11.8

12 257. 10.7  
13 257. 10.7  
14 257. 10.7  
15 257. 10.7  
16 257. 10.7  
17 257. 10.7  
18 257. 10.7  
19 257. 10.7  
20 257. 10.7  
21 257. 10.7  
22 257. 10.7  
23 257. 10.7  
24 257. 10.7  
25 257. 10.7  
26 257. 10.7  
27 257. 10.7  
28 257. 10.7  
29 257. 10.7  
30 257. 10.7

11 584. 24.3  
12 623. 26.0  
13 623. 26.0  
14 623. 26.0  
15 623. 26.0  
16 623. 26.0  
17 623. 26.0  
18 623. 26.0  
19 623. 26.0  
20 623. 26.0  
21 623. 26.0  
22 623. 26.0  
23 623. 26.0  
24 623. 26.0  
25 623. 26.0  
26 623. 26.0  
27 623. 26.0  
28 623. 26.0  
29 623. 26.0  
30 623. 26.0

10 584. 24.3  
11 584. 24.3  
12 584. 24.3  
13 584. 24.3  
14 584. 24.3  
15 584. 24.3  
16 584. 24.3  
17 584. 24.3  
18 584. 24.3  
19 584. 24.3  
20 584. 24.3  
21 584. 24.3  
22 584. 24.3  
23 584. 24.3  
24 584. 24.3  
25 584. 24.3  
26 584. 24.3  
27 584. 24.3  
28 584. 24.3  
29 584. 24.3  
30 584. 24.3

9 584. 24.3  
10 584. 24.3  
11 584. 24.3  
12 584. 24.3  
13 584. 24.3  
14 584. 24.3  
15 584. 24.3  
16 584. 24.3  
17 584. 24.3  
18 584. 24.3  
19 584. 24.3  
20 584. 24.3  
21 584. 24.3  
22 584. 24.3  
23 584. 24.3  
24 584. 24.3  
25 584. 24.3  
26 584. 24.3  
27 584. 24.3  
28 584. 24.3  
29 584. 24.3  
30 584. 24.3

8 584. 24.3  
9 584. 24.3  
10 584. 24.3  
11 584. 24.3  
12 584. 24.3  
13 584. 24.3  
14 584. 24.3  
15 584. 24.3  
16 584. 24.3  
17 584. 24.3  
18 584. 24.3  
19 584. 24.3  
20 584. 24.3  
21 584. 24.3  
22 584. 24.3  
23 584. 24.3  
24 584. 24.3  
25 584. 24.3  
26 584. 24.3  
27 584. 24.3  
28 584. 24.3  
29 584. 24.3  
30 584. 24.3

\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARRAS  
STATION : TIDE  
LATITUDE : 26 46 9 S  
LONGITUDE : 48 39 8 W  
DURATION : MAY 1 - MAY 31, 1989  
UNIT : CENTIMETER

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. T	H.W. T	L.W. T
SUN	44.4	47.0	19.6	44.5	101.8	745.	1018.	4	5	6	967.	7	8	9	10	11	12	15.	100.	12	13	14	15	14	15	253.	528.
MEAN	18.5	19.6	18.5	18.5	31.0	31.0	42.4	38.9	40.3	933.	38.9	967.	40.3	933.	38.9	40.3	933.	38.9	40.3	967.	40.3	933.	38.9	40.3	967.	40.3	933.
DATE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
SUN	-39.3	0.	106.	-215.	-25.	-161.	-123.	-242.	279.	756.	1005.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MEAN	-16.4	0.0	4.4	-9.0	-1.0	-6.7	-5.1	-10.1	11.6	31.5	41.9	22.1	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*

( 28 DAYS )  
SUM 5928.  
MEAN 8.8

15  
-253.  
-11.1  
-10.5  
-107.  
-4.5  
3.5  
4.0

14  
-267.  
-176.  
-7.3  
-103.  
-4.3  
84.  
3.5  
4.0

13  
-176.  
-7.3  
-103.  
-4.3  
84.  
3.5  
4.0

12  
100.  
4.2  
530.  
22.1  
1006.  
41.9  
22.1  
22.1

11  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

10  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

9  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

8  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

7  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

6  
15.  
0.6  
756.  
31.5  
11.6  
31.5  
11.6  
11.6

\*\*\*\*\*

## HOURLY TIDAL OBSERVATIONS

\*\*\*\*\*

AREA : PICARRAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39 6 W

DURATION : JUN. 1.-JUN. 30, 1989

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. CM	H.W. T	L.W. CM		
1	21	17	10	3	-6	-23	-34	-35	-21	8	38	53	61	52	35	14	6	-8	-16	-21	-16	-1	20	36	1153	61	0634	-36	2348	
2	32	18	7	-8	-14	-22	-35	-30	-22	-22	8	33	63	56	45	27	8	-8	-19	-22	-29	-25	-14	10	5	0019	33	0713	-35	1219
3	39	32	9	-6	-21	-29	-37	-48	-43	-19	6	46	55	60	48	23	3	0	4	-9	-15	-8	5	0	0104	53	0811	-48	1348	
4	26	53	32	10	-15	-30	-22	-28	-27	-37	-11	26	56	79	67	54	32	16	24	22	18	17	28	0147	69	0509	-30	0604		
5	44	61	68	50	19	-4	-13	-14	-10	-16	-18	-8	9	40	71	82	70	55	34	27	32	32	32	0147	69	0642	-14	0754		
6	36	51	63	62	38	16	-3	-13	-1	-6	-15	-8	3	27	57	73	82	64	42	21	21	30	38	43	0226	64	0657	-13	0812	
7	40	39	49	64	53	29	4	-7	-14	-9	-5	-6	1	11	34	60	79	77	57	38	23	28	46	54	0305	64	0035	38	1018	
8	55	47	46	55	62	54	32	9	-3	-1	-4	-3	-4	-3	16	35	55	65	52	36	14	5	19	33	0358	62	0136	45	0854	
9	43	47	39	33	41	41	40	18	3	-7	-8	-8	-8	-9	13	10	22	38	46	44	33	17	5	17	0050	47	0256	33	0430	
10	28	42	36	31	28	34	42	46	33	16	14	12	14	12	11	20	29	46	60	65	65	57	43	40	0112	42	0350	28	0644	
11	41	51	52	51	49	48	55	64	58	51	33	20	22	23	21	29	26	30	43	46	56	55	49	42	0200	52	0438	47	0706	
12	33	30	33	30	32	30	33	46	56	46	31	20	10	10	11	6	7	4	6	7	24	35	32	26	0300	33	0100	30	0400	
13	13	5	3	-10	-8	-7	-2	9	17	29	21	13	5	-12	-17	-14	-18	-21	-14	-12	12	12	18	24	0306	29	0322	-11	1455	
14	15	2	-11	-18	-19	-25	-22	-9	5	17	27	23	20	5	-4	-10	-17	-15	-16	-16	-5	4	17	29	1013	27	0510	-25	1710	
15	26	17	2	-21	-23	-36	-37	-27	-12	7	24	28	28	13	-4	-15	-25	-28	-27	-30	-26	-17	-7	10	1130	30	0535	-38	1745	
16	18	9	-10	-28	-45	-59	-65	-64	-49	-29	-11	-7	21	12	3	-13	-22	-27	-28	-39	-43	-37	-22	-6	0622	-65	1215	-22	1954	
17	10	16	-2	-21	-41	-62	-70	-70	-61	-41	-19	3	21	24	13	3	-11	-22	-28	-34	-33	-21	2	0045	17	0630	-71	1243		
18	20	39	32	8	-7	-31	-49	-56	-50	-34	-13	17	41	49	58	48	32	14	3	-2	-2	-9	-10	8	0114	40	0702	-56	1358	
19	19	41	48	32	7	-22	-42	-59	-59	-60	-38	-14	15	32	48	44	29	13	-10	-15	-15	-12	-23	-18	0148	48	0833	-62	1413	
20	-7	12	36	33	15	-13	-37	-53	-63	-61	-54	-34	-7	19	46	53	43	27	6	-11	-4	-7	-6	-4	0223	38	0820	-54	1505	
21	-5	11	28	41	36	15	-10	-25	-40	-44	-51	-43	-15	9	37	65	67	54	35	16	6	7	14	13	0313	41	0958	-51	1538	
22	13	15	25	41	48	29	11	-7	-26	-36	-44	-52	-42	-30	2	30	47	44	24	4	-22	-18	-9	-6	0346	49	1057	-52	1621	
23	-3	-9	-14	-9	9	13	3	-11	-30	-43	-52	-63	-61	-52	-33	-4	29	42	34	15	1	-10	-3	15	0446	13	0200	-14	1707	
24	20	17	13	10	23	39	38	27	15	-3	-10	-15	-24	-31	-24	-1	24	49	52	37	24	8	5	13	0007	20	0241	9	0527	
25	26	27	23	7	9	19	34	42	31	16	3	-4	-11	-23	-26	-19	3	33	44	43	34	17	10	17	0042	27	0323	6	0655	
26	30	45	40	25	11	14	36	46	46	44	28	19	13	-1	-10	-12	-8	12	24	35	35	21	12	7	0115	46	0419	10	0730	
27	16	29	31	20	3	-12	1	23	38	36	31	20	12	3	-8	-12	-21	-14	-8	7	13	9	6	-4	0139	32	0502	-12	0823	
28	-5	8	12	7	-9	-28	-27	-14	13	25	27	21	16	0	-2	-8	-19	-17	-20	-10	-19	-5	3	5	0157	12	0527	-30	0945	
29	8	11	7	16	8	-10	-23	-23	-5	12	45	47	43	45	43	33	25	17	8	7	5	18	26	31	0056	11	0148	7	0302	
30	27	24	20	16	10	0	-21	-36	-43	-27	-7	13	30	38	38	30	17	3	-2	-14	-25	-30	-33	-28	0148	-43	1330	39	2153	

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	SUM	MEAN
SUN	193.	97.	54.	353.	671.	721.	745.	672.	494.	824.	1015.	599.	46.	-23.	-185.	7009.	9.7
MEAN	8.0	4.0	2.3	14.7	28.0	30.0	31.0	28.0	20.6	34.3	42.3	25.0	1.9	-1.0	-7.7		
DATE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
SUN	-541.	-472.	106.	-59.	-66.	221.	41.	-237.	306.	355.	512.	219.	-46.	394.	0.		
MEAN	-22.5	-19.7	4.4	-2.5	-2.8	9.2	1.7	-9.9	12.8	14.8	21.3	9.1	-1.9	16.4	0.0		

\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARRAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39 6 W

DURATION : JUL. 1.-JUL. 31. 1989

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. CM	H.W. T	L.W. CM	
1	-19	-4	-1	-7	-15	-24	-44	-51	-57	-62	-64	-44	-17	20	38	41	38	28	21	12	-6	-15	-12	-19	0150	-1	0935	-66	1453
2	-6	19	40	39	11	6	-18	-31	-36	-37	-47	-40	-9	17	40	59	71	60	42	22	18	21	18	17	0227	42	1005	-47	1601
3	25	42	66	79	71	45	26	11	0	-2	-9	6	13	36	64	92	100	87	70	51	34	34	31	26	0307	79	0949	-9	1553
4	29	39	49	71	70	48	20	-3	-23	-27	-24	-32	-34	3	33	50	73	67	51	27	7	10	9	6	0327	73	0904	-27	0946
5	8	8	20	44	55	31	7	-10	-27	-24	-29	-35	-24	-16	14	51	80	87	70	50	28	26	27	38	0349	56	0821	-28	0853
6	48	56	66	81	95	85	65	43	29	21	21	19	29	41	68	92	94	83	100	83	58	44	49	63	0405	95	1040	18	1539
7	71	76	81	89	94	90	71	42	24	12	6	6	8	13	30	48	69	81	78	58	28	8	5	14	0403	94	1030	6	1718
8	26	41	43	41	54	56	47	24	3	-17	-26	-23	-16	-17	-10	3	17	36	45	36	14	-9	-23	-21	0200	43	0238	40	0441
9	-8	7	15	14	17	24	30	21	-1	-16	-31	-36	-29	-24	-21	-15	-5	11	19	19	10	-7	-27	-29	0223	16	0245	14	0554
10	-24	-12	-7	-4	-6	4	12	13	3	-20	-39	-41	-31	-26	-26	-20	-17	-8	-1	7	6	-6	-21	-26	0306	-4	0340	-7	0635
11	-21	-15	-14	-10	-9	-4	5	9	11	-5	-22	-26	-24	-20	-17	-22	-20	-14	-11	-2	9	0	-10	-16	0737	12	1110	-26	1353
12	-20	-16	-19	-15	-20	-23	-13	-1	9	8	0	-13	-15	-16	-5	-11	-13	-10	-15	-11	-5	0	-1	-2	0104	-16	0000	-20	0257
13	-9	-15	-22	-30	-39	-41	-33	-22	-6																				
14																													
15																													
16																													
17																													
18																													
19																													
20																													
21																													
22																													
23																													
24																													
25																													
26																													
27																													
28																													
29																													
30																													
31																													

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*  
( 12 DAYS )  
SUM 4039.  
MEAN 14.0

\*\*\*\*\* DAILY MEAN \*\*\*\*\*  
8  
7  
6  
5  
4  
3  
2  
1

DATE 1 2 3 4 5 6 7 8  
SUM -265. 275. 938. 519. 479. 1433. 1102. 324.  
MEAN -11.0 11.5 41.6 21.6 20.0 59.7 45.9 13.5

并井井井井

## HOURLY TIDAL OBSERVATIONS

外并并并并

AREA : PICARRAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39

EXPIRATION DATE : AUG. 1. -AUG. 31. 1989

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. CM	H.W. T	L.W. CM	H.W. T	L.W. CM
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														
17																														
18																														
19																														
20																														
21																														
22																														
23																														
24																														
25																														
26																														
27																														
28																														
29																														
30																														

***** DAILY MEAN *****		***** MONTHLY MEAN *****	
DATE	1	2	3
SUN	4	5	6
MEAN	7	8	9
	10	11	12
	13	14	15
	( 14 DAYS )		
	SUN 567.		
	MEAN 1.7		

\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARAS

STATION : TIDE

LATITUDE : 26 46 9 S

LONGITUDE : 48 39 6 W

DURATION : SEP. 1.-SEP. 30. 1989

UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. CM	H.W. T	L.W. CM	
1	30	45	67	72	48	8	-21	-39	-42	-28	-14	-3	16	50	76	91	89	63	28	1	-5	1	13	37	0240	74	0741	-43	1523
2	59	76	95	101	88	56	21	-5	-13	-7	4	10	22	42	66	84	88	70	43	8	-14	-24	-3	16	0249	101	0804	-13	1541
3	34	50	63	73	72	46	10	-24	-44	-42	-24	-22	-19	-6	7	22	38	31	3	-32	-57	-67	-55	-37	0325	74	0825	-46	1612
4	-15	5	13	24	32	25	-3	-36	-61	-62	-49	-37	-30	-19	-15	-1	15	21	3	-27	-51	-67	-64	-48	0402	32	0834	-63	1645
5	-33	-15	-4	7	13	13	-4	-31	-50	-61	-57	-43	-27	-23	-18	-9	1	9	7	-15	-34	-48	-52	-43	0430	15	0914	-61	1718
6	-27	-12	-2	9	17	27	26	3	-11	-20	-23	-15	11	10	-10	-11	13	25	31	36	22	-11	-7	-1	0525	28	0946	-23	1228
7	7	18	23	26	34	46	56	41	29	22	17	24	28	39	42	35	31	30	29	27	20	9	1	1	0554	56	0955	17	1348
8	-1	0	-2	0	3	15	22	23	20	13	11	14	15	20	27	14	8	7	7	9	10	9	10	10	0050	0	0010	-1	0645
9	8	5	-8	-14	-13	-9	-4	11	18	18	16	19	21	29	40	38	26	7	-7	-6	1	8	14	20	0830	18	0321	-14	1421
10	16	16	16	8	-9	-33	-22	-7	13	20	28	46	45	44	51	50	42	27	10	-1	1	11	19	24	1127	48	0511	-34	1423
11	34	43	41	16	-6	-26	-33	-31	-17	-2	24	37	43	47	46	36	28	21	7	-15	-28	-26	-10	10	0119	44	0617	-33	1317
12	32	34	34	29	-11	-43	-60	-65	-56	-26	-3	16	34	47	62	39	19	8	-5	-21	-37	-25	-2	26	0120	68	0756	-78	1328
13	57	67	65	41	-1	-34	-58	-62	-78	-57	-17	11	34	62	61	45	23	2	-14	-16	-26	-35	-26	-2	0153	79	0835	-68	1409
14	36	67	79	59	26	-14	-41	-51	-62	-64	-41	-8	24	64	81	72	52	21	5	6	6	4	8	13	0153	79	0835	-68	1409
15	48	79	106	107	83	50	9	-6	-13	-17	-9	13	45	76	108	112	100	71	45	35	41	47	37	39	0232	110	0850	-17	1445
16	56	80	111	129	108	78	42	12	0	-9	-16	-14	23	24	50	69	60	26	-1	-24	-21	-10	-2	-7	0258	129	1017	-16	1511
17	-6	9	35	64	70	50	13	-16	-31	-24	-18	-27	-26	-13	3	22	39	18	-13	-39	-44	-32	-17	-9	0344	71	0811	-31	0954
18	-11	-9	-3	18	42	47	16	-6	-25	-26	-13	-9	-15	-17	-16	3	16	15	-7	-32	-51	-56	-32	-14	0438	49	0010	-11	1054
19	-14	-17	-19	-15	2	20	15	-3	-15	-22	-12	1	6	5	13	16	5	8	4	-17	-37	-46	-35	-18	0517	21	0150	-19	1220
20	-5	5	14	23	19	7	15	10	13	6	6	12	25	29	20	9	5	7	11	7	-9	-25	-33	-23	0312	23	0506	7	0607
21	-6	4	11	21	32	28	15	5	7	5	5	8	13	24	24	9	8	17	12	-8	-9	-10	-36	-26	0414	32	0720	4	0800
22	-10	-10	-10	-26	-44	-47	-37	-14	-14	10	5	10	9	14	17	12	-10	-24	-32	-20	-16	-11	-19	-13	0130	-8	0444	-47	0920
23	-15	-27	-7	-21	-38	-52	-45	-39	-16	7	26	35	35	45	47	43	38	28	20	21	33	53	57	60	0205	-7	0053	-27	1350
24	50	54	43	34	23	9	5	12	27	43	66	80	84	85	78	68	60	50	42	40	46	59	75	85	1238	86	0352	5	2305
25	78	70	58	42	23	8	7	5	8	25	51	67	77	75	64	46	28	14	7	4	9	23	39	55	1220	78	0654	5	2357
26	60	54	27	7	-13	-30	-40	-43	-34	-17	3	27	46	56	53	31	6	-15	-23	-19	-9	3	28	45	0051	66	0645	-43	1316
27	61	66	57	26	-1	-19	-27	-28	-25	-13	3	24	48	70	73	56	24	-6	-28	-23	-15	0	18	35	0051	66	0645	-28	1339
28	58	76	75	48	12	-16	-38	-39	-32	-29	-14	3	30	50	64	55	29	-10	-39	-46	-39	-20	-3	15	0127	78	0838	-40	1406
29	48	64	51	16	-18	-49	-58	-51	-45	-32	-14	-1	-1	25	44	48	24	-7	-48	-67	-54	-43	-27	-7	0203	64	0704	-58	1439
30	29	48	64	51	16	-18	-49	-58	-51	-45	-32	-14	-1	25	44	48	24	-7	-48	-67	-54	-43	-27	-7	0203	64	0704	-58	1439

\*\*\*\*\* MONTHLY MEAN \*\*\*\*\*  
( 28 DAYS )  
SUM 7382.  
MEAN 11.0

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SUM	583.	883.	20.	-447.	-517.	80.	635.	264.	238.	415.	239.	11	13	14	15
MEAN	24.3	36.8	0.8	-18.6	-21.5	3.3	26.5	11.0	9.9	17.3	10.0	27	28	29	30
DATE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
SUM	1206.	742.	10.	-185.	-175.	148.	-296.	-288.	1234.	883.	203.	376.	190.	190.	190.
MEAN	50.3	30.9	0.4	-7.7	-7.3	6.2	-12.3	-12.0	51.4	36.8	8.5	15.7	7.9	7.9	7.9

\*\*\*\*\* HOURLY TIDAL OBSERVATIONS \*\*\*\*\*

AREA : PICARRAS  
STATION : TIDE  
LATITUDE : 26 46 9 S  
LONGITUDE : 48 39 6 W  
DURATION : OCT. 1.-OCT. 31, 1989  
UNIT : CENTIMETER

DAY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	H.W. T	L.W. T	CM	H.W. T	CM	L.W. T	CM	H.W. T	CM	L.W. T	CM
1	12	29	48	49	24	-8	-46	-64	-61	-48	-38	-28	-13	3	16	35	28	0	-34	-65	-73	-63	-45	-26	0322	52	0722	-65	1514	36	1957	-73			
2	-2	14	34	44	31	-5	-42	-60	-59	-49	-37	-26	-24	-12	-1	17	23	10	-23	-57	-77	-70	-53	-40	0356	44	0727	-62	1549	23	2014	-78			
3	-19	-2	17	31	29	3	-19	-46	-63	-35	-38	-31	-9	-21	-6	10	14	8	-9	-26	-52	-60	-39	-24	0323	32	0753	-63	0924	-32	0948	-38			
4	-11	10	21	45	50	33	25	-4	-2	-11	-12	8	19	19	29	31	39	38	17	3	-15	-28	-30	-26	0344	51	0726	-7	0741	-1	0933	-14			
5	-14	4	13	19	21	26	22	0	-20																										

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	***** MONTHLY MEAN ***** ( 4 DAYS )
SUM	-368.	-464.	-387.	248.												
MEAN	-15.3	-19.3	-16.1	10.3												SUM MEAN

DATE	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SUM																
MEAN																





## ***C.2 Tidal Current at Piçarras Coast***



\*\*\*\*\* THE DATA OF TIDAL STREAM FOR EVERY HOUR \*\*\*\*\*

AREA  
STATION A  
LONGITUDE 48 39 18W  
LATITUDE 26 45 50S  
LAYER B+1.5  
EPOCH 1988 12 7 11  
TIME ZONE 3.00  
UNIT CM/SEC.  
DIRECTION TRUE(-15.0)

N-COMP.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
D 7	1	7	4	3	1	0	2	1	1	0	0	2	1	1	0	-2	-1	0	0	0	1	1	1	0	14	1
8	1	0	-1	-1	-1	-1	1	1	-3	0	1	0	0	0	1	-2	-1	-1	-1	0	-4	-5	0	-1	-9	0
9	1	-2	-1	-2	-2	0	-2	-2	-2	0	-5	-2	2	2	2	0	0	2	0	-2	0	-1	-2	-1	-9	0
10	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	-1	0	0	-2	0	-1	-1	0	-9	0
11	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
12	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
13	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
14	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
15	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
16	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
17	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
18	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
19	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
20	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
21	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
22	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
23	1	-2	-1	-2	-2	0	0	0	-2	0	0	-2	-1	1	2	0	0	1	0	-2	0	-1	-1	0	-9	0
SUM	24	12	18	-13	59	4	24	12	18	-13	59	4	24	12	18	-13	59	4	24	12	18	-13	59	4	24	12
MEAN	1	0	0	-1	2	0	1	0	0	-1	2	0	1	0	0	-1	2	0	1	0	0	-1	2	0	1	0

E-COMP.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
D 7	2	10	6	3	4	1	1	0	-2	-1	-1	-3	-1	0	1	2	3	4	5	6	7	8	9	10	88	4
8	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	15	1
9	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-13	-1
10	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	30	1
11	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	125	5
12	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	47	2
13	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	11	0
14	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-11	0
15	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	122	5
16	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	60	2
17	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	10	2
18	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-25	-1
19	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-1	-1
20	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-25	-1
21	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-25	-1
22	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-25	-1
23	2	0	1	3	2	-1	0	-1	-1	-1	0	-1	0	0	1	2	3	4	5	6	7	8	9	10	-25	-1
SUM	88	4	15	-13	30	125	47	88	4	15	-13	30	125	47	88	4	15	-13	30	125	47	88	4	15	-13	30
MEAN	4	1	-1	1	5	2	4	1	-1	1	-1	5	2	4	1	-1	1	-1	5	2	4	1	-1	5	2	4

\*\*\*\*\* THE CALIBRATION TABLE \*\*\*\*\*  
ALL TERM USED NO. A= 0.257 B= 0.001 D= 0. TYPE OC COMB 1/100

\*\*\*\*\* THE DATA OF TIDAL STREAM FOR EVERY HOUR \*\*\*\*\*

AREA  
STATION  
LONGITUDE  
LATITUDE  
LAYER  
EPOCH  
TIME ZONE  
UNIT  
DIRECTION

PICARRAS  
B  
48 38 47W  
26 44 55S  
B+1.5  
1989 2 6 11  
3.00  
CM/SEC.  
TRUE(-15.0)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
D 6	-4	-7	-22	-15	-12	-11	-10	-10	-1	-1	-8	-8	-5	-4	-1	2	2	-1	-1	3	3	7	1	23	-79	-3
7	0	-4	-5	-4	-11	-12	-5	-1	-1	0	-2	-2	-2	-1	0	0	-1	-2	-3	5	2	6	6	6	-98	-4
8	-17	-9	-10	-7	-17	-5	-4	-4	-4	-6	-5	-6	-11	-9	-2	-4	-1	-3	-8	-5	-2	-3	-7	-12	-138	-6
9	-13	-1	-2	-3	-2	-2	-4	-5	-7	-8	-11	-11	-11	-9	-4	-1	-5	-5	-2	-2	-1	-1	-1	-3	-48	-3
10	-2	0	-1	0	-1	-4	-9	-11	-12	-13	-11	-11	-11	-4	-5	-2	-9	0	-2	-1	-3	-5	-9	-7	-146	-6
11	-10	-6	-9	-6	-6	-5	-7	-6	-8	-10	-12	-12	-12	-4	-8	-12	-5	-4	0	-4	-2	-4	-10	-10	-143	-6
12	-8	-3	-9	-3	-1	-1	-6	-13	-5	-3	-15	-15	-13	-2	-6	-6	-3	0	0	-3	-2	-4	0	0	-56	-2
13	-2	-3	-3	-3	-1	-1	-15	-13	-8	-1	-4	-4	-3	-1	3	-1	0	1	2	-4	-4	1	0	1	-54	-2
14	0	-11	-6	-1	0	0	-5	-10	-5	-6	-4	-4	-3	2	5	0	-1	-3	-2	-4	-4	-4	-3	-6	-89	-4
15	-13	-4	-3	-1	-4	-9	-9	-9	-3	-3	-1	-1	-1	-3	0	-3	-4	-5	-5	-1	-1	-1	-1	-2	-82	-3
16	-1	-5	-13	-6	-11	-7	-1	-2	-1	-1	0	0	0	0	-3	-8	-4	-1	-1	-1	-3	-3	-2	-2	-87	-4

N-COMP.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
D 6	-8	-9	-4	9	8	5	0	-2	0	-1	-2	-3	-1	-1	-4	-2	-6	8	8	10	2	2	0	23	-15	-1
7	-13	-19	-11	1	9	6	-1	0	-1	-1	-2	-3	-3	-3	-6	-5	-1	0	16	2	1	1	-4	-12	13	17
8	-11	-1	-4	19	21	17	-3	-8	-3	-6	-9	-4	-7	-5	-12	-10	-6	14	7	2	0	0	-10	-8	160	-20
9	-10	-1	-4	15	13	12	-4	-4	-3	-1	-3	-6	-4	-3	-1	-1	-1	2	0	0	0	0	-2	-1	-36	-1
10	-1	-1	-1	0	0	0	-3	-4	-4	-4	-2	-1	-1	-1	-2	-4	0	0	-1	0	0	0	0	10	-23	0
11	-2	0	1	2	2	2	1	1	2	2	1	0	0	0	0	2	0	0	0	1	2	0	-3	-20	9	10
12	-3	1	1	3	3	3	0	0	1	0	0	2	0	0	1	2	0	1	0	3	2	0	0	0	32	1
13	-4	0	1	4	4	4	-1	-3	-5	0	1	2	0	0	1	3	0	1	1	0	1	0	0	1	83	3
14	-5	1	1	5	5	5	-2	-4	-6	4	1	3	0	0	2	0	7	3	2	-1	0	0	0	0	155	1
15	-6	2	2	6	6	6	-3	-5	-7	5	2	4	1	1	3	1	1	4	1	-1	0	2	-1	0	25	2
16	-7	3	3	7	7	7	-4	-6	-8	6	3	5	2	2	4	2	1	2	2	-2	1	1	0	0	35	1
17	-8	4	4	8	8	8	-5	-7	-9	7	4	6	3	3	5	3	1	4	1	-3	2	1	0	0	59	1
18	-9	5	5	9	9	9	-6	-8	-10	8	5	7	4	4	6	4	2	2	-4	-1	3	2	-1	0	25	2
19	-10	6	6	10	10	10	-7	-9	-11	9	6	8	5	5	7	5	3	3	-5	-2	4	3	-1	0	35	1
20	-11	7	7	11	11	11	-8	-10	-12	10	7	9	6	6	8	6	4	4	-6	-3	5	4	-1	0	35	1

E-COMP.

\*\*\*\*\* THE DATA OF TIDAL STREAM FOR EVERY HOUR \*\*\*\*\*

AREA  
STATION  
LONGITUDE  
LATITUDE  
LAYER  
EPOCH  
TIME ZONE  
UNIT  
DIRECTION

PICARRAS  
C  
48 37 52W  
26 45 45S  
B+1.5  
1989 6 24 11  
3.00  
CM/SEC.  
TRUE(-15.0)

	D	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
24	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1
25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-44	-2
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-29	-1
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-23	-1
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-8	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-65	-3
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-128	-5
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-19	-1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	1
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-71	-3

N-COMP.

	D	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUM	MEAN
24	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1
25	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0
26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	1
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-32	-1
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-14	-1
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	2
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-13	-1
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1

E-COMP.

