社会開発調査部報告書

No. 52

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)

MINISTRY OF SUSTAINABLE DEVELOPMENT AND PLANNING
DEPARTMENT OF SANTA CRUZ
REPUBLIC OF BOLIVIA

THE FEASIBILITY STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

FINAL REPORT

DATA BOOK

JUNE 1999

PACIFIC CONSULTANTS INTERNATIONAL,TOKYO

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DATA BOOK A

SOIL INVESTIGATION

PACIFIC INTERNATIONAL CONSULTANTS

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I. INTRODUCTION ANTECEDENTS AND OBJECTIVES.-

The Consultant Company "SERVICIOS INGENIERIA DESARROLLO" - SID INGENIEROS SRL, carried out the present geotechnical study, in the vicinities of Jochi river, Antofagasta canton Ichilo Province in Santa Cruz Department, according to contractual terms, established to the effect with the firm **PACIFIC INTERNATIONAL CONSULTANTS.**

This study, guided to verify the geotechnical conditions of the land, will allow the construction of a system of channels and dams, and it has as fundamental objective to determine the rational use of the land, like foundation soil, therefore not only it is also limited to the description of the materials that will constitute the foundations support to be projected, but to determine the degree of security of the structure to be built.

II. LOCATION AND EXTENSION.-

The land subject of the present study, is located in the vicinities of the Jochi river, Antofagasta canton, Ichilo province in Santa Cruz Department, as can be observed in the enclosed Plane of Location **(Annex 1)**

The study area embraces an extension of approximately 9.00 km.

III. USED METHODOLOGY.-

The methodology adopted in this study and that it culminates with the elaboration of the present final memory, was conventionally executed in the following two (2) stages:

1) Geotechnical investigation, which is subdivided in turn in three phases:

- Field phase
- Laboratory phase
- Cabinet phase

These three phases will be developed in the chapter corresponding to soil mechanics.

2) The obtained results which are presented in this Final Report, are summarized in a third stage, denominated cabinet stage, where all previously obtained information is evaluated.

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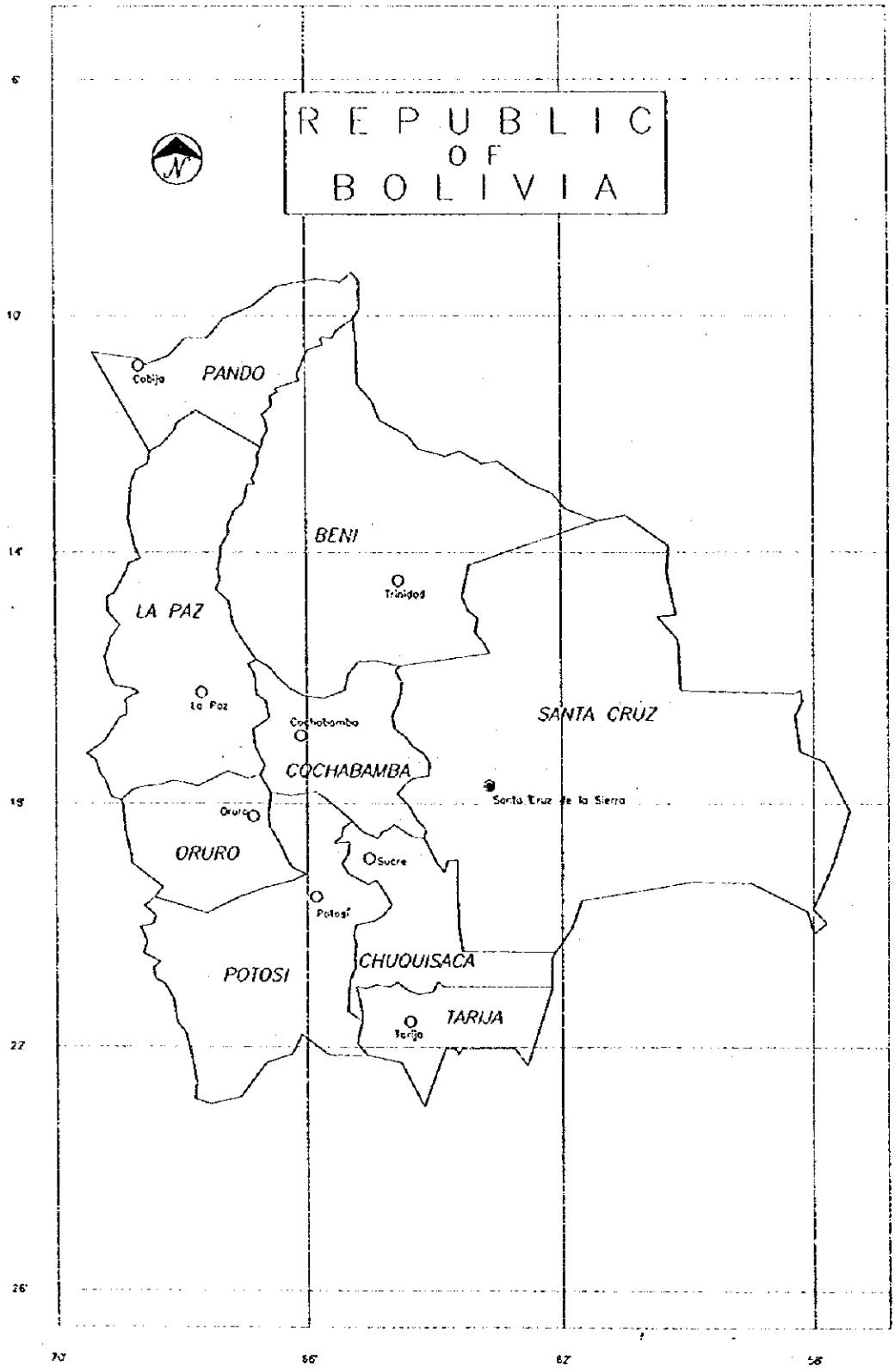

PACIFIC CONSULTANTS INTERNATIONAL (TOKYO) (J I C A)	S I D INGENIEROS SRL SOILS STUDY SANTA CRUZ REPUBLIC OF BOLIVIA	SCALE 1:10000000	SAN JUAN – ANTOFAGASTA ROAD – CUM – EMBANKMENT	SCHEMATIC DRILLINGS LOCATION	SHEET 1

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IV. TOPOGRAPHY.-

The studied land obeys a rectilinear trace, with some curves in its development, it adopts a flat relief that is adjusted to the natural topography, currently modified by earth movements, as consequence of previous road works.

The current study, given its own characteristics and the local conditions, suffers of lack of elevations at well mouth, the same ones that are of responsibility of the Contracting party.

For the correct definition of the foundation elevations, they will take into account the elevations of each well mouth, since otherwise it would not be fulfilling the recommendations formulated in the current study.

The location of the exploratory wells is consigned in the **Annex 2**.

V. GEOTECHNICS. -

The geotechnical investigation programming to determine the occurrence of the different materials that they constitute the studied land soils, was carried out in such way that the minimum information requirements can be obtained.

For this obligation, special attention was paid to the distribution of soils, not only in surface, but also in depth.

V.1. Soil mechanics.-

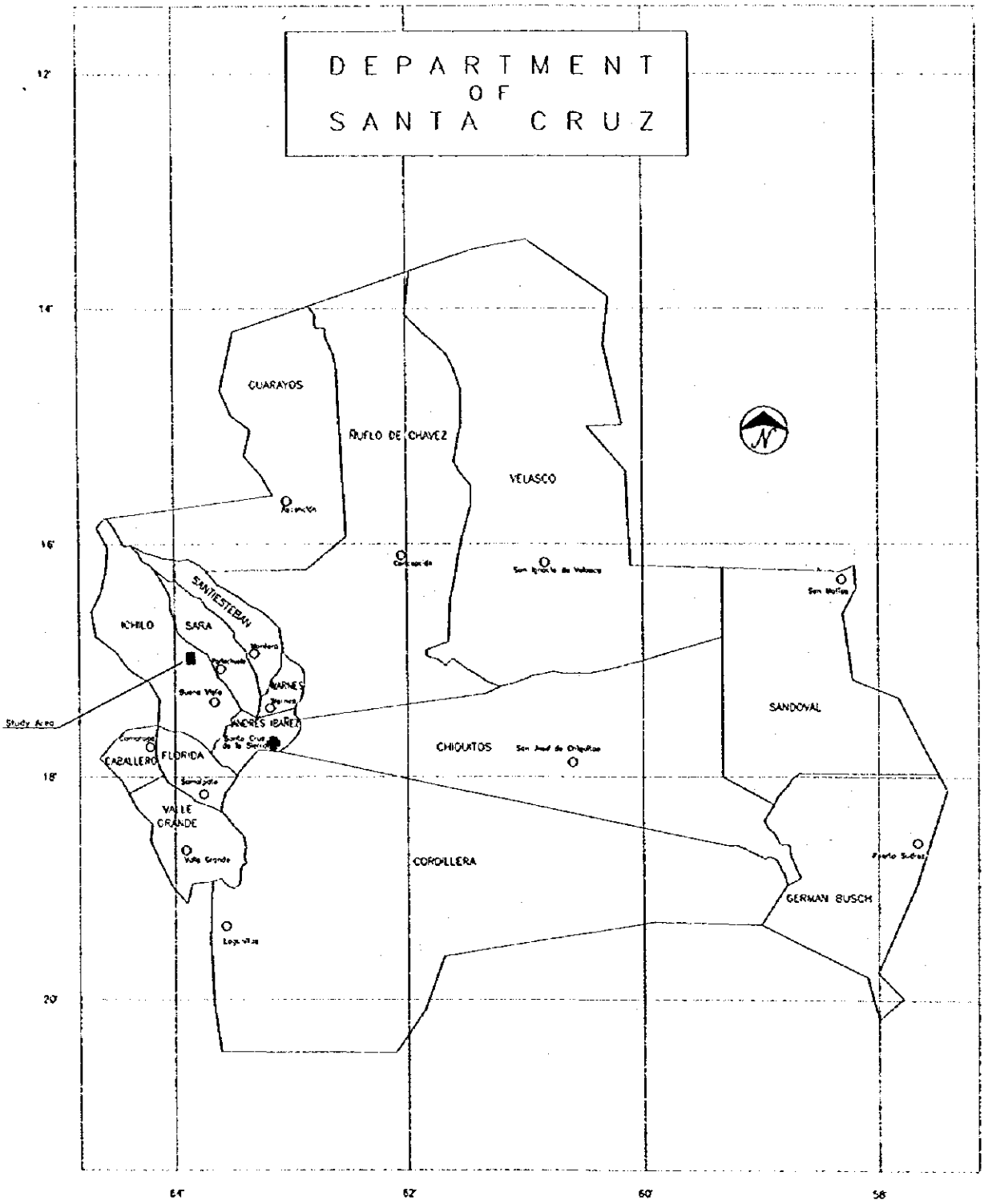
The corresponding work to this specialty in a conventional way, and following the adopted methodology is divided in three phases:

* Field work
* Laboratory work
* Cabinet work

V.1.1. Field work.-

This phase comprised not only the subsoil recognition, but the distribution in surface of the different litologic materials that will constitute the structure foundation soil, and other works projected according the engineering design requirements.

The subsoil investigation, based on the geotechnical exploration by means of the mechanical excavation of 3 polls or wells of geotechnic exploration of 10 m. each one (see annexes) had as objective, not only to know the distribution of the different materials, determined in each poll point, but also to establish moisture and structural conditions of foundation subsoil.



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PACIFIC CONSULTANTS INTERNATIONAL (TOKYO) (P I C A)	S·D INGENIEROS SRL SOILS STUDY SANTA CRUZ REPUBLIC OF BOLIVIA	SCALE 1:5000000	SAN JUAN - ANTOFAGASTA ROAD - CUM - EMBANKMENT	SCHEMATIC DRILLINGS LOCATION	SHEET 2

On the other hand, those wells allowed the determination of the different geotechnical parameters, which were calculated starting from the penetration resistance index N, obtained by means of the dynamic penetration tests, whose results allowed to determine the acceptable support capacity of the soils.

The taking of altered samples was carried out together with the dynamic penetration tests, establishing ten systematic sampling levels, for each exploratory well, information that, added to the surface observations, allow to obtain a real diagnosis of the structural and geotechnical conditions of the studied land.

The tests of dynamic penetration were carried out adopting the SPT method, which basically uses a penetration cone, which is hit by means of a 6.35 kg. weight hammer, with a 75 cm. free fall.

Characteristics, depths and location of the three geotechnical exploration wells, are indicated in corresponding annexes.

V.1.2. Laboratory Work.-

The obtained samples were tested in the specialized laboratory of soils mechanics, with the purpose of knowing the granulometric distribution of solid particles that constitute the investigated materials, furnishing a reference level that jointly with the other laboratory works, will allow to establish the geotechnic parameters.

For the execution of field tests as well as laboratory tests, when not existing in our country Norms that serve as reference for this type of works, American Norms AASHTO were used, which are suitable to our medium.

The relationship of laboratory tests, is the following:

* Natural Moisture (ω %)
* Granulometric distribution of the constituent soil materials, by sift.
* Determination of Atterberg Consistency Limits:
  - Liquid Limit (LL)
  - Plastic Limit (LP)
  - Plasticity Index (IP)
* Soils classification, adopting AASHTO System and Soils Unified Classification System (SUCS).

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V.1.3. Cabinet Work.-

Cabinet work, consisted fundamentally on calculation of the different geotechnical parameters, established on the previous work stages.

The parameters of foundation soils, can be used for the structural calculation of the project during the final design and implementation of respective security structures according to recommendations given in this work.

Parallelly to this geotechnical parameters determination, was carried out the description of the different materials that they constitute the soils and its litologic correlation by means of the profiles that are illustrated in **Annex 3.**

V.1.3.a. Soils classification.-

The identified soils during the geotechnical exploration are summarized in three groups that present proportional variable combinations, allowing in turn to distinguish smaller sub groups which are described as follows:

Sands

SM	Oozy sand
SM – SW	Well gradated oozy sand
SP	Poorly gradated sand
SW	Well gradated sand

Slimes

ML	Inorganic slimes.
ML - CL	Loamy slimes.

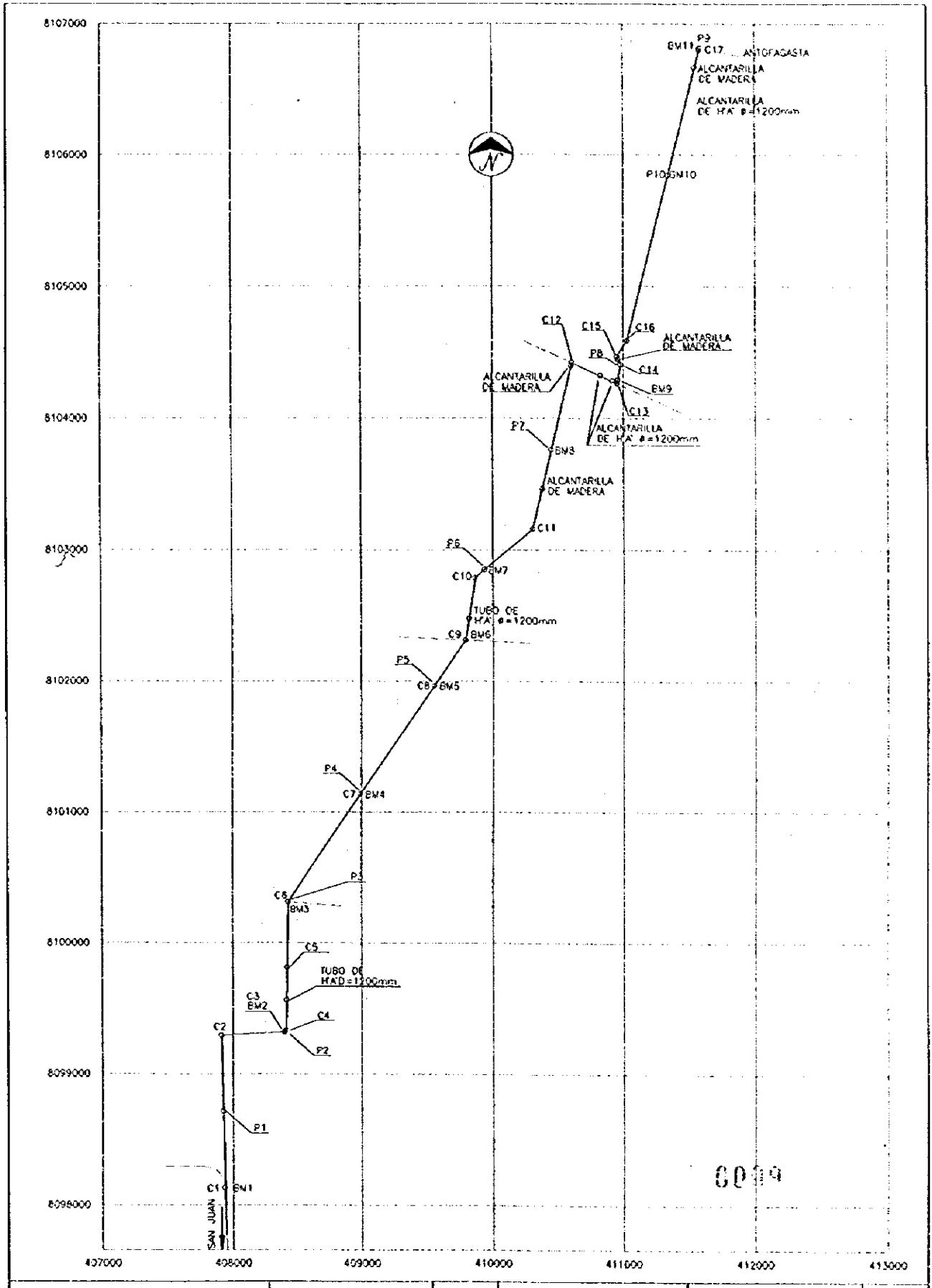
Clays

CL	Inorganic clay of low plasticity.

Oozy sands (SM).-

These granular soils constitute the most common materials and they were detected in all the exploratory wells. They are constituted by mixtures of sand and slime in very variable proportions. The gradation of these soils varies from good to poor.

Considering the nature of sands, it can be affirmed that the influence of slime particles on the behavior in the system Effort - Deformation will be of importance, especially if these materials end up being saturated by some external cause (rains, wrong handling of waters) or for not being protected by an appropriate drainage system.



PACIFIC CONSULTANTS INTERNATIONAL (TOKYO) (P.P.C.A)	SID INGENIEROS SRL. SOILS STUDY SANTA CRUZ REPUBLIC OF BOLIVIA	SCALE 1:40000	SAN JUAN – ANTOFAGASTA ROAD – CUM – EMBANKMENT	SCHEMATIC DRILLINGS LOCATION	SHEET 3

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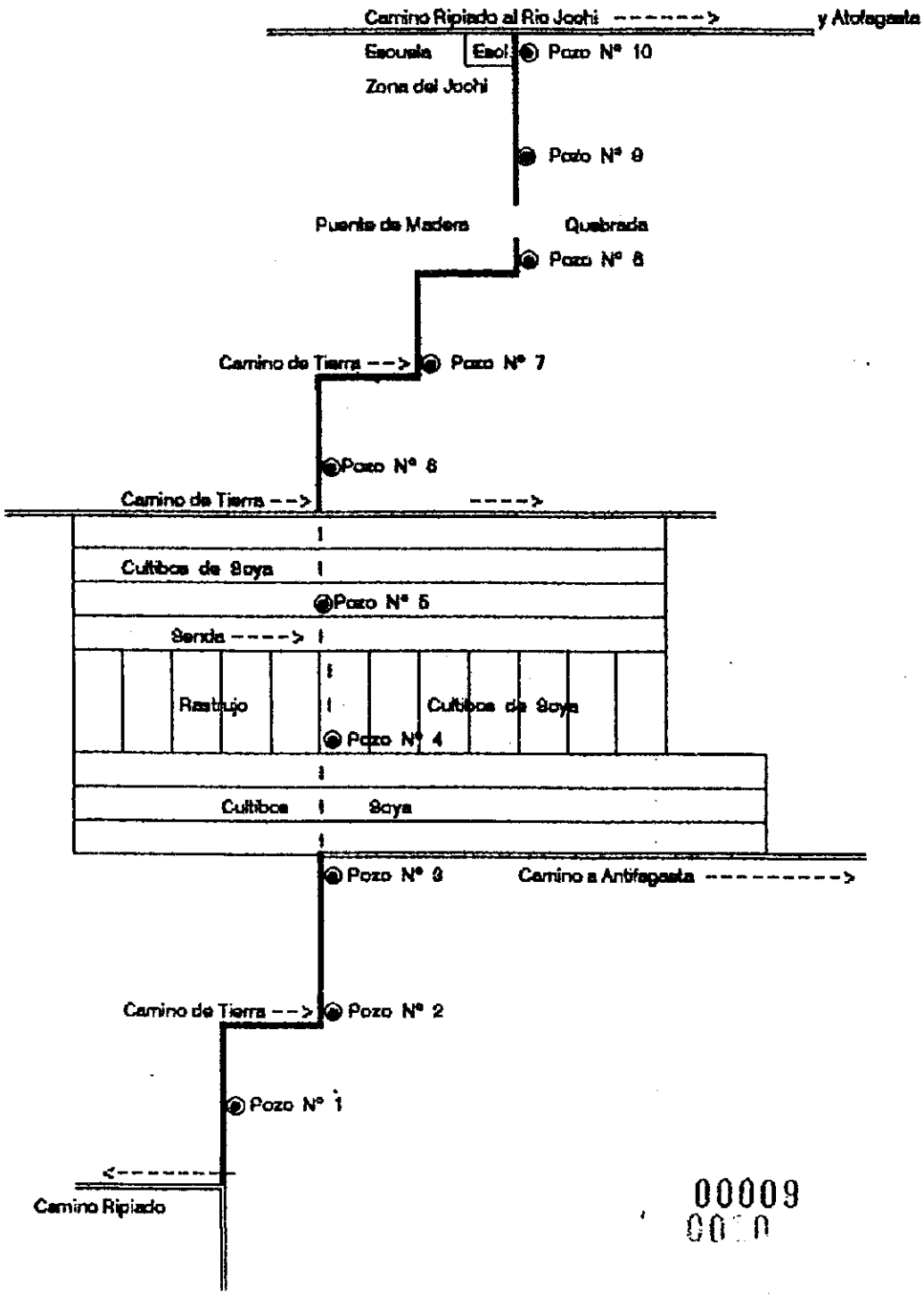
SID INGENIEROS SRL

UBICACION ESQUEMATICA DE ENSAYOS

PROPIETARIO : PACIFIC CONSULTANTS INTERNACIONAL – JICA
PROYECTO : TERRAPLENES Y DRENAJE YAPACANI



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A primordial factor in this type of soils is the presence of subsoil water currents, with turbulent nature flow; since these they can cause the haulage of the slime particles, which produce a rearrangement of the mor granular particles (sands) with the consequent deformations.

These irreversible kind deformations are rended into settlements whose magnitudes are difficult to estimate, less still to quantify, for the aleatory character of the volumetric variations that take place.

The presence of these slime particles, also reduces the sands permeability, making them more prone to quick loads action, which don't allow the surfeit of pores pressure dissipation induced by the same ones.

When they are in saturated state, they suffer volumetricvariations as due to the frozen action.

Poorly graduate oozy sands. SP.-

These soils were detected in minimal proportion and they are basically constituted by sands. They present the same characteristics that the oozy sands, and they differ of the previous ones because they present a poor gradation in their granular particles. Macroscopicly, is determined a bigger participation of quartz particles. They are present in the well 5, in the levels 3 and 4, mixed with SM sands, and classified as SP-SM.

Inorganic slime of low plasticity (ML).-

These soils, generally arranged in lenticular strata shape, were detected in the two upper levels of wells 7 and 8 and in level 3; in the well 1 and in the well 2 in the first 4 meters.

Due to the reduced dimensions of their particles and to their low permeability they are very sensitive to quick loads (loads of non drained type) specially in saturated state, for what is advisable, to carry out the stability analysis following two fail criteria: **the first**, under a whole fatigue regime for a fail of non drained type (short term shear) considering that the friction angle (°f) equals zero, and that the cohesion (c) is equal to shear (s_u), and **the second**, under an effective fatigues regime, that is to say, for a drained type fail (long term fail), considering that the friction angle is greater than zero and the cohesion is equal to shear resistance.

Inorganic loamy slime (ML - CL).-

These very typical soils of the lenticular strata were only detected in the last level of the well 1, and they are represented by a slime and inorganic clay with participation of very fine sand.

For their granulometric nature and their low plasticity, these soils are very sensitive to the quick loads, that is to say non drained kind loads, especially when they are saturated.

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On the other hand they are very well-known the effects of extreme saturation, producing liquefaction, which can be induced by means of dynamic type solicitations.

These soils in general are very sensitive to the water action, especially with turbulent flow, which originates a haulage of the particles, originating to erosive processes whose result is the formation of caverns, channels, holes and tubes, for this reason should be avoided the contact of these materials as much as possible with superficial as subsoil water

When they are saturated they are sensitive to the quick loads, therefore it is advisable to carry out stability test of foundations, according to two fail criteria:

a) **Under a regime of total fatigues, for a non drained kind of fail, this means, to consider the friction angle, equal to zero, and the soil cohesion, equal to non drained shear resistance.**

b) **Under a régime of effective fatigues, which it means for a long term fail or drained kind fail, considering that the friction angle, to be gratest than zero, and the clay s cohesion less than the value of the non drained shear resistance.**

Low plasticity inorganic clay (CL).-

These soils of fine nature, were detected in variable levels in all the polls and they are constituted by low plasticity inorganic clays, due fundamentally to the presence of thicker particles (slime or very fine sand),

When they are saturated they are very sensitive to the quick loads, therefore, depending the project essence, it would be recommendable to carry out triaxial analysis, of shear and consolidation.

Its behavior as foundation soils is very variable, from regular (in normally consolidated state) up to well to very well in high preconsolidación state.

Another characteristic of these foamy soils, is its high compresibility degree and low permeability, producing long time deformations.

High plasticity inorganic clay (CH).-

These soils of similar carasteristics to those of low plasticity whose IP surpasses the value of 50%, has an aggressive and irregular behavior, with the result that its handling should be delicate, carefully and very well guided to the aim of the project to implement. In the study area, it was detected in the last levels of polls 2, 3, 4 and 9.

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V.1.3.b. Profiles description.-

The well profiles (**Annex 3**) which represent the internal sub soil structure, graphically allow to observe the different solis distribution soils detected during the geotechnical exploration.

On the other hand, these profile, in combination with the shear resistance parameters, that is to say, support capacity, will allow later on to define the more suitable foundation levels for the works to face, also allowing, to visualize in schematic form, up on what kind of soils or materials will rest on the different elements that will transmit loads to the foundation soil.

Finally, in each one of the Test and Profiles Summaries, it is included the Phreatic Level is included; as it can be observed with a very variable condition, translating in this way variations of the appreciable topographical levels, that should not missed out, for the aims of the project.

V.2. Results interpretation

The field and laboratory results analysis, and the geotechnic interpretation of the same ones, allows to determine the following results:

V.2.1 Geotechnical parameters

The geotechnical investigation of the land, together with the geologic diagnosis, establish the presence so much of granular soils, represented by oozy sands, as the presence of finer soils represented by slimes and clays, of inorganic nature of low and high plasticity.

The established parameters that correspond to the constituent soils of the Chaco Beniana alluvial plain are:

Sand

Soil kind: Oozy Sand (**SM**)

Cohesion (**c**)	0 Kg / cm^2
Friction angle (°**f**)	30° ± 2°
Specific weight (**γ**)	1.95 Kg / cm^3

Slime

Soil kind: Inorganic slime of low plasticity (**ML**)

Cohesion (**c**)	0.5 Kg / cm^2
Friction angle (°**f**)	25°
Specific weight (**γ**)	1.85 Kg / cm^3

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Clay

Soil kind: Inorganic clay of low plasticity (CL)

Cohesion (c)	1.0 Kg/cm^2
Angle of Friction (°f)	23°
Specific weight (γ)	1.80 Kg / cm^3

The values of the admissible capacity are detailed in the different geotechnical prospecting summaries, **(Annex 4)** owing the designer engineer, to define their foundation levels.

V.2.2 Dynamic penetration tests.-

The dynamic penetration tests reflected in the calculation of the admissible support capacity, establish a soil of variable behavior whose magnitudes vary regarding the depth.

Considering the observed behavior in the polls, it can be concluded that the admissible support capacity of these materials, as well the fine soils, like in the granular soils (sands) shows a variable dispersion, establishing areas of different admissible capacity, which should be carefully administered.

V.2.3 Foundation soils.-

Considering the statigraphic distribution and the local litology of the studied land, it can stablish that sands, slimes and still some clays of the litostatigraphic Unit determined as Llanura Chaco Beniana constitute acceptable foundation soils, therefore the election of one or another material, that is to say, non plastic fine soils (fine sands and slimes) or non agressive plastic fine soils (clays), will be under direct dependence of the elected foundation level and characteristic conditions of the work to be implemented, aspects that finally will be defined according to demands of the project.

As the "firm" land it can be not next to the eventual foundation level, the weight or load to be transmitted by part of the projected structure will be carried out by means of deep foundations.

In the event of being chosen this alternative, the planner will take in consideration the following elements:

- Kind of foundation type to be used.
- Determination of the admissible maximum load.
- Equidistance or separation among foundations.
- Placement method to be used.
- Construction.
- Dimensions.

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VI. CONCLUSIONS AND RECOMMENDATIONS

The geotechical investigation, mainly based on field works, tests, as well of laboratory as in the land, and the appropriate interpretation of all the obtained information, allow to establish the following conclusions and recommendations:

1) The form of the land shows a geometry more or less rectilinear and of plane topography, where they were carried out ten (10) polls or exploratory wells, of 5.00 m. depth each one.

2) Geológically it distinguish a very typical Unit for the soil and subsoil of Santa Cruz, determined as: Alluvial deposits of the Llanura Chaco Beniana

3) The geotechnical exploration based on the laboratory results establishes the presence of three soil groups, classified according to the Unified System of Soils Classification as:

- Sands	
SM	Oozy sand
SM - SW	Well graded oozy sand
SP	Poorly graded sand
SW	Well graded sand
- Slimes	
ML	Inorganic slime
ML - CL	Loamy slime
- Clays	
CL	Inorganic clay of low plasticiddad
CH	Inorganic clay of high plasticity

4) During the geotechnical exploration, it was not detected presence of water filtrations, neither the rise by capillarity, less still the presence of an eventual free or confined aquifer, which doesn't discard the possibility to find water to levels or depths bigger than those investigated, that is to say bigger than 5.00 m.

5) The biggest incidence for the eventual saturation of the soils that are present in the land, is the action of pluvial waters. To avoid this saturation and in this way, to avoid soils settlements and collapses, an appropriate drainage system will be built, not only in the future construction, but also in the neighboring constructions.

6) The more important geotechnical Unit, as well for its structural conditions, its geotechnical properties and its wide development, is represented by the Llanura Chaco Beniana deposits.

7) The foundation type to be adopted as support element for the designed structure, will mainly depend on the magnitude of the transmitted loads, of its combination with the eventual foads and the support materials.

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These considerations allow to define the following foundation kinds:

- **Direct foundation**

  Because of the own characteristics of the loamy soils, this foundation kind is not advisable, except for specific considerations according to the work kind to build.

- **Deep foundation**

  In the case of opting for the deep foundations alternative, they should be considered the following aspects:

  - Foundation kind
  - Determination of the admissible maximum load.
  - Equidistance or separation.
  - Placement method to be used
  - Determination of the best sequence of the foundation elements.
  - Ignoring the characteristics of the works to implement, it is difficult to set that the foundation level would be fixed.

8) The dimensions of the foundations will be calculated by the engineer planner, based on the established parameters in the presently study.

9) Geotechnical parameters obtained in the presently study, to be used in designs, in generic form, will be the following ones:

Sand

Soil kind: Oozy sand (SM)

Cohesion (c)	0 Kg / cm^2
Friction angle (°f)	30° ± 2°
Specific weight (γ)	1.95 Kg / cm^3

Slime

Soil kind: Inorganic soil of low plasticity (ML)

Cohesion (c)	0.5 Kg / cm^2
Friction angle (°f)	25°
Specific weight (γ)	1.85 Kg / cm^3

Clay

Soil kind: Inorganic clay of low plasticity (CL)

Cohesion (c)	1.0 Kg/cm^2
Friction angle (°f)	23°
Specific weight (γ)	1.80 Kg / cm^3

The acceptable capacity of the different detected materials is consigned in the exploration summaries with more detail, owing the planner engineer to opt for the calculation value according to the adopted foundation level.

10) During the execution of the works, according to their use and destination, as much as possible the foundation soils should be protected, to avoid, mainly, an eventual saturation of the same ones in rainy season or for a wrong handling of waters.

11) During the execution of the works, once be defined the foundation level, it is recommended the realization of check tests, with the purpose of verifying the penetration index, besides also allowing to confirm the litología and the humidity degree of the soils, in the very fundation point.

12) If during the execution of the works they appeared singularities unaware to those described in the presently study, it is recommended to inform to the geotechnical engineer , with the purpose of to join criteria and to try to find the possible more appropriate solution.

Santa Cruz, September 1998

SIDINGENIEROS SRL

P O L L I N G P R O F I L E

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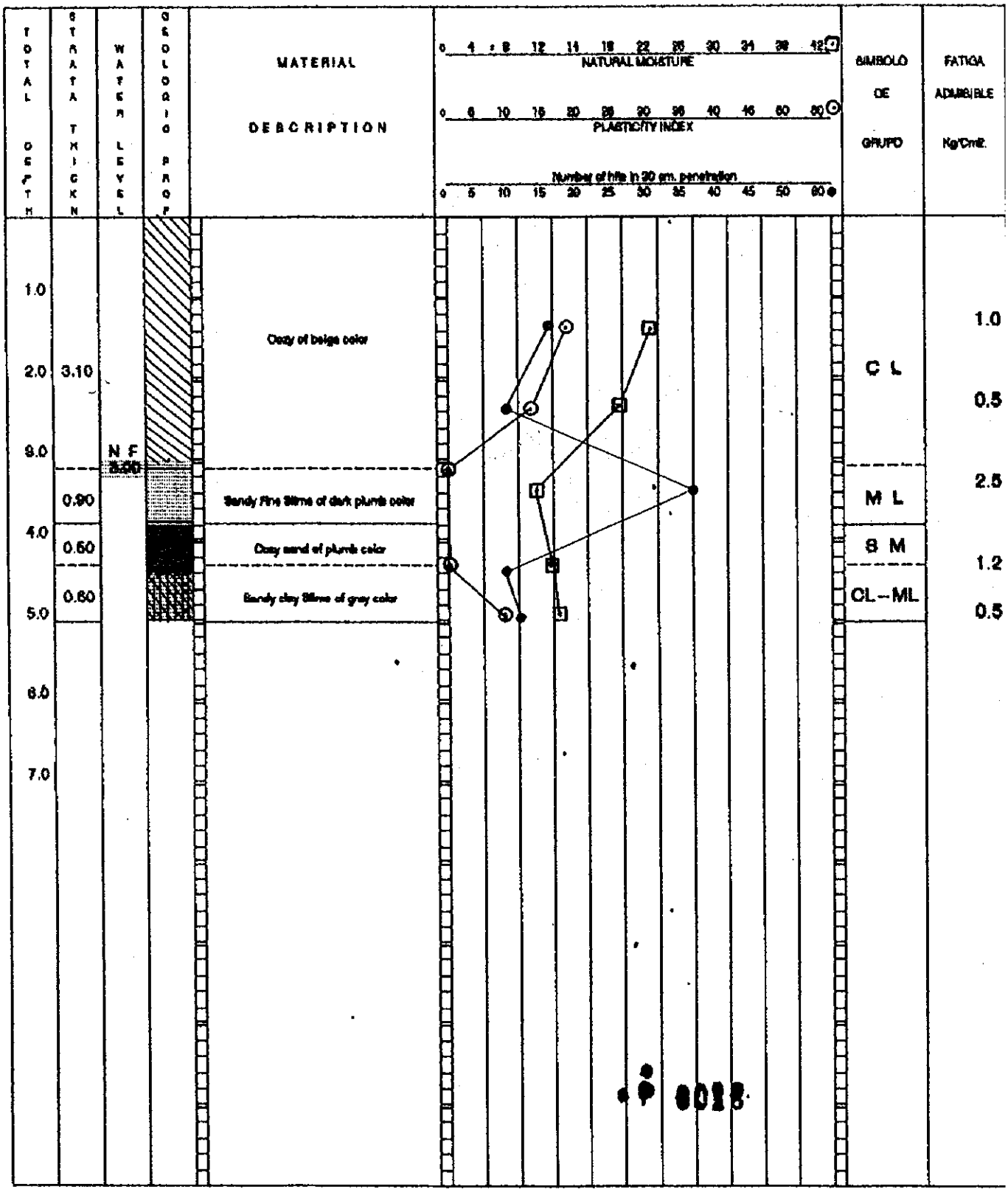
JOB : Embankments
WELL Nr. : 1

PROJECT : Draining
LOCATION : Yepocani
DATE :

16/08/96



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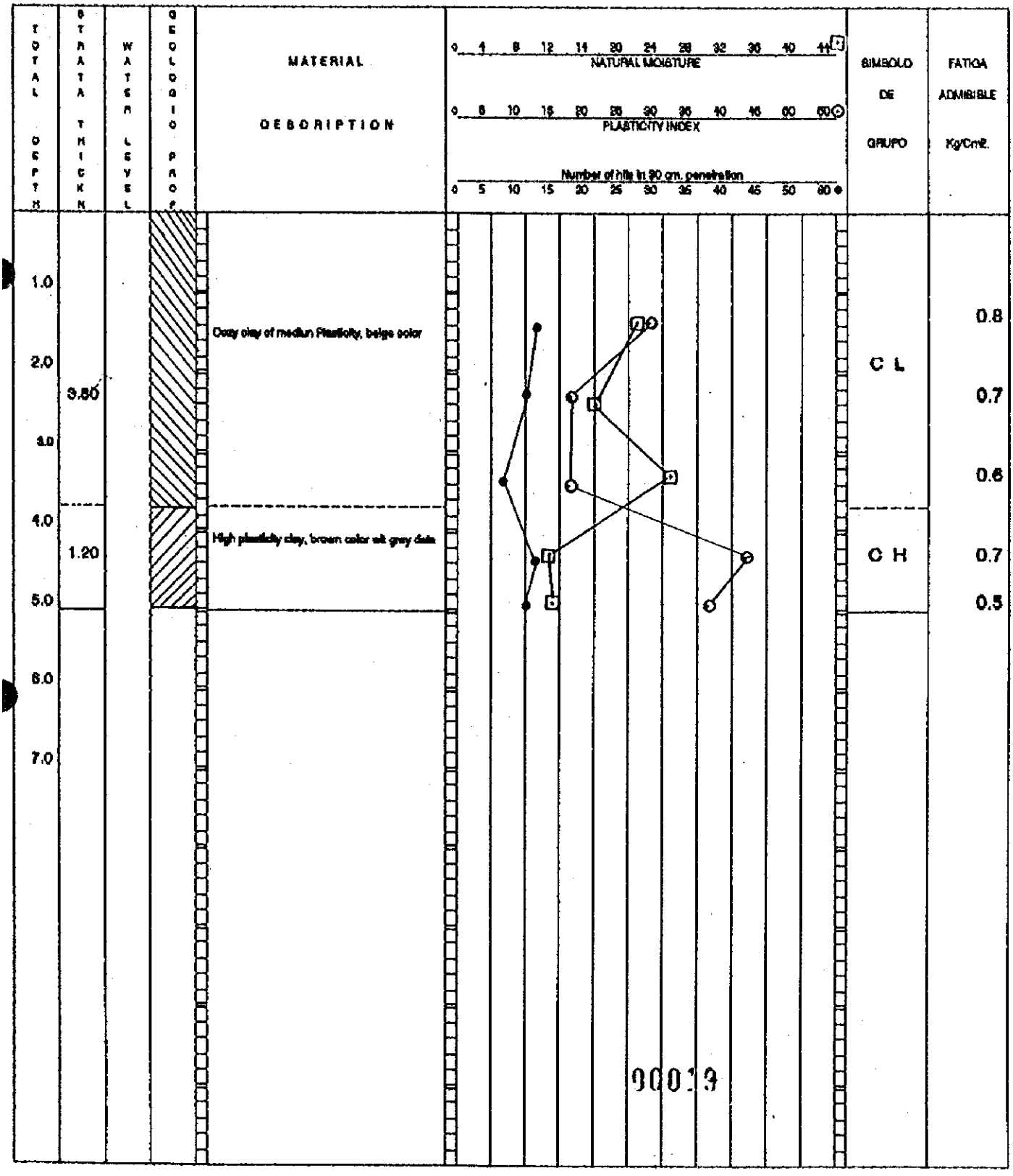

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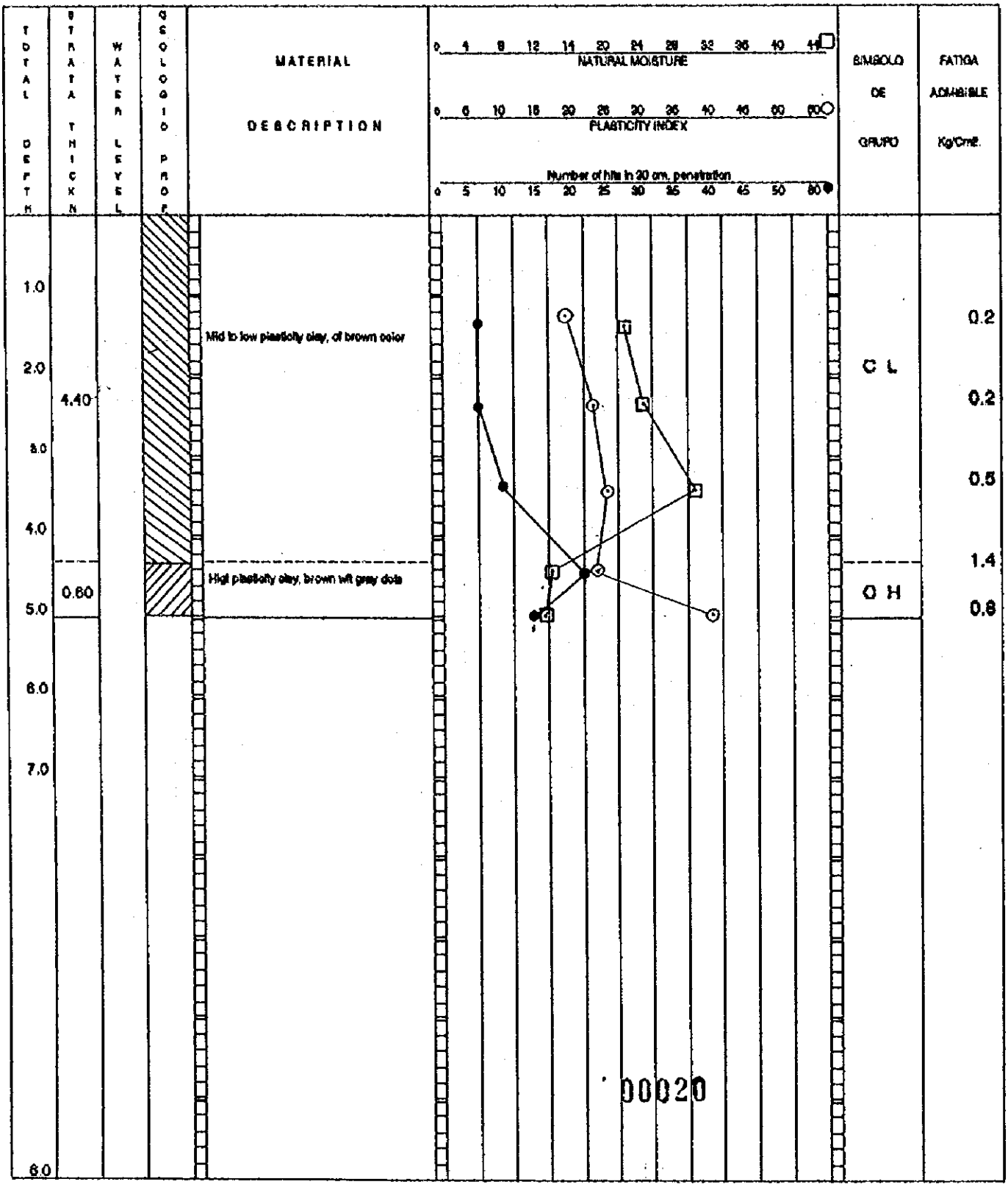

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P O L L I N G P R O F I L E

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JOB : Embankments
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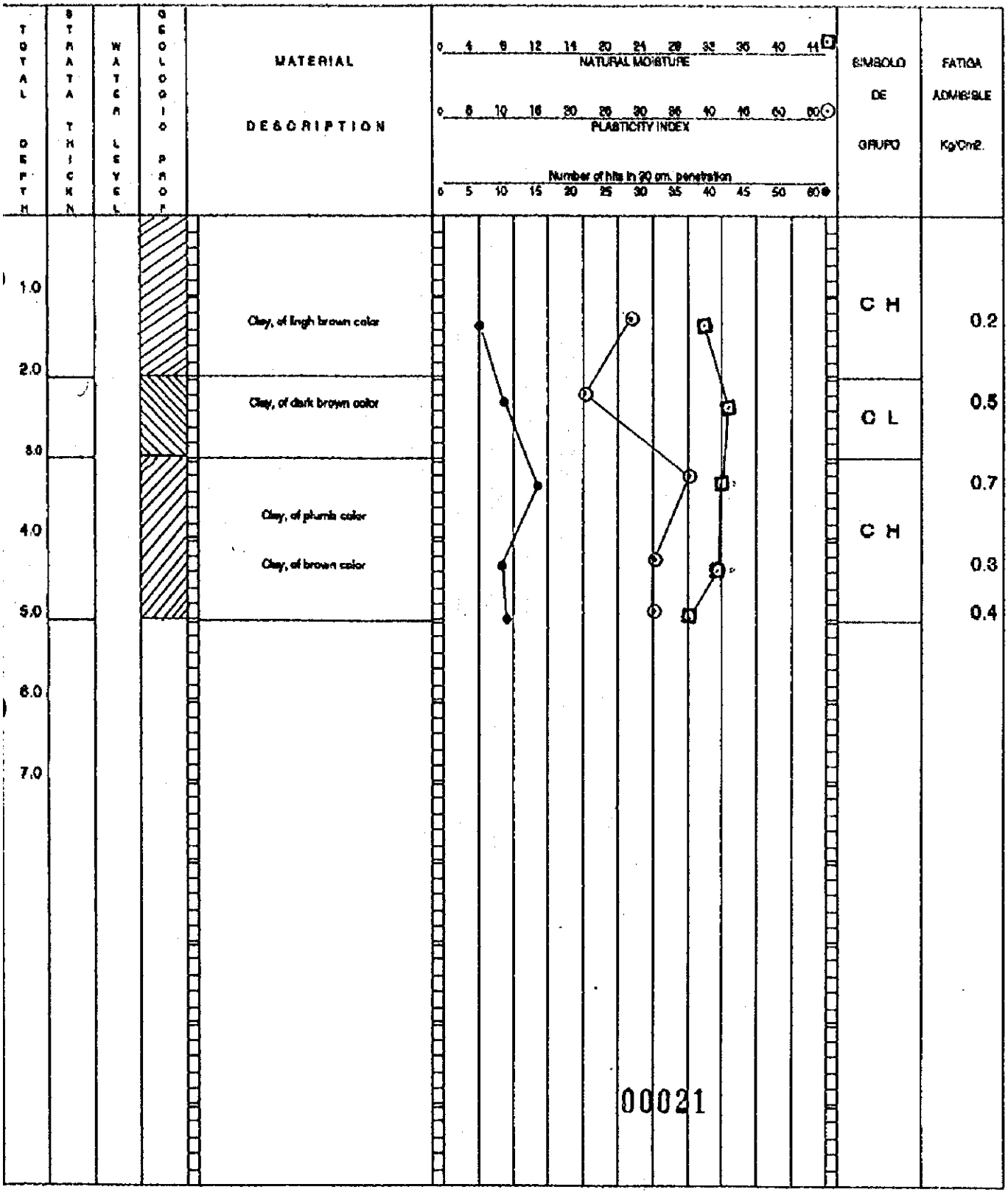

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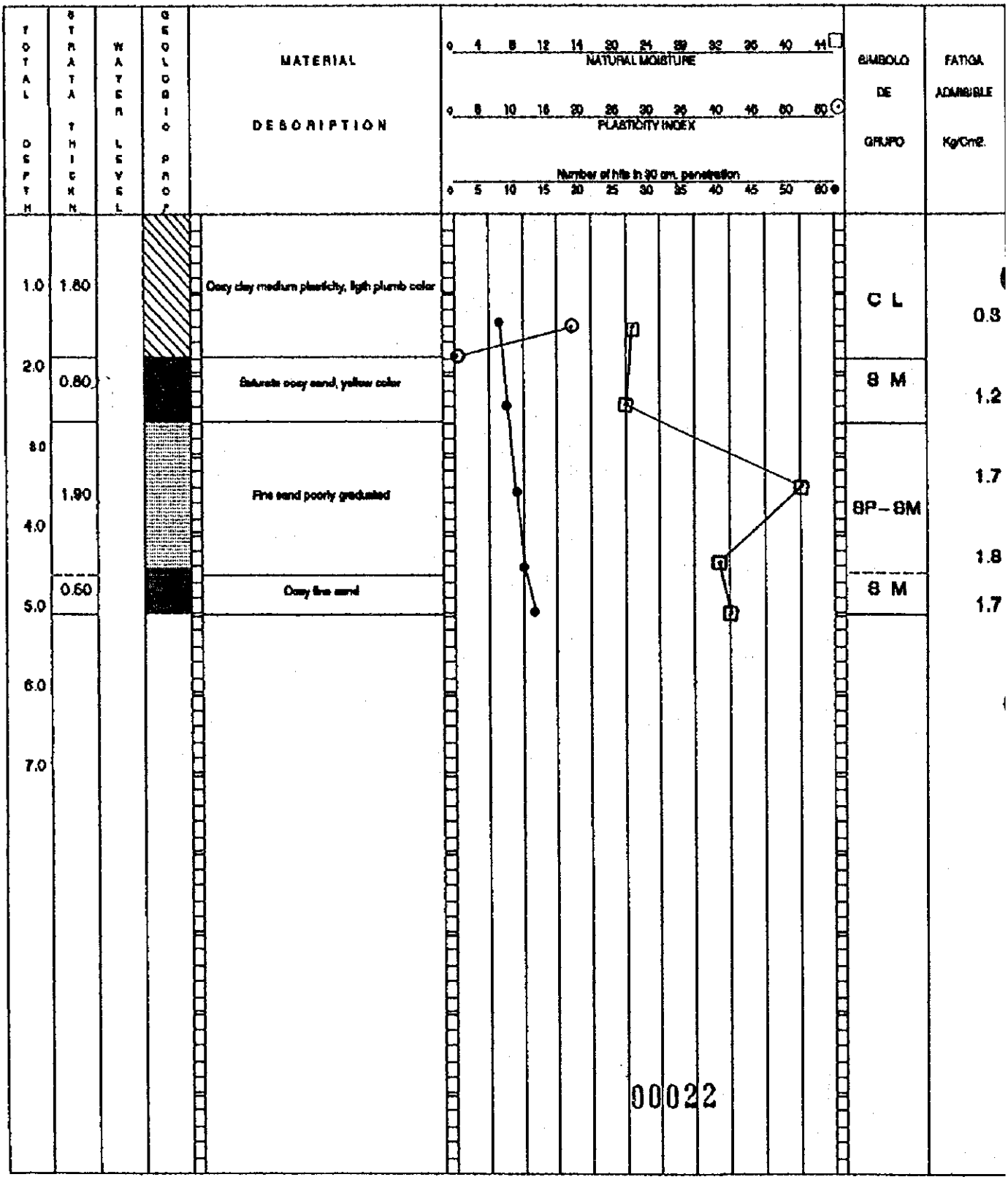

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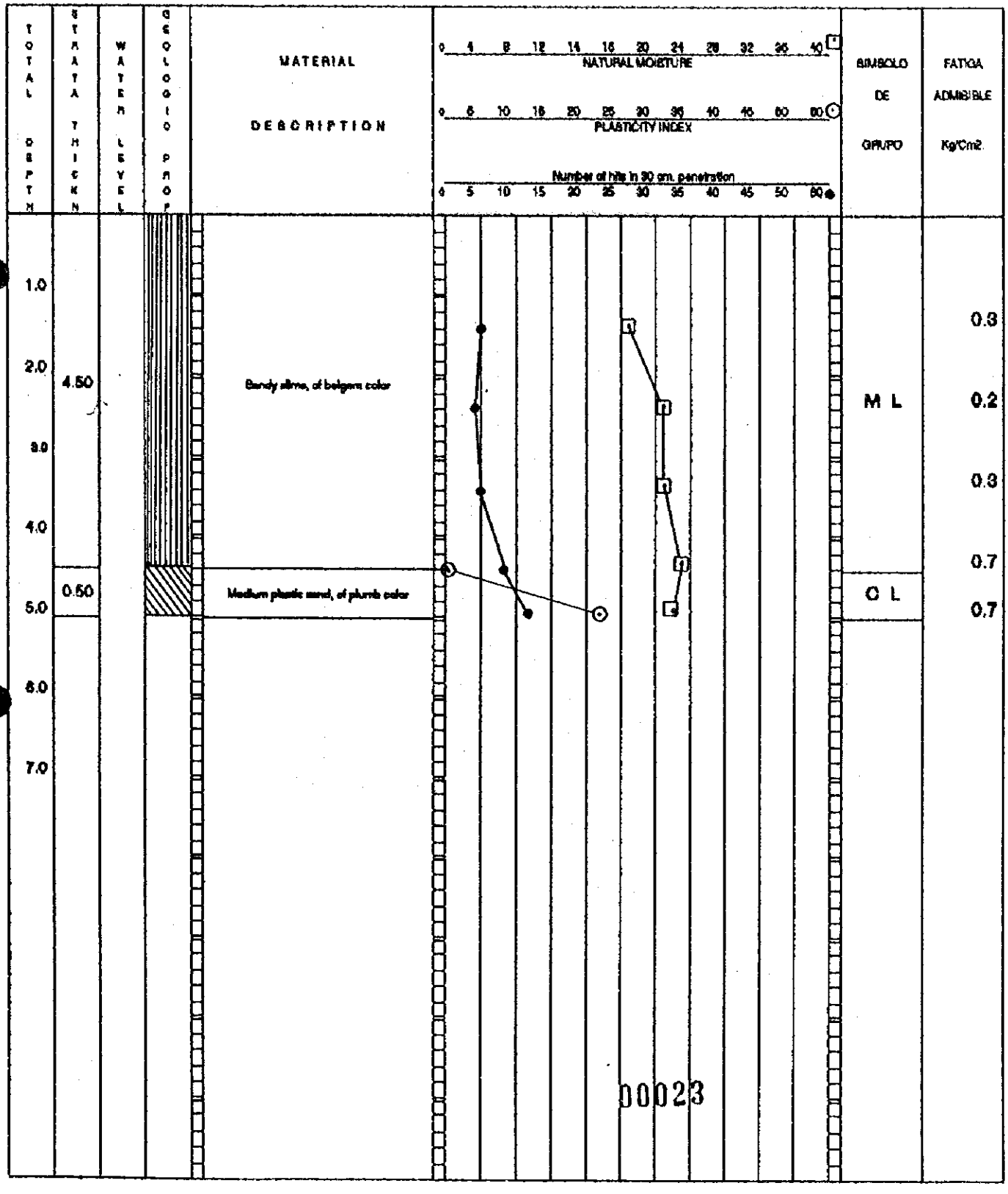

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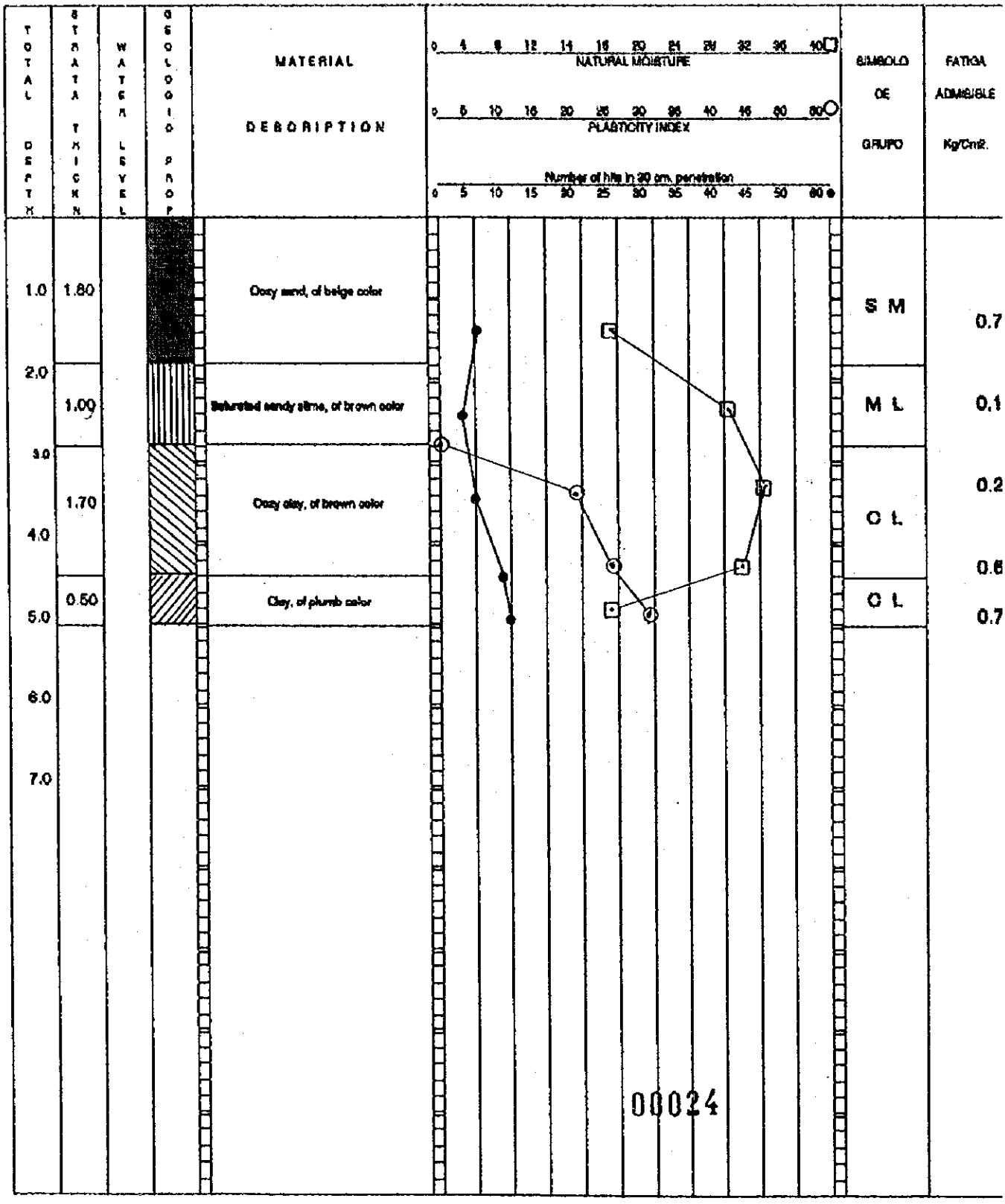

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JOB : Embankments
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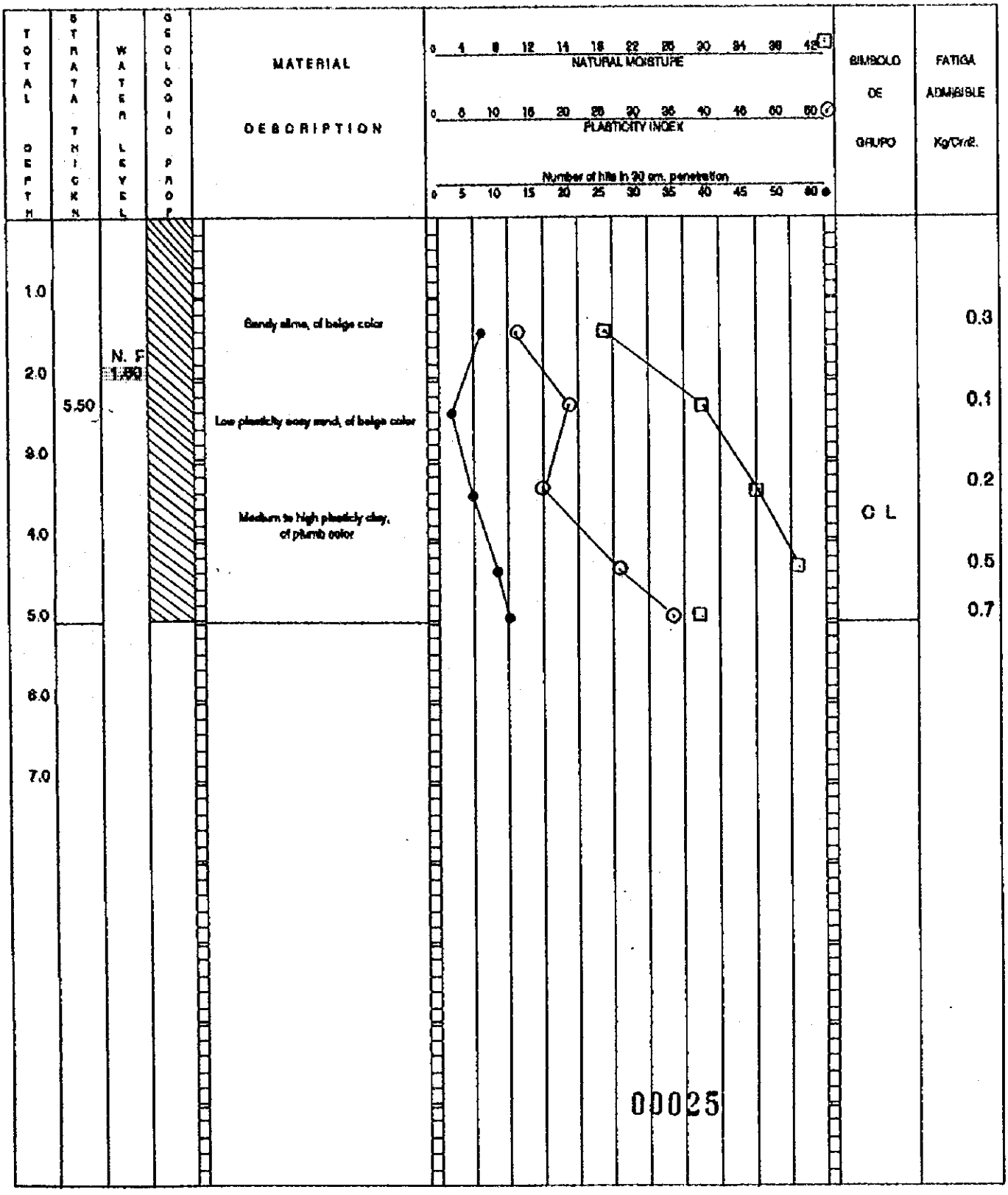

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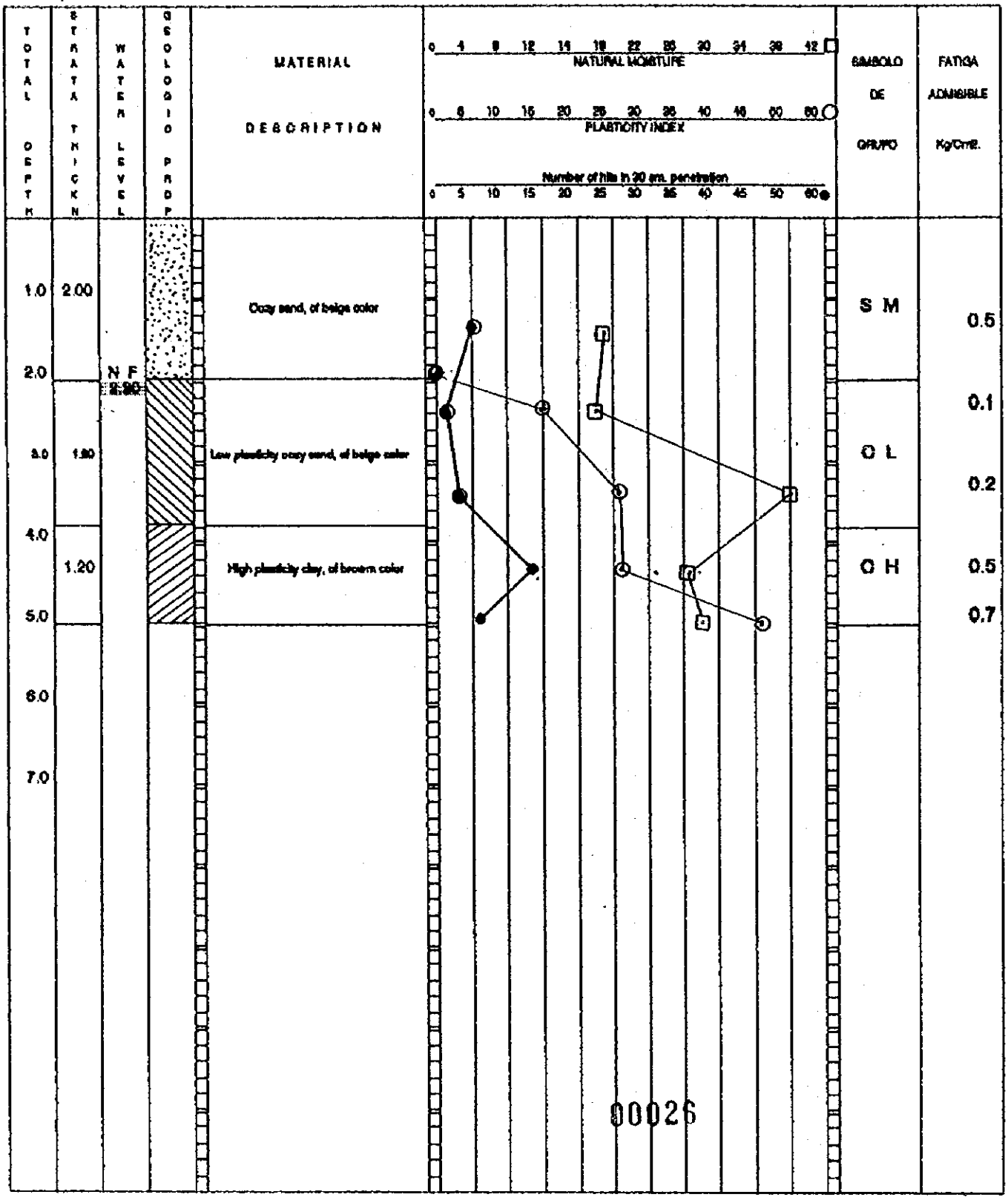
LOCATION : Yapacani
DATE : 16/08/96



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JOB : Embankments
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PROJECT : Draining
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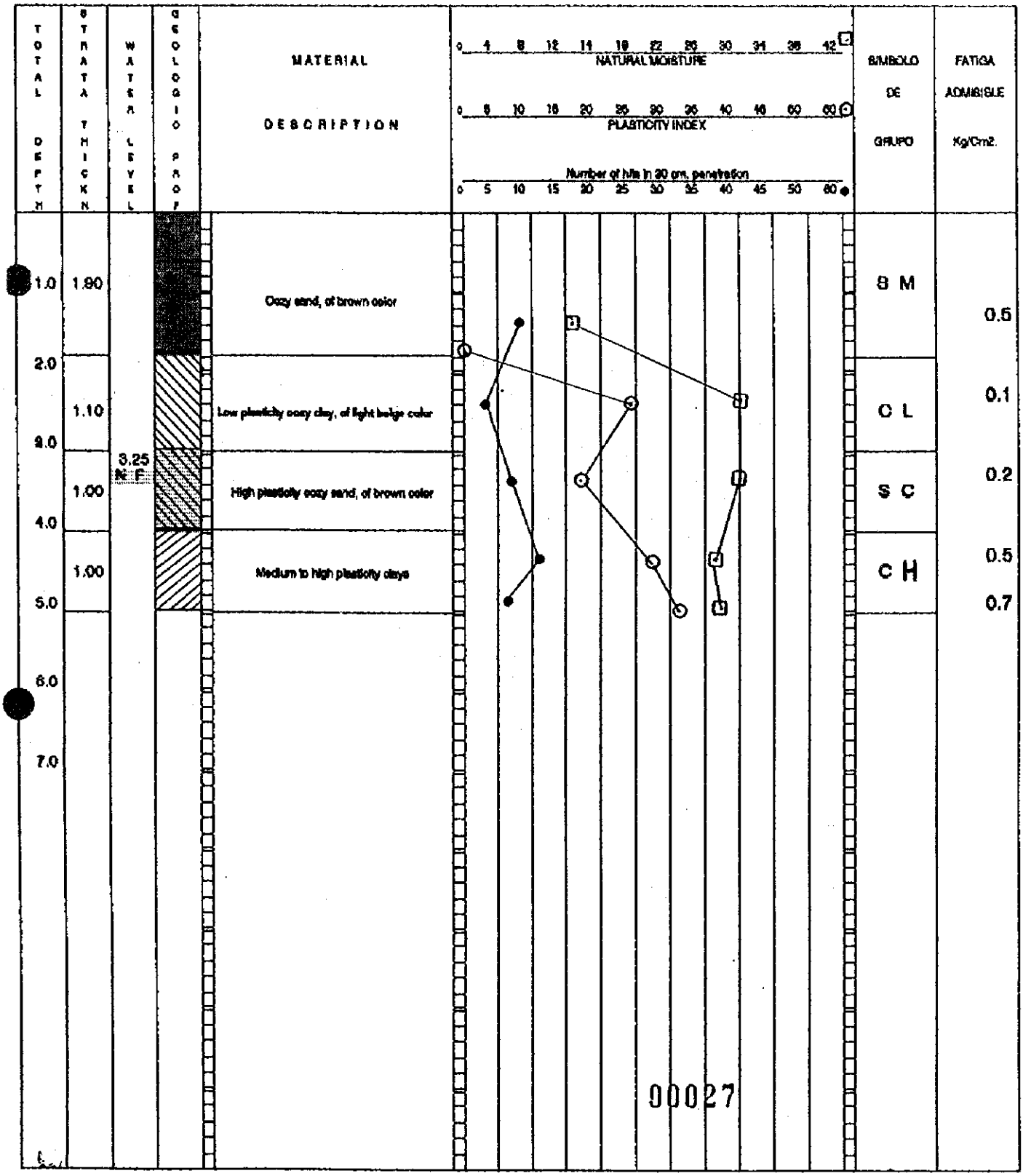

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SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 1

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	P.L.	P.L.	γ (kp/dm³)	30 cm. PEN.	AASTHO	UNIF. SYST.	σ (kp./cm²)
1.00 a 1.45	21,3	100	100	100	92	33	16	17	1,773	14	A-6(10)	C L	1,0
2.00 a 2.45	17,9	100	100	100	84	29	17	12	1,743	8	A-6(9)	C L	0,5
3.00 a 3.45	10,3	100	100	100	100	-	-	N P	1,883	35	A-4(8)	M L	2,5
4.00 a 4.45	11,6	100	100	91	31	-	-	N P	1,945	8	A-2-4(0)	S M	1,2
4,55 a 5.00	12,4	100	100	99	64	21	13	8	1,769	10	A-4(4)	CL - ML	0,5

OBSERVATIONS

MATERIAL CHANGES

Up 3,10 m. Oozy clay of beige color (C L)
From 3,10 to 3,80 m. Sandy Fine Slime of dark plumb color (M L)
From 3,80 to 4,50 m. Oozy sand of plumb color (S M)
From 4,50 to 5,00 m. Sandy Clay Slime of gray color (CL - ML)
Water level at 3,00 m.

00028

00027

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 2

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1,00 a 1.45	21,9	100	100	100	100	50	23	27	1,743	12	A-7-6 (17)	C L	0,8
2,00 a 2.45	14,0	100	100	100	81	34	18	16	1,773	10	A -6 (9)	C L	0,7
3,00 a 3.45	25,0	100	100	100	98	34	18	16	1,773	7	A -6 (9)	C L	0,6
4.00 a 4.45	11,1	100	100	100	100	69	27	42	1,587	12	A-7-6 (20)	C H	0,7
4,55 a 5.00	11,2	100	100	100	100	66	29	37	1,587	10	A-7-6 (20)	C H	0,5

OBSERVATIONS

MATERIAL CHANGES

Up 3,80 m. Oozy clay of medium plasticity, beige color (C L)

From 3,80 to 5,00 m. High plasticity clay, brown color wit gray dots (C H)

No water level detected.

00029

00028

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : **3**

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	20,9	100	100	100	87	32	14	18	1,773	5	A-6(10)	C L	0,2
2.00 a 2.45	23,2	100	100	100	100	40	19	21	1,743	5	A-6(13)	C L	0,2
3.00 a 3.45	28,8	100	100	100	100	48	25	23	1,743	8	A-7-6(15)	C L	0,5
4.00 a 4.45	12,4	100	100	100	100	48	26	22	1,743	20	A-7-6 (15)	C L	1,4
4,55 a 5.00	11,9	100	100	100	100	63	25	38	1,587	13	A-7-6 (20)	C H	0,8

OBSERVATIONS

MATERIAL CHANGES

Up 2,50 m. Mid to low plasticity Clay, of brown color (C L)

From 4,50 to 5,00 m. High plasticity clay, brown color wit gray dots (C H)

Water level at 2,80 m.

00030

00029

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 4

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	30,3	100	100	100	100	53	26	27	1,587	5	A-7-6-(18)	C H	0,2
2.00 a 2.45	33,2	100	100	100	100	42	22	20	1,743	8	A-7-6-(13)	C L	0,5
3.00 a 3.45	32,5	100	100	100	100	60	25	35	1,587	13	A-7-6-(13)	C H	0,7
4.00 a 4.45	31,5	100	100	100	100	56	26	30	1,587	8	A-7-6-(20)	C H	0,3
4,55 a 5.00	28,1	100	100	100	100	54	24	30	1,587	9	A-7-6-(19)	C H	0,4

OBSERVATIONS

MATERIAL CHANGES

There are not detected proounced material changes, except by color change.

At 1.00 m. Clay, of light brown color (C H)

At 2.00 m. Clay, of dark brown color (C L)

At 3,00 m. Clay, of plumb color (C H)

From 4,50 to 5.00 m. Clay of brown color (C H)

No water level detected

00031

00030

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : **5**

PROJECT : **DRAINING**

LOCATION : **YAPACANI**

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	17,4	100	100	100	99	33	16	17	1,772	6	A-6-(9)	C L	0,3
2.00 a 2.45	16,0	100	100	100	37	-	-	N P	1,628	8	A-4(1)	S M	1,2
3.00 a 3.45	38,0	100	100	100	11	-	-	N P	1,624	9	A-2-4(0)	SP-SM	1,7
4.00 a 4.45	27,0	100	100	97	10	-	-	N P	1,624	10	A-3(1)	SP-SM	1,8
4,55 a 5.00	28,0	100	100	99	31	-	-	N P	1,945	12	A-2-4(0)	S M	1,7

OBSERVATIONS : MATERIAL CHANGES

Up 1.80 m.	Oozy clay of medium plasticity, ligth plumb color (C L)
From 1,80 to 2,60 m.	Saturated oozy sand, yellow color (S M)
From 2,60 to 4,50 m.	Fine sand poorly graduated (SP - SM)
From 4,50 to 5,00 m.	Oozy fine sand (S M)
Water level at 1,80 m.	Clay of brown color (C H)

00032

00031

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 6

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	16,7	100	100	100	69	-	-	N P	1,883	5	A-4-(6)	M L	0,3
2.00 a 2.45	20,9	100	100	100	73	-	-	N P	1,883	4	A-4-(7)	M L	0,2
3.00 a 3.45	20,9	100	100	100	73	-	-	N P	1,883	5	A-4-(7)	M L	0,3
4.00 a 4.45	22,9	100	100	97	90	-	-	N P	1,883	8	A-4-(8)	M L	0,7
4,55 a 5.00	21,9	100	100	99	89	41	19	22	1,773	12	A7-6-(13)	C L	0,7

OBSERVATIONS : MATERIAL CHANGES

Up 4,40 m. Sandy slimes, of beige color (M L)

From 4,40 to 5,00 m. Medium plastic sand, of plumb color (C L)

No water level detected

00033

00032

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 7

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1,00 a 1.45	17,4	100	100	98	43	-	-	N P	1,945	5	A-4-(2)	S M	0,7
2,00 a 2.45	32,5	100	100	95	69	-	-	N P	1,883	3	A-4-(6)	M L	0,1
3,00 a 3.45	34,7	100	100	100	100	39	20	19	1,773	5	A-6-(11)	C L	0,2
4,00 a 4.45	28,8	100	100	100	100	48	24	24	1,773	9	A-6-(14)	C L	0,6
4,55 a 5.00	19,3	100	100	100	100	60	31	29	1,773	10	A-7-6-(20)	C L	0,7

OBSERVATIONS :

MATERIAL CHANGES

Up 1,80 m. Oozy sand, of beige color (S M)

From 1,80 to 2,80 m. Saturated sandy slime, of brown color (C L)

From 2,60 to 4,50 m. Oozy clay, of brown color (C L)

From 4,50 to 5,00 m. Clay, of plumb color (C L)

No water level detected

00034

00033

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 8

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	17,8	100	100	100	83	30	19	11	1,779	6	A-6(7)	C L	0,3
2.00 a 2.45	28,0	100	100	100	81	36	18	18	1,590	2	A-6(11)	C L	0,1
3.00 a 3.45	34,0	100	100	100	100	36	21	15	1,590	5	A-6(10)	C L	0,2
4.00 a 4.45	39,2	100	100	100	100	46	20	26	1,585	8	A-7-6(16)	C L	0,5
4,55 a 5.00	28,4	100	100	100	100	50	17	33	1,585	10	A-7-6(20)	C L	0,7

OBSERVATIONS : MATERIAL CHANGES

Up 1.80 m.	Sandy slime, of beige color (M L)
From 1,80 to 3,80 m.	Low plasticity oozy sand, of beige color (C L)
From 3,80 to 5,00 m.	Medium to high plasticity clay, of plumb color (C L)
At 1,80 m.	Saturated material

00035

00034

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : 9

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	17,4	100	100	100	46	-	-	N P	1,945	5	A-4 (3)	S M	0,7
2.00 a 2.45	16,0	100	100	100	66	34	19	15	1,743	2	A-6 (10)	C L	0,1
3.00 a 3.45	38,0	100	100	100	100	49	23	26	1,773	3	A-7-6 (17)	C L	0,1
4.00 a 4.45	27,0	100	100	100	100	47	21	26	1,773	14	A-7-6 (16)	C L	0,6
4,55 a 5.00	28,0	100	100	100	98	64	18	46	1,587	6	A-7-6 (20)	C H	0,2

OBSERVATIONS : MATERIAL CHANGES

Up 2,00 m. Oozy sand, of beige color (S M)

From 2,00 to 3,80 m. Low plasticity oozy sand, of beige color (C L)

From 3,80 to 5,00 m. High plasticity clay, of brown color (C H)

Water level at 2,20 m.

00036

00035

SID INGENIEROS SRL

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. : **10**

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 14/08/98

DEPTH	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
(m)	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
1.00 a 1.45	14,6	100	100	100	49	20	0	N P	1,945	8	A-4 (4)	S M	1,2
2,00 a 2.45	30,0	100	100	100	98	43	19	24	1,773	3	A-7-6 (15)	C L	0,1
3.00 a 3.45	30,0	100	100	100	23	37	20	17	1,883	7	A-2-6 (2)	S C	0,8
4.00 a 4.45	27,0	100	100	100	100	49	22	27	1,773	11	A-7-6 (17)	C L	0,8
4,55 a 5.00	28,0	100	100	100	99	50	19	31	1,587	7	A-7-6 (20)	C H	0,4

OBSERVATIONS : MATERIAL CHANGES

Up 1,90 m. Oozy sand, of brown color (S M)
From 1,90 to 3,00 m. Low plasticity oozy clay, of light beige color (C L)
From 3,00 to 4,00 m. High plasticity oozy sand, of brown color (S C)
From 4,00 to 5,00 m. Medium to high plasticity clays (CL - CH)
Water level at 3,25 m.

00037

00036

TEST RESUME

OWNER : PACIFIC CONSULTANTS INTERNACIONAL - JICA

JOB : EMBANKMENTS

WELL Nr. :

PROJECT : DRAINING

LOCATION : YAPACANI

DATE : 05/09/98

LOCATION	NAT. MOIST.	GRANULOMETRY (SIEVE)				ATTERBERG LIMITS			SPEC. W.	Nr./Hits	CLASSIFICATION		SUPPORT CAPACITY
	ω (%)	4	10	40	200	L.L.	L.P.	I P	γ (kp/dm³)	30 cm. PEN.	AASTHO	SIST. UNIF.	σ (kp./cm²)
RANCHO CHICO	25,3	100	100	81	98	54	24	30			A-7-6-(18)	C H	
EL EMPALME II	12,5	100	100	100	33	43	N P	N P			A-2-4 (0)	S M	
OKINAWA DRAINAGE	31,5	100	100	100	99	31	19	12			A-6 (7)	C L	
TACUARAL	20,8	100	100	100	74	30	17	13			A-6 (8)	C L	
CHACO	25,8	100	100	100	75	34	15	19			A-6 (11)	C L	
OKINAWA PAILON	29,3	100	100	99	72	34	18	16			A-6 (9)	C L	
YAPACANICITO	17,9	100	100	100	91	35	19	16			A-6 (9)	C L	
CHANE	35,0	100	100	92	67	37	19	18			A-6 (10)	C L	
JOCHI	15,0	100	100	100	51	20	N P	N P			A-4 (4)	M L	

00016

SID INGENIEROS SRL

SPECIFIC WEIGHTS DETERMINATION

FINE MATERIAL

OWNER : PACIFIC CONSULTANTS INTERNACIONAL-JICA PROJECT : DRAINAGE

WORK : LOCACION : NORHT

REAL SPECIFIC WEIGHT

	SAMPLE	DESIG.	OPERATN.	1	2	3	AVER.
	LOCACION : RANCHO CHICO						
a	Volumetric flask weight (Pc)	Pc	P_1	95,700	95,700		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	148,850		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,300	376,200		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,700	343,700		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	53,150		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,600	32,500		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,400	20,650		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,577	1,574		1,576
	LOCACION : EL EMPALME						
a	Volumetric flask weight (Pc)	Pc	P_1	95,700	95,700		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	145,700		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,500	374,650		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,800	343,800		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	50,000		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,700	30,850		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,300	19,150		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,591	1,611		1,601
	LOCACION : OKINAWA DRAINAGE						
a	Volumetric flask weight (Pc)	Pc	P_1	95,700	132,600		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	266,540		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,600	716,850		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,700	634,200		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	133,940		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,900	82,650		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,100	51,290		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,618	1,611		1,615
	LOCACION : TACUARAL						
a	Volumetric flask weight (Pc)	Pc	P_1	95,700	95,700		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	145,700		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,300	374,350		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,700	343,700		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	50,000		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,600	30,650		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,400	19,350		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,577	1,584		1,581

LOCACION : CHACO

a	Volumetric flask weight (Pc)	Pc	P_1	95,700	95,700		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	145,700		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,600	374,580		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,700	343,700		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	50,000		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,900	30,880		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,100	19,120		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,618	1,615		1,616

LOCACION : OKINAWA PAILON

a	Volumetric flask weight (Pc)	Pc	P_1	30,880	30,880		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	69,100	69,100		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	104,340	104,260		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	81,660	81,660		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	38,220	38,220		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	22,780	22,700		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	15,440	15,520		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,475	1,463		1,469

LOCACION : YAPACANICITO

a	Volumetric flask weight (Pc)	Pc	P_1	30,880	30,880		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	53,180	53,180		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	95,170	95,170		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	81,560	81,560		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	22,300	22,300		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	13,610	13,610		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	8,690	8,690		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,566	1,566		1,566

LOCACION : CHANE

a	Volumetric flask weight (Pc)	Pc	P_1	30,880	30,880		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	70,860	70,860		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	105,970	105,935		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	81,560	81,560		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	39,980	39,980		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	24,410	24,375		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	15,570	15,605		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,568	1,562		1,565

LOCACION : JOCHI

a	Volumetric flask weight (Pc)	Pc	P_1	95,700	95,700		
b	Volumetric flask weight + Dry sample (Pms)	Pms	P_2	145,700	145,700		
c	Volumetric flask weight + Sample + Water (Pc+M+a)	Pc-Ma	P_3	374,580	374,620		
d	Volumetric flask weight + Water (Pca)	Pca	P_4	343,700	343,700		
f	Pms - Pc (b-a)		$P_5 = P_2-P_1$	50,000	50,000		
g	[Pc+Ma]-Pca (c-d)		$P_6 = P_3-P_4$	30,880	30,920		
h	[Pc+Ma-Pca]-[Pms-Pc] (f-g)		$P_7 = P_5-P_6$	19,120	19,080		
i	Real Specific Weight (f/g)		$P_8 = P_5/P_7$	1,615	1,621		1,618

DATA BOOK B

RAINFALL DATA

Rainfall Data: Buena Vist 13PY

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	24.0	13.0	6.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	4.0	29.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	12.5
3	2.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	14.0	5.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	14.0
5	10.0	5.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3
6	25.0	0.0	5.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	27.6
7	10.0	0.0	0.0	13.5	32.5	0.0	16.2	0.0	2.0	0.0	2.3	0.0
8	0.0	0.0	0.0	2.5	0.0	0.0	13.0	0.0	0.0	0.0	0.0	34.9
9	1.0	0.0	0.0	10.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	2.8
10	30.0	0.0	0.0	111.0	0.0	0.0	0.0	0.0	2.5	0.0	2.5	0.9
11	8.0	29.5	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.0
12	18.3	103.0	0.0	0.0	0.0	0.0	1.0	0.0	13.5	0.0	0.0	5.4
13	24.0	24.5	2.0	0.0	0.0	1.5	0.0	0.0	0.1	0.5	0.0	2.1
14	1.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	37.0	0.0	0.0
15	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	2.5	3.5	0.0	0.0	1.5	0.0
17	1.5	10.0	0.0	0.0	0.0	0.0	17.0	12.5	0.0	1.0	1.2	0.0
18	13.0	65.5	6.5	2.0	0.0	4.5	1.0	0.0	0.0	0.0	22.5	0.0
19	0.0	10.0	0.0	8.5	0.0	0.0	0.0	0.0	1.0	7.0	0.0	0.0
20	1.5	0.0	0.0	3.0	0.0	0.0	0.0	0.0	23.0	9.5	0.0	0.0
21	0.0	2.0	21.5	6.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0
22	0.5	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0
23	0.0	5.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.5	6.0
24	0.0	17.5	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
25	2.5	5.5	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
26	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	2.5
27	9.0	4.5	57.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
28	25.0	13.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	60.0		8.0	1.0	0.0	0.0	0.0	0.0	36.7	5.0	0.0	1.0
30	177.0		7.0	0.0	0.0	0.0	1.0	0.0	8.5	0.0	0.0	1.0
31	30.0		1.0		0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Total	491.8	362.5	158.0	190.0	39.0	7.0	53.7	36.0	87.3	81.0	114.0	113.8
Max	177.0	103.0	57.0	111.0	32.5	4.5	17.0	20.0	36.7	37.0	37.5	34.9
Rain Days	23.0	18.0	16.0	11.0	5.0	3.0	9.0	3.0	8.0	8.0	11.0	14.0

Rainfall Data: Buena Vis 13PY

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	40.0	0.5	0.0	1.5	0.0	0.0	0.0	0.0	7.0	30.0
2	0.0	1.3	0.0	1.5	2.0	0.5	0.0	0.0	0.0	1.0	0.3	0.0
3	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	93.0	0.0
4	14.5	16.8	0.0	0.0	0.0	0.1	1.0	0.0	6.0	0.0	0.5	1.5
5	126.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.5
6	3.5	17.6	1.0	3.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	1.0
7	0.0	2.5	0.0	20.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	140.1
8	0.0	7.4	0.0	4.5	0.0	0.0	1.0	2.0	0.0	0.0	34.0	28.5
9	0.0	23.0	0.0	0.0	0.0	0.0	5.0	0.0	8.0	0.0	2.0	0.0
10	3.5	0.0	0.0	27.0	7.0	0.0	3.5	0.0	0.0	0.0	9.0	2.0
11	8.0	20.0	0.5	3.8	6.0	0.0	1.0	0.0	0.0	2.0	0.0	2.5
12	0.0	5.4	6.5	0.0	0.0	0.0	3.0	0.0	0.0	72.5	0.0	3.0
13	32.2	0.0	6.4	2.3	0.0	0.0	0.0	0.0	0.0	25.5	0.0	0.0
14	26.0	0.0	134.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0
15	1.0	0.0	1.9	0.0	4.2	0.0	0.0	11.0	0.0	0.0	0.5	0.0
16	0.0	22.0	0.0	2.8	3.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
17	0.5	0.0	6.5	60.0	17.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0
18	3.0	0.0	0.0	0.0	16.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	11.0	8.5	0.0	0.0	0.0	0.0	0.5	0.0
20	51.0	0.0	0.0	0.0	4.0	1.5	0.0	0.0	16.0	0.0	0.0	13.5
21	61.5	0.0	0.0	0.0	4.5	1.0	0.0	35.0	0.0	94.0	0.0	0.0
22	25.5	0.0	0.0	0.0	1.0	0.0	0.0	2.0	0.0	0.0	0.0	80.0
23	0.0	6.3	1.0	0.0	0.5	0.0	0.0	0.0	12.0	0.0	8.0	3.0
24	6.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	4.0
25	1.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.5	0.0	7.5
26	0.0	11.0	0.0	0.3	0.0	3.0	0.0	21.5	0.0	53.0	0.0	0.0
27	3.5	1.6	16.4	14.0	0.0	16.0	0.0	9.0	0.0	1.5	0.0	9.3
28	29.5	2.5	4.8	0.0	0.0	1.0	0.0	1.5	0.0	0.0	0.0	2.0
29	2.5	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.5
30	0.0		1.0	0.0	0.7	0.0	0.0	0.0	0.0	0.5	0.0	52.0
31	4.0		4.0		0.0		0.0	0.0		9.6		48.0
Total	403.7	175.9	224.0	139.7	76.9	58.1	14.5	89.5	125.5	280.1	178.8	454.9
Max	126.5	23.0	134.0	60.0	17.0	25.0	5.0	35.0	56.0	94.0	93.0	140.1
Rain Days	19.0	18.0	13.0	12.0	13.0	10.0	6.0	9.0	8.0	11.0	12.0	19.0

Rainfall Data: Buena Vist 13PY

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	60.0	31.5	58.0	0.0	0.0	0.5	0.0	2.1	3.0	22.0	3.0	133.3
2	18.0	180.0	0.0	0.0	0.0	1.7	0.0	2.0	0.0	0.0	0.0	1.5
3	1.0	150.0	0.0	0.0	0.0	1.3	1.5	24.0	0.0	0.0	0.0	1.6
4	0.0	11.5	0.5	0.0	0.0	0.0	2.0	26.0	0.0	0.0	3.5	21.4
5	0.0	4.6	0.0	0.0	0.0	1.7	2.0	0.0	0.0	0.0	3.0	18.5
6	0.0	75.0	0.0	0.5	0.0	67.5	0.0	0.0	0.0	4.6	0.0	84.0
7	0.0	1.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0	14.0	0.0	24.0
8	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.5
9	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	41.6
10	8.0	14.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	7.4	2.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	3.0
12	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
13	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0
14	2.5	0.5	10.0	0.1	1.3	15.0	0.0	0.0	0.0	0.0	60.0	2.0
15	0.0	1.0	46.5	1.0	0.0	9.5	0.0	0.0	4.5	0.0	0.0	120.0
16	9.5	47.0	4.7	0.0	0.0	0.0	1.5	0.0	0.0	46.5	0.0	0.0
17	0.0	20.0	0.0	16.5	0.0	11.0	2.0	0.0	0.0	27.3	0.0	13.0
18	51.0	1.5	0.0	23.0	0.0	17.6	1.3	0.0	0.0	0.0	4.5	13.0
19	63.5	4.0	9.0	10.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
20	17.0	14.0	0.0	145.5	0.5	3.7	1.0	2.0	0.0	0.0	0.0	0.0
21	1.6	0.0	1.5	12.0	6.0	2.0	0.0	13.0	22.0	0.0	1.5	20.0
22	0.0	0.0	0.0	0.5	13.2	1.0	0.0	0.0	0.0	0.0	0.0	0.5
23	0.0	0.0	3.0	0.2	25.7	0.0	0.0	0.0	0.0	0.0	0.0	4.0
24	0.0	0.0	24.5	2.5	1.0	0.0	0.0	0.0	0.0	31.0	0.0	10.5
25	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	15.0	1.2	0.5
26	0.0	0.0	3.0	0.0	0.0	1.5	0.0	0.0	18.0	0.0	26.3	4.0
27	0.5	0.0	0.0	0.0	0.0	3.0	0.0	0.0	6.5	0.0	21.2	0.0
28	0.0	22.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.5	23.8	3.5
29	0.0		0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	3.8
30	1.0		0.0	0.0	0.0	3.7	8.0	0.0	0.0	0.5	0.6	1.0
31	80.0		0.0		1.5		0.0	0.0		0.5		4.0
Total	334.1	587.5	167.2	216.1	51.2	182.2	20.3	69.1	54.0	161.9	158.1	534.7
Max	80.0	180.0	58.0	145.5	25.7	67.5	8.0	26.0	22.0	46.5	60.0	133.3
Rain Days	17.0	19.0	12.0	12.0	8.0	20.0	9.0	6.0	5.0	10.0	13.0	26.0

Rainfall Data: Buena Vist 13PY

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	7.0	11.0	0.0	0.0	0.0	0.0	0.0					
2	0.0	11.0	0.0	0.0	2.0	0.0	0.0					
3	1.5	10.0	0.5	0.0	2.0	0.0	0.0					
4	0.0	14.5	12.0	0.0	1.5	0.0	0.0					
5	0.0	0.0	11.2	0.0	0.0	0.0	0.0					
6	0.0	1.5	5.0	0.0	0.0	0.0	0.0					
7	4.8	1.5	9.0	0.0	0.0	0.0	0.0					
8	52.0	5.0	32.0	30.0	0.0	0.0	0.0					
9	0.0	0.0	3.0	8.0	0.0	0.0	3.6					
10	3.5	40.0	1.0	3.0	0.0	10.0	0.0					
11	31.0	30.0	88.0	1.0	0.0	3.5	0.0					
12	14.6	0.0	22.0	5.5	0.0	0.0	0.0					
13	8.5	0.0	0.0	4.1	6.6	0.0	0.0					
14	0.0	0.0	0.0	0.0	1.0	0.0	0.0					
15	14.0	0.0	0.0	0.0	3.0	0.0	0.0					
16	0.0	0.0	1.0	5.0	0.0	0.0	0.0					
17	0.0	0.0	0.0	65.5	0.0	0.0	0.0					
18	28.0	6.5	1.5	0.0	0.0	0.0	0.0					
19	0.1	94.0	2.6	0.0	0.0	5.5	0.0					
20	0.5	5.0	9.5	0.0	0.0	3.0	0.0					
21	0.0	40.0	8.5	0.0	0.0	2.5	0.0					
22	0.0	0.0	10.0	0.0	0.0	0.0	0.0					
23	27.0	1.0	20.0	0.0	0.0	0.0	0.0					
24	1.5	0.5	32.0	0.8	0.0	0.1	0.0					
25	13.0	3.5	1.5	31.0	3.0	0.0	0.0					
26	9.0	89.2	2.0	15.0	0.0	0.0	0.0					
27	3.0	41.2	0.0	0.0	0.0	0.0	0.0					
28	1.5	1.5	0.0	14.0	0.0	0.0	0.0					
29	11.0		0.0	4.0	4.5	0.0	0.0					
30	46.0		2.5	0.0	4.0	0.0	0.0					
31	40.0		0.0		0.0		0.0					
Mean	317.5	406.9	274.8	186.9	27.6	24.6	3.6	0.0	0.0	0.0	0.0	0.0
Max	52.0	94.0	88.0	65.5	6.6	10.0	3.6	0.0	0.0	0.0	0.0	0.0
Rain Days	21.0	19.0	21.0	13.0	9.0	6.0	1.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Cetabol

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	1.6	37.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	26.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
6	11.0	0.0	0.0	0.0	2.7	0.0	9.5	0.0	0.0	0.0	37.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0
8	0.0	0.0	1.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	3.5
9	0.0	0.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	53.5	34.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	74.5	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	1.5	4.0
12	1.5	24.5	4.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.5	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	2.5	42.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0
18	0.0	0.0	4.5	5.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	5.8
19	0.0	0.0	9.5	33.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0
20	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.4
22	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	7.0
23	19.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	1.5	43.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	3.0
25	0.0	6.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
26	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	8.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	72.0	1.0	0.0	0.0
28	14.5	0.0	4.0	0.0	0.0	0.0	0.0	0.0	9.0	5.5	0.0	5.6
29	17.5		137.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
30	4.5		0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.4
31	0.5		4.0		0.0		0.0	0.0		0.0		0.0
Total	137.4	302.0	186.5	67.0	17.2	1.0	13.0	0.0	98.0	31.5	76.3	95.2
Max	53.5	74.5	137.0	33.0	14.5	1.0	9.5	0.0	72.0	24.5	37.0	32.0
Rain Days	15.0	11.0	14.0	4.0	2.0	1.0	3.0	0.0	6.0	4.0	7.0	11.0

Rainfall Data: Cetabol

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	2.4	0.6	0.0
2	0.0	51.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	0.0
3	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
4	64.6	3.0	0.0	0.0	0.0	0.0	0.0	0.0	80.4	0.0	0.0	0.0
5	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.6	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	27.6
7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.8	10.2
8	0.2	3.2	0.0	0.0	0.0	0.0	5.8	0.0	2.0	0.0	1.4	0.0
9	3.2	0.0	0.0	40.2	6.2	0.0	13.4	0.0	0.0	0.0	21.8	6.8
10	2.2	6.0	0.0	0.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	2.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.4	0.0	0.2
12	4.4	0.0	0.0	1.0	0.0	0.4	0.0	0.0	0.0	19.0	0.0	0.0
13	6.4	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	17.2	0.0	0.0	4.6	0.0	0.0	5.2	0.0	0.0	0.0	0.0
15	0.4	0.2	0.0	40.2	2.4	0.0	0.0	0.8	0.0	0.0	1.0	0.0
16	0.4	0.0	41.4	2.6	0.2	10.0	0.0	0.0	0.0	0.0	0.0	0.0
17	8.2	0.0	2.2	0.0	2.6	3.6	0.0	0.0	0.0	0.0	0.0	0.0
18	9.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	15.0	0.0
19	32.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4
20	1.0	0.2	0.0	0.0	4.0	0.0	0.0	0.4	0.0	35.6	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	10.6
22	0.0	5.8	22.4	0.0	2.2	0.0	0.0	0.0	0.8	0.0	0.0	9.2
23	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	4.8
24	0.0	12.4	0.0	3.8	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0
25	0.0	0.8	0.0	9.0	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0
26	2.6	0.0	5.8	0.6	0.0	0.6	0.0	0.0	0.0	3.2	0.0	6.6
27	2.0	0.4	0.2	0.0	0.0	0.0	0.0	39.4	0.0	0.0	0.0	0.0
28	22.8	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.4
29	0.0	3.0	0.4	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.0
30	0.4		0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	158.0	2.0
31	0.0		0.2		0.0		0.0	0.0		0.0		28.2
Total	163.2	108.4	84.0	101.0	31.4	14.6	19.2	52.8	102.4	117.4	236.2	110.0
Max	64.6	51.0	41.4	40.2	6.2	10.0	13.4	39.4	80.4	35.6	158.0	28.2
Rain Days	18.0	16.0	10.0	9.0	12.0	4.0	2.0	8.0	6.0	8.0	8.0	13.0

Rainfall Data: Cetabol

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	12.6	8.2	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	1.6	6.6
2	0.2	15.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4
3	8.2	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.0	7.6	120.0
4	0.0	0.0	0.0	0.0	0.0	14.8	0.0	0.4	0.0	0.0	0.0	31.8
5	0.0	41.4	0.0	0.0	0.0	72.0	0.0	0.0	0.0	56.4	0.0	0.0
6	0.0	0.6	0.0	0.0	0.0	26.8	0.0	0.0	0.0	1.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
8	3.4	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8
9	3.4	0.2	5.6	2.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
10	0.0	0.0	4.0	26.4	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
11	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.2	0.4	0.8	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0
13	0.6	2.8	4.2	0.0	10.2	2.4	0.0	0.0	0.0	0.0	35.4	47.2
14	0.0	0.0	1.4	0.0	0.0	3.8	0.0	0.0	48.8	0.0	0.0	49.6
15	1.6	0.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0	42.6	0.0	0.0
16	0.0	0.2	0.0	0.0	0.0	5.6	0.0	0.0	0.0	21.6	0.0	0.2
17	0.0	0.2	0.0	2.6	0.2	12.8	0.2	0.0	0.0	0.0	1.2	12.6
18	54.2	0.0	0.4	10.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
19	15.6	8.4	0.0	103.0	0.2	0.0	0.0	42.6	0.0	0.0	0.0	0.0
20	0.0	0.0	41.8	32.8	0.0	0.0	0.0	10.6	25.8	0.0	0.0	0.4
21	0.0	1.6	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
22	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	29.4	1.2	3.8	0.0	0.0	0.0	0.0	11.0	0.0	0.0
24	0.0	0.0	1.2	6.0	0.0	0.0	0.0	0.0	0.0	13.6	3.0	0.0
25	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.6
26	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
27	23.8	29.4	3.2	0.4	1.0	2.2	0.0	0.0	0.0	0.0	5.4	0.0
28	0.0	3.6	2.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	1.0	1.8
29	0.6		0.0	0.6	0.0	1.4	0.0	0.0	0.0	9.0	0.0	5.6
30	16.4		0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.8	60.8	0.0
31	15.0		0.0		0.0		4.4	0.0		23.2		0.2
Total	156.4	113.6	95.8	185.4	51.2	160.6	4.6	53.8	83.6	179.2	116.4	291.4
Max	54.2	41.4	41.8	103.0	23.0	72.0	4.4	42.6	48.8	56.4	60.8	120.0
Rain Days	15.0	15.0	12.0	11.0	8.0	18.0	2.0	4.0	5.0	9.0	9.0	15.0

Rainfall Data: Cetabol

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	1.2	0.0	0.0	0.2	0.0		-	-	-	-	-
2	0.0	0.8	0.0	0.0	1.8	0.0		-	-	-	-	-
3	0.0	3.0	0.4	0.0	1.0	0.0		-	-	-	-	-
4	0.0	0.0	0.2	0.0	0.0	0.0		-	-	-	-	-
5	0.0	0.2	0.0	0.8	0.0	0.0		-	-	-	-	-
6	2.0	0.0	0.0	0.0	0.0	0.0		-	-	-	-	-
7	4.0	1.4	8.4	1.6	0.0	0.0		-	-	-	-	-
8	0.0	3.0	3.6	0.2	0.0	0.0		-	-	-	-	-
9	1.6	9.2	0.4	0.0	0.0	0.4		-	-	-	-	-
10	2.0	3.0	19.8	0.0	0.0	9.4		-	-	-	-	-
11	6.0	0.0	29.4	0.0	0.8	0.0		-	-	-	-	-
12	6.0	0.0	0.2	0.0	1.0	0.0		-	-	-	-	-
13	0.0	0.0	0.0	0.0	10.6	0.0		-	-	-	-	-
14	0.0	0.0	0.0	0.2	2.2	0.2		-	-	-	-	-
15	0.0	0.0	2.8	21.6	0.0	0.0		-	-	-	-	-
16	0.0	0.0	4.0	8.4	0.0	0.0		-	-	-	-	-
17	3.0	0.0	1.8	0.0	0.0	0.8		-	-	-	-	-
18	0.0	1.2	0.2	0.0	0.0	2.4		-	-	-	-	-
19	0.0	6.8	0.0	0.0	0.0	0.8		-	-	-	-	-
20	0.0	13.2	6.0	0.0	0.0	0.0		-	-	-	-	-
21	0.0	2.4	1.2	0.0	0.0	0.0		-	-	-	-	-
22	37.6	0.0	2.0	0.0	0.0	0.0		-	-	-	-	-
23	0.0	0.0	1.4	0.6	0.0	0.0		-	-	-	-	-
24	0.0	0.4	0.8	5.6	0.0	0.0		-	-	-	-	-
25	0.0	1.0	21.6	3.8	0.0	0.0		-	-	-	-	-
26	0.0	23.8	0.2	0.0	0.0	0.0		-	-	-	-	-
27	0.2	24.0	1.8	8.2	0.2	0.0		-	-	-	-	-
28	38.4	3.0	2.8	0.4	2.4	0.0		-	-	-	-	-
29	13.6		0.0	0.0	1.6	0.0		-	-	-	-	-
30	14.6		0.0	0.0	0.0	0.0		-	-	-	-	-
31	6.6		2.0		0.0			-	-	-	-	-
Total	135.6	97.6	111.0	51.4	21.8	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	38.4	24.0	29.4	21.6	10.6	9.4	0.0	0.0	0.0	0.0	0.0	0.0
Rain Days	13.0	17.0	22.0	11.0	10.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Okinawa 1

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
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
2	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
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
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	30.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	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	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	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	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
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
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
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
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
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	472.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rain Days	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Okinawa I

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
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
2	0.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	0.0
4	0.0	29.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	72.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0	104.1	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0	0.0
7	0.0	11.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	54.2
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2
11	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	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	14.2	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	11.9	0.0	0.0	78.5	0.0	0.0	0.0	0.0
16	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	0.0	0.0	0.0	17.3	30.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	29.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	0.0
19	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.9	0.0	0.0
22	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	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9
25	0.0	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	7.5	14.5	0.0	0.0	0.0	0.0	0.0	61.0	0.0	0.0
27	0.0	18.2	0.0	0.0	0.0	0.0	0.0	20.0	0.0	12.0	0.0	8.5
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
29	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.0	0.0
31	0.0		0.0		0.0	0.0	0.0	0.0		0.0		20.0
Total	110.1	91.8	37.4	37.9	56.2	0.0	0.0	106.0	123.5	152.8	99.9	101.8
Max	72.5	29.5	29.9	17.3	30.3	0.0	0.0	78.5	104.1	61.0	72.0	54.2
Rain Days	5.0	6.0	2.0	3.0	4.0	0.0	0.0	3.0	3.0	5.0	3.0	5.0

Rainfall Data: Okinawa 1

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	42.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	52.0
2	30.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	12.9
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
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0
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
6	0.0	21.8	0.0	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	42.3	0.0	0.0	0.0	67.5	2.4	0.0
8	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	8.4
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	5.3	49.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.0	83.5
14	0.0	0.0	20.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	27.5	17.0	57.5	0.0
16	30.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	3.6	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0
18	1.2	0.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.0
19	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	42.0	3.3	20.4	106.1	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	2.5	0.0	0.0	0.0	12.0	14.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	20.3	0.0	5.3	0.0	1.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	16.4	0.0	7.2	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	9.5	0.0	0.0	0.0	0.0	24.0	0.0	7.8
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
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
27	0.0	20.0	0.0	8.9	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	18.5	0.0	0.0	9.4	0.0	0.0	0.0	0.0	6.1	0.0
29	0.0		0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	7.8	0.0
30	0.0		0.0	0.0	0.0	1.0	0.0	0.0	4.6	0.0	0.0	0.0
31	0.0		0.0		0.0		0.0	0.0		0.0		0.0
Total	112.3	90.7	65.5	167.4	46.2	132.7	12.5	86.6	47.1	122.5	87.8	164.6
Max	42.0	42.0	20.4	106.1	20.3	42.3	7.2	60.0	27.5	67.5	57.5	83.5
Rain Days	5.0	5.0	5.0	4.0	3.0	11.0	2.0	4.0	4.0	4.0	6.0	5.0

Rainfall Data: Okinawa 1

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	4.8	0.0	24.3	0.0							
2	0.0	0.0	0.0	0.0	3.3							
3	0.0	0.0	0.0	0.0	0.0							
4	0.0	0.0	0.0	0.0	0.0							
5	0.0	0.0	0.0	0.0	0.0							
6	0.0	0.0	0.0	0.0	0.0							
7	0.0	0.0	0.0	0.0	0.0							
8	3.3	0.0	0.0	0.0	0.0							
9	0.0	0.0	0.0	11.2	0.0							
10	0.0	35.4	0.0	0.0	0.0							
11	0.0	6.1	21.1	0.0	0.0							
12	0.0	0.0	22.2	0.0	0.0							
13	8.3	0.0	0.0	0.0	5.4							
14	0.0	0.0	0.0	0.0	0.0							
15	0.0	0.0	0.0	0.0	0.0							
16	0.0	0.0	2.3	0.0	0.0							
17	0.0	0.0	0.0	54.5	0.0							
18	0.0	0.0	0.0	0.0	0.0							
19	0.0	0.0	0.0	0.0	0.0							
20	0.0	0.0	6.5	0.0	0.0							
21	0.0	0.0	0.0	0.0	0.0							
22	0.0	36.0	0.0	0.0	0.0							
23	38.8	0.0	0.0	0.0	0.0							
24	0.0	0.0	0.0	0.0	0.0							
25	0.0	0.0	0.0	2.5	0.0							
26	0.0	0.0	30.1	0.0	0.0							
27	0.0	36.5	0.0	0.0	7.9							
28	0.0	0.0	0.0	10.5	0.0							
29	0.0		0.0	0.0	6.9							
30	7.7		0.0	0.0	3.3							
31	10.2		0.0		0.0							
Mean	68.3	118.8	82.2	103.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	38.8	36.5	30.1	54.5	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rain Days	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Puerto Paillas

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	6.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	5.4	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	29.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	5.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0
9	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
10	12.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	5.0	24.0	0.0	7.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	6.3	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	11.0
14	5.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	5.0	8.0
15	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	21.0	2.4	0.0	0.0	0.0	7.0	2.0	0.0	0.0	0.0	0.0
17	0.0	0.0	5.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	7.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	11.0	0.0	7.0	0.0	0.0	5.0	11.0	0.0	0.0
20	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	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	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	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0
28	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0
29	9.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	11.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0		0.0		0.0		9.0	0.0		0.0		0.0
Total	58.4	151.3	50.4	60.4	33.0	16.0	20.0	2.0	11.0	20.5	35.0	40.0
Max	12.0	29.0	24.0	21.3	11.0	7.0	9.0	2.0	6.0	11.0	11.0	16.0
Rain Days	8.0	12.0	5.0	6.0	4.0	3.0	3.0	1.0	2.0	2.0	4.0	4.0

Rainfall Data: Puerto Paillas

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0
2	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	10.0	0.0	13.0	7.4
3	0.0	16.0	0.0	0.0	0.0	8.0	0.0	0.0	9.0	0.0	12.0	0.0
4	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	38.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0
6	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	5.4	0.0	0.0
7	0.0	0.0	0.0	11.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	10.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	23.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
10	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	9.0	19.0	0.0	8.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0
12	4.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0
13	23.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	14.0	13.0	0.0
14	14.0	0.0	16.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	8.0	0.0
15	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	7.8	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	12.0	8.0	8.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	9.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	11.0	0.0
19	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	27.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0
21	12.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	26.0	0.0	24.0
22	0.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0
23	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	20.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	0.0	12.0	0.0
25	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	17.0	0.0	0.0
26	0.0	0.0	5.0	0.0	0.0	0.0	0.0	7.0	0.0	16.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	0.0	10.0	0.0	0.0
28	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	18.0		0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0		0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	23.0	26.5
31	0.0		0.0		7.0		0.0	0.0		8.0		19.8
Total	189.8	61.0	41.0	56.0	77.0	19.0	11.0	37.0	73.3	109.4	130.0	156.2
Max	38.0	19.0	16.0	25.0	13.0	8.0	7.0	12.0	18.0	26.0	23.0	26.5
Rain Days	12.0	4.0	5.0	5.0	9.0	3.0	2.0	4.0	6.0	8.0	10.0	9.0

Rainfall Data: Puerto Paillas

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	10.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	27.0
2	8.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	43.6
3	0.0	6.0	0.0	0.0	0.0	0.0	7.0	17.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	11.5	21.7
5	0.0	0.0	0.0	13.0	0.0	17.0	0.0	0.0	0.0	0.0	0.0	39.0
6	0.0	17.0	0.0	8.0	0.0	21.0	0.0	0.0	0.0	32.0	0.0	18.4
7	0.0	19.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	7.0	0.0	0.0
8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	9.0
11	0.0	0.0	0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5
12	0.0	18.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	11.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0
14	6.0	0.0	0.0	0.0	6.0	11.0	0.0	0.0	0.0	0.0	78.0	41.0
15	6.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	6.5	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0	0.0	0.0
17	17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.7	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0
20	13.0	27.0	0.0	16.0	0.0	0.0	5.0	22.0	0.0	0.0	0.0	0.0
21	10.0	16.0	0.0	0.0	0.0	0.0	0.0	17.0	36.0	4.3	0.0	0.0
22	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	11.0	0.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
24	0.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.6	0.0	14.0	0.0
27	0.0	21.0	0.0	0.0	0.0	11.0	0.0	0.0	27.4	0.0	8.7	0.0
28	0.0	13.0	18.0	0.0	7.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
29	12.0		0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0
30	2.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	0.0	0.0
31	8.0		9.0		0.0		0.0	0.0		8.6		0.0
Total	98.0	185.0	78.0	70.0	44.0	104.0	20.0	61.0	117.5	122.0	189.2	238.6
Max	17.0	27.0	27.0	19.0	12.0	21.0	8.0	22.0	43.6	36.0	78.0	43.6
Rain Days	11.0	12.0	5.0	5.0	5.0	8.0	3.0	4.0	5.0	7.0	8.0	10.0

Rainfall Data: Puerto Paillas

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	11.0								
2	0.0	0.0	0.0	0.0								
3	0.0	0.0	11.0	0.0								
4	0.0	0.0	7.0	0.0								
5	0.0	0.0	0.0	0.0								
6	0.0	0.0	0.0	0.0								
7	27.0	0.0	0.0	0.0								
8	31.0	0.0	0.0	0.0								
9	0.0	0.0	0.0	13.0								
10	0.0	0.0	0.0	9.0								
11	0.0	0.0	16.0	0.0								
12	19.6	0.0	45.0	0.0								
13	11.0	0.0	0.0	0.0								
14	0.0	0.0	9.8	0.0								
15	0.0	0.0	12.0	0.0								
16	0.0	0.0	8.0	21.0								
17	0.0	0.0	5.0	14.0								
18	12.4	0.0	0.0	0.0								
19	0.0	0.0	7.0	0.0								
20	0.0	0.0	0.0	0.0								
21	0.0	0.0	0.0	0.0								
22	0.0	0.0	0.0	0.0								
23	0.0	0.0	17.0	0.0								
24	0.0	0.0	9.0	9.0								
25	0.0	0.0	16.0	17.0								
26	7.0	0.0	38.0	14.0								
27	0.0	0.0	9.0	0.0								
28	0.0	0.0	0.0	12.0								
29	14.0		0.0	4.0								
30	18.6		0.0	0.0								
31	13.0		0.0									
Mean	153.6	0.0	209.8	124.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	31.0	0.0	45.0	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rain Days	9.0	0.0	14.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Saavedra 61NP

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.1	51.5	7.3	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.7
2	0.0	9.3	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	0.3	0.0	0.0	0.0	0.1
4	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
5	13.3	0.0	0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	10.9
6	5.8	0.0	0.1	2.2	28.6	0.0	10.4	0.0	0.0	0.0	35.7	0.0
7	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.4
8	0.0	0.0	4.5	4.6	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
9	42.9	0.1	0.0	36.8	0.0	0.0	0.0	0.0	0.0	0.0	37.4	0.0
10	0.0	41.7	0.0	8.5	0.0	1.2	0.0	0.0	0.0	0.0	7.6	0.0
11	3.0	107.3	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.7	22.0
12	5.2	35.8	8.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0
13	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.4	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	5.6	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	2.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.0
17	0.0	43.6	0.1	8.7	0.0	0.0	0.0	0.0	0.0	0.1	42.1	0.0
18	0.0	0.0	4.2	1.6	0.0	0.0	0.5	0.0	4.9	0.7	0.0	0.0
19	0.0	0.0	0.0	33.8	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0
20	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
21	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.7	46.8
22	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.6	44.6
23	21.1	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
24	10.2	12.2	22.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
25	0.0	3.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
26	0.1	3.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
27	24.5	27.5	1.2	0.0	0.0	0.0	0.0	0.0	31.9	0.7	9.8	0.0
28	36.5	0.2	0.5	0.0	0.0	0.0	0.0	0.0	21.7	12.2	0.0	1.5
29	25.0		20.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	2.9
30	10.0		0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	4.6
31	3.7		5.3		0.0		0.0	0.0		0.0		0.0
Total	472.0	362.8	83.5	97.5	29.9	2.6	13.9	0.3	79.5	53.6	164.8	161.4
Max	42.9	107.3	22.9	36.8	28.6	1.4	10.4	0.3	31.9	38.4	42.1	46.8
Rain Days	17.0	18.0	15.0	9.0	3.0	2.0	4.0	1.0	6.0	9.0	11.0	14.0

Rainfall Data: Saavedra 61NP

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	44.0	1.9	0.0
2	0.0	0.7	1.8	0.0	0.0	0.0	0.0	0.0	0.0	3.2	72.7	0.0
3	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.1	24.2
4	136.9	5.0	0.0	0.0	0.0	0.0	0.0	0.0	107.6	0.0	0.0	0.0
5	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	6.1	16.7	0.0	0.0
6	0.2	0.0	0.0	0.2	0.0	0.0	0.0	3.1	0.1	0.0	0.0	38.5
7	0.0	0.3	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	41.7	23.2
8	0.3	0.0	0.0	0.0	0.0	0.0	5.8	0.0	4.0	0.0	0.6	0.1
9	1.1	0.0	0.0	52.3	0.0	0.0	15.8	0.0	0.0	0.0	8.1	1.4
10	6.7	0.0	0.0	1.8	8.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1
11	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5	0.0	1.3
12	2.8	0.0	0.0	4.2	0.0	0.3	0.0	0.0	0.0	42.6	0.0	0.0
13	2.9	0.0	24.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0
14	0.0	0.0	0.0	0.0	16.2	0.0	0.0	49.5	0.0	0.0	0.1	0.0
15	23.3	0.3	0.2	8.0	4.9	0.0	0.0	3.3	0.0	0.0	0.0	0.0
16	0.0	0.0	39.2	34.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.7	0.0	1.2	0.0	13.4	3.7	0.0	0.0	0.0	0.0	0.1	0.0
18	7.3	0.0	0.0	0.0	2.4	3.2	0.0	0.0	0.0	0.0	5.8	4.9
19	0.5	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.3	0.0	0.9	0.0
20	15.6	0.0	0.0	0.0	5.0	0.0	0.0	14.7	0.0	51.7	0.0	0.0
21	2.1	0.0	0.7	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
22	0.0	0.0	7.5	0.0	1.6	0.0	0.0	0.0	2.0	0.0	0.0	15.7
23	9.1	0.0	0.0	2.8	0.0	0.0	0.0	0.0	36.2	0.0	0.0	1.9
24	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	13.0	0.0	2.2
25	0.0	0.5	0.0	3.8	0.0	0.0	0.0	0.0	0.0	26.5	0.0	0.0
26	0.0	0.8	3.8	0.0	0.0	1.3	0.0	11.3	0.0	5.9	0.0	11.4
27	6.3	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	16.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
29	0.0	4.3	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	36.6	13.3
30	0.4		0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	49.5	18.3
31	0.0		0.0		0.5		0.0	0.0		0.0		14.5
Total	235.8	17.9	82.2	107.8	56.5	8.5	21.6	90.0	162.9	219.4	220.3	176.9
Max	136.9	5.0	39.2	52.3	16.2	3.7	15.8	49.5	107.6	51.7	72.7	38.5
Rain Days	19.0	11.0	10.0	9.0	12.0	4.0	2.0	7.0	9.0	11.0	13.0	16.0

Rainfall Data: Saavedra 61NP

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	64.4	20.2	0.0	0.0	0.1	1.6	0.0	0.5	0.0	0.0	2.1	19.5
2	0.1	19.5	0.1	0.0	0.0	11.5	0.0	0.3	0.0	0.0	0.1	1.0
3	0.0	3.4	0.0	0.1	0.0	2.2	0.0	0.3	0.0	0.0	30.1	70.4
4	0.0	1.2	0.0	1.8	0.0	14.7	0.0	0.4	0.0	0.0	0.0	48.5
5	0.0	46.4	0.0	0.0	0.0	82.7	0.0	0.0	0.0	39.1	0.0	1.4
6	0.0	0.3	0.0	0.0	0.1	31.8	0.0	0.0	0.0	0.7	0.0	0.0
7	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	3.4	2.7	1.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	17.0
9	0.2	2.4	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	2.5	0.0	3.7	47.3	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0
11	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
12	1.8	0.0	0.2	0.0	0.2	2.9	0.0	0.0	0.0	0.0	0.0	0.4
13	0.0	0.0	15.3	0.0	13.0	3.1	0.0	0.0	0.0	8.1	43.9	45.6
14	0.0	4.2	0.1	0.0	0.0	3.2	0.0	0.0	41.1	0.0	0.0	61.0
15	3.0	9.3	7.3	1.1	0.0	0.7	0.0	0.0	0.1	56.6	0.0	0.3
16	0.3	2.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	36.2	0.0	0.0
17	0.1	1.6	4.3	0.3	0.0	16.3	0.0	0.3	0.0	0.0	0.8	2.2
18	12.1	0.0	57.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	19.5	2.2	0.0	210.4	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0
20	2.3	0.0	2.3	23.1	0.0	0.0	0.0	44.8	28.1	0.0	0.0	0.2
21	0.0	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1
22	0.0	0.0	0.5	0.1	31.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	16.7	2.9	7.5	0.0	0.0	0.0	0.0	20.0	0.0	0.0
24	0.0	0.0	6.3	3.5	0.0	0.0	0.0	0.0	0.0	12.2	6.5	0.0
25	0.0	0.0	0.1	1.1	0.0	1.5	0.0	0.0	0.6	0.0	1.6	8.2
26	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.1	0.0	0.0	1.4	0.0
27	23.5	18.2	0.1	0.0	0.2	0.8	0.0	0.1	0.0	0.0	10.5	0.0
28	6.4	1.8	0.0	0.0	0.0	16.7	0.0	0.1	0.0	0.0	0.8	0.8
29	0.0		0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.2	0.0	1.6
30	16.1		0.0	0.0	0.1	0.0	0.0	6.6	19.5	4.1	145.5	0.0
31	24.3		0.0		0.0		6.2	0.0		37.8		0.0
Total	189.7	136.9	145.9	291.9	64.2	200.2	6.2	69.7	89.4	215.0	243.5	278.2
Max	64.4	46.4	57.6	210.4	31.2	82.7	6.2	44.8	41.1	56.6	145.5	70.4
Rain Days	18.0	16.0	16.0	12.0	11.0	19.0	1.0	11.0	5.0	10.0	12.0	16.0

Rainfall Data: Saavedra 61NP

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.9	0.0	0.0	0.5	0.0	0.0					
2	0.0	0.4	0.0	0.0	1.5	0.0	0.0					
3	0.0	4.1	36.8	0.0	2.1	0.0	0.0					
4	0.1	2.7	0.3	0.0	0.0	0.0	0.0					
5	0.0	6.4	0.0	0.0	0.0	0.0	0.0					
6	13.4	0.0	0.6	0.0	0.0	0.0	0.0					
7	1.1	2.6	0.9	1.0	0.0	0.0	0.0					
8	0.0	0.0	0.0	4.6	0.0	0.0	1.8					
9	5.4	22.5	0.0	5.1	0.0	1.3	0.0					
10	5.2	13.4	6.3	0.0	0.0	10.0	0.0					
11	2.3	0.0	18.6	0.0	0.4	0.0	0.0					
12	18.4	0.0	0.0	0.0	3.1	0.0	0.0					
13	0.0	0.0	0.0	0.0	0.1	0.0	0.0					
14	0.2	0.0	0.0	0.0	6.5	0.0	0.0					
15	0.0	0.0	0.0	0.8	0.0	0.0	0.0					
16	0.0	0.0	0.1	25.0	0.0	0.0	0.0					
17	21.1	0.0	0.3	0.0	0.0	0.0	0.0					
18	0.0	7.7	0.0	0.0	0.0	4.5	0.1					
19	0.0	42.9	3.1	0.0	0.2	1.8	0.0					
20	0.4	5.5	0.0	0.0	0.1	0.1	0.0					
21	0.0	4.5	0.0	0.0	0.0	0.0	0.0					
22	73.5	0.0	3.5	0.0	0.0	0.1	0.0					
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
24	2.1	3.6	0.0	5.8	0.0	0.0	0.0					
25	3.1	19.1	0.0	8.1	0.1	0.0	0.0					
26	3.1	6.4	0.0	0.1	1.9	0.0	0.0					
27	0.0	17.4	0.2	7.4	1.3	0.0	0.0					
28	21.1	0.6	0.3	2.6	1.5	0.0	0.0					
29	3.3		0.0	0.0	4.1	0.0	0.0					
30	20.7		0.0	0.0	0.0	0.0	0.0					
31	3.7		0.0		0.0		0.9					
Mean	198.2	160.7	71.0	60.5	23.4	17.8	2.8	0.0	0.0	0.0	0.0	0.0
Max	73.5	42.9	36.8	25.0	6.5	10.0	1.8	0.0	0.0	0.0	0.0	0.0
Rain Days	18.0	17.0	12.0	10.0	14.0	6.0	3.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: San Juan de Yapacani

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1		0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2		1.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1
3		1.4	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0
4		30.1	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	22.4
6		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0
7		0.0	0.9	10.6	24.8	0.0	27.0	0.0	0.0	0.0	0.0	0.0
8		0.0	34.2	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.0	38.0
9		0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10		0.0	0.0	184.2	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
11		100.0	0.0	0.0	0.0	1.6	2.1	0.0	0.0	0.0	20.0	0.0
12		48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.1	0.0	8.4
13		0.0	0.3	0.0	0.0	1.3	0.0	0.0	0.0	9.5	0.0	0.0
14		0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15		0.0	0.4	0.0	0.0	0.0	0.0	18.7	0.0	0.0	0.0	0.0
16		0.0	3.5	0.0	0.0	0.0	20.4	18.1	0.0	0.0	0.0	0.0
17		11.4	0.0	0.0	0.0	2.2	1.0	0.0	0.0	2.1	0.0	0.0
18		11.6	0.0	8.0	0.0	2.0	0.0	0.0	0.0	0.0	14.2	0.0
19		0.0	0.0	7.3	0.0	0.0	0.0	0.0	30.5	13.0	0.0	0.0
20		0.0	1.6	23.5	0.0	0.0	0.0	0.0	0.0	18.0	0.0	0.0
21		6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22		0.8	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	24.3
23		15.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	0.0
24		7.4	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25		0.2	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26		0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	77.5	0.0
27		5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28		13.5	16.0	0.0	0.0	0.0	0.3	0.0	54.4	0.0	0.0	1.1
29			45.7	0.0	0.0	0.0	0.0	0.0	0.1	4.2	0.0	1.1
30			0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.4
31			1.2		0.0		0.0	0.0		0.0		
Total	472.0	253.5	139.5	246.2	30.0	7.3	56.4	51.9	85.7	51.0	141.9	96.8
Max	0.0	100.0	45.7	184.2	24.8	2.2	27.0	18.7	54.4	18.0	77.5	38.0
Rain Days	0.0	15.0	14.0	8.0	2.0	5.0	7.0	4.0	5.0	7.0	6.0	8.0

Rainfall Data: San Juan de Yapacani

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0
2	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	29.0	0.0
3	0.0	125.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.0	0.0
4	1.4	54.0	0.0	1.1	0.0	0.4	0.0	0.0	18.3	0.0	0.0	0.0
5	114.4	6.0	0.0	3.2	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.2
6	0.0	52.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
7	0.0	4.4	0.0	33.0	0.0	0.0	0.0	7.3	0.0	0.0	1.3	105.0
8	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0
9	1.2	0.3	0.0	0.0	0.0	0.0	17.4	0.0	10.0	0.0	0.0	0.0
10	3.4	0.0	6.1	112.4	16.0	0.0	0.0	0.0	0.0	0.0	21.0	1.0
11	2.0	29.2	0.0	0.0	0.0	0.0	3.2	0.0	0.0	3.0	0.0	4.2
12	7.1	0.0	2.1	0.3	0.0	0.0	0.0	0.0	0.0	85.0	0.0	2.4
13	52.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
14	0.0	0.0	91.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
15	0.0	0.0	0.0	0.0	16.3	0.0	0.0	6.2	0.0	0.0	0.0	0.0
16	0.3	6.0	0.0	66.0	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0
17	0.3	9.0	43.4	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.2	0.0	0.0	0.0	14.2	35.0	0.0	0.0	0.0	0.0	0.0	15.0
19	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	5.0	1.4
20	63.0	5.2	0.0	0.0	11.0	0.0	0.0	0.0	0.0	31.0	0.0	0.0
21	40.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.0	18.0
22	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0
23	2.1	1.0	0.0	0.0	0.4	0.0	0.0	0.0	41.3	0.0	0.0	0.0
24	7.3	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.4	0.0	0.0
26	0.2	2.3	0.3	42.3	0.0	5.3	0.0	49.1	0.0	1.0	0.0	0.0
27	0.0	5.4	23.1	0.0	0.0	12.4	0.0	13.2	0.0	0.0	0.0	11.2
28	21.4	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
29	0.0	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.0
30	0.2		4.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	42.0	101.3
31	3.3		0.3		0.0		0.0	0.0		0.2		11.2
Total	319.8	345.8	180.0	258.6	66.2	55.5	20.6	98.8	108.6	214.1	263.3	373.1
Max	114.4	125.0	91.0	112.4	16.3	35.0	17.4	49.1	41.3	85.4	64.0	105.0
Rain Days	18.0	21.0	10.0	8.0	6.0	5.0	2.0	5.0	4.0	9.0	10.0	15.0

Rainfall Data: San Juan de Yapacani

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	62.0	80.0	21.0	0.0	0.0	0.0	0.0	0.0	8.0	17.0	8.0	124.0
2	3.0	187.2	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0	0.0	0.0
3	0.0	8.4	0.0	0.0	6.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	5.0	0.0	0.0	0.0	38.0	0.0	0.0	0.0	47.0
5	0.0	38.0	0.0	0.0	0.0	21.0	6.0	0.0	0.0	0.0	0.0	47.0
6	0.0	73.0	0.0	0.0	0.0	73.0	0.0	0.0	0.0	32.0	0.0	39.0
7	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	24.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0
9	0.0	25.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.0
10	6.1	10.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
12	0.0	14.0	0.2	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	1.0
13	2.0	8.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	25.4	0.0
14	0.0	0.1	6.0	2.0	0.0	8.0	0.0	0.0	0.0	14.0	0.0	93.0
15	5.0	6.0	57.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
16	4.2	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0	0.0
17	8.2	18.0	0.0	29.0	0.0	30.0	0.0	0.0	0.0	9.0	0.0	14.0
18	0.0	0.0	9.0	24.0	.3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	98.0	1.0	2.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	2.2	9.0	0.0	125.0	0.0	0.0	0.0	41.0	0.0	0.0	0.0	10.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	2.0
22	0.0	0.0	0.0	0.0	31.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	16.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
24	0.0	0.0	21.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	3.0	0.0
25	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	7.0	4.0	3.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	30.0	0.0
27	0.0	5.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	25.0	0.0
28	2.4	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	18.0	3.0
29	0.0		0.0	0.0	0.0	10.0	10.0	0.0	0.0	0.0	0.0	1.0
30	34.1		0.0	0.0	0.0	0.0	5.0	0.0	0.0	18.0	7.0	9.0
31	22.0		0.0		0.0			0.0		0.0		0.0
Total	273.3	488.7	146.2	213.0	45.0	172.8	25.0	107.0	82.0	188.0	120.4	481.0
Max	98.0	187.2	57.0	125.0	31.0	73.0	10.0	41.0	50.0	50.0	30.0	124.0
Rain Days	13.0	16.0	10.0	8.0	4.0	10.0	4.0	3.0	3.0	8.0	8.0	17.0

Rainfall Data: San Juan de Yapacani

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	30.0	0.0	0.0	0.0	0.0	0.2					
2	16.0	7.0	0.0	0.0	0.8	0.0	0.0					
3	0.0	0.0	19.0	0.0	2.4	0.0	0.0					
4	0.0	0.0	24.0	0.0	0.2	0.0	0.0					
5	0.0	10.0	2.0	0.0	0.0	0.0	0.0					
6	16.0	7.0	0.0	0.0	0.0	0.2	0.0					
7	63.0	0.0	10.6	27.6	0.0	0.0	0.0					
8	3.0	11.0	41.4	5.4	0.0	0.0	0.8					
9	0.0	3.0	0.0	4.6	0.0	9.0	3.4					
10	10.0	41.0	18.0	0.0	0.0	14.2	0.0					
11	25.0	0.0	35.0	0.6	0.0	0.2	0.0					
12	12.0	0.0	0.0	4.0	0.4	0.0	0.0					
13	8.0	0.0	0.0	0.0	4.0	0.0	0.0					
14	0.0	0.0	0.0	0.0	1.4	0.0	0.0					
15	0.0	0.0	0.0	0.0	0.2	0.2	0.0					
16	0.0	0.0	0.0	93.6	0.0	0.0	0.0					
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
18	35.0	0.0	0.0	0.0	0.0	3.0	0.0					
19	0.0	45.0	3.0	0.0	0.0	2.0	0.0					
20	0.0	19.0	2.6	0.0	0.0	1.6	0.0					
21	0.0	54.0	11.2	0.0	0.0	0.0	0.0					
22	0.0	0.0	5.6	0.0	0.0	0.0	0.0					
23	70.0	0.0	5.0	0.0	0.0	0.2	0.0					
24	13.0	0.0	7.4	33.8	0.0	0.0	0.0					
25	7.0	0.0	1.2	12.6	0.0	0.0	0.0					
26	0.0	130.0	0.0	18.8	0.0	0.0	0.0					
27	0.0	8.0	0.0	0.6	0.0	0.0	0.0					
28	8.0	5.0	0.0	10.8	0.0	0.0	0.0					
29	3.0		0.0	0.0	1.0	0.0	0.0					
30	80.0		0.0	0.0	0.0	0.0	0.0					
31	28.0		0.0		0.0		0.0					
Mean	397.0	370.0	186.0	212.4	10.4	30.6	4.4	0.0	0.0	0.0	0.0	0.0
Max	80.0	130.0	41.4	93.6	4.0	14.2	3.4	0.0	0.0	0.0	0.0	0.0
Rain Days	16.0	13.0	14.0	11.0	8.0	9.0	3.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Sta Cruz-Trompill 5806

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	1.6	22.6	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
2	2.7	3.9	0.0	0.0	1.5	0.0	0.0	.0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
5	10.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.2
6	1.3	0.0	0.0	4.8	0.0	0.0	4.5	0.0	0.0	0.0	1.0	0.0
7	0.0	0.0	0.0	1.0	0.0	0.0	26.4	0.0	0.3	0.4	0.0	26.7
8	0.0	0.0	7.8	5.1	0.0	0.0	2.4	0.0	0.0	0.0	0.0	5.4
9	0.6	0.0	0.0	24.2	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0
10	0.1	6.6	0.0	4.3	0.0	1.0	0.0	0.0	0.0	0.0	0.3	20.0
11	15.3	16.8	0.0	0.0	0.0	2.3	0.0	0.0	4.0	0.0	4.0	15.4
12	42.1	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
13	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	2.7	0.0	1.0	0.0	0.0	6.4	0.0	0.0	5.7	0.0
16	0.2	0.9	0.0	0.0	1.8	0.0	2.0	1.0	0.0	0.0	4.0	0.0
17	1.0	16.6	0.0	16.0	0.0	7.5	0.5	0.0	0.0	0.0	19.2	0.0
18	0.8	1.7	0.0	22.1	0.0	0.0	0.2	0.0	6.2	0.0	0.0	0.0
19	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	4.0	5.8	0.0	0.0
20	0.0	0.0	1.8	1.1	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0
21	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.7	32.6
22	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	4.0
23	0.0	17.2	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.1	1.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	1.4	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
26	1.6	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
27	1.1	1.8	3.3	0.0	0.0	0.0	0.0	0.0	31.0	0.0	0.1	0.0
28	26.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.6	1.8	0.0	0.3
29	27.8		30.5	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.4
30	8.7		0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
31	2.4		0.7		0.0		0.9	0.0		0.0		0.0
Total	154.9	109.8	65.8	89.8	11.4	10.8	38.6	19.0	46.1	62.8	41.1	119.2
Max	42.1	22.6	30.5	24.2	7.0	7.5	26.4	11.6	31.0	38.0	19.2	32.6
Rain Days	19.0	14.0	11.0	9.0	5.0	3.0	9.0	3.0	6.0	7.0	12.0	12.0

Rainfall Data: Sta Cruz-Trompi 5806

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
2	0.0	22.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7	0.0
3	5.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0
4	17.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0
5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
6	0.0	3.7	0.0	12.3	0.0	0.0	0.0	22.3	0.0	0.0	0.0	70.5
7	0.0	2.6	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	9.4	33.0
8	0.1	7.0	0.0	0.0	0.0	0.0	12.4	0.0	1.2	0.0	19.5	0.0
9	1.0	0.0	0.0	49.2	20.0	0.0	10.0	0.0	0.0	0.0	0.0	3.8
10	6.3	12.2	0.0	1.7	14.6	0.0	0.0	0.0	0.0	0.0	0.0	2.3
11	3.6	0.7	2.4	0.0	0.0	0.0	0.0	0.0	0.0	40.4	0.0	1.6
12	13.1	0.0	3.9	0.1	0.0	0.0	0.0	0.0	0.0	22.3	0.0	0.0
13	26.0	0.0	140.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0
14	29.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	1.0	43.6	0.2	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.7	0.0	15.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
17	18.5	1.4	1.3	0.0	2.8	17.4	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0
19	23.8	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	4.7	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	57.5	0.0	0.0
21	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	1.3	0.2	0.0	4.4	0.0	0.0	0.0	16.0	0.0	0.0	69.7
23	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	21.5	0.0	0.0	1.8
24	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0
25	0.0	2.7	0.0	13.1	0.0	0.0	0.0	9.6	0.0	2.1	0.0	0.0
26	0.2	0.0	0.5	11.6	0.0	11.2	0.0	5.9	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.0	0.0	0.0	0.0	0.0
28	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
29	0.0	14.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.2
30	0.0		0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	42.5	10.0
31	0.0		0.0		0.3		0.0	0.0		0.0		0.0
Total	150.3	120.1	168.8	96.9	44.4	33.2	22.4	40.4	48.4	163.3	172.7	225.2
Max	29.2	43.6	140.2	49.2	20.0	17.4	12.4	22.3	21.5	57.5	91.7	70.5
Rain Days	17.0	15.0	13.0	8.0	10.0	4.0	2.0	5.0	6.0	6.0	6.0	11.0

Rainfall Data: Sta Cruz-Trompill 5806

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	18.6	28.8	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	1.6	1.4
2	1.0	51.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.2
3	0.0	2.8	0.0	0.0	0.0	0.0	0.4	7.7	0.0	0.0	1.4	1.4
4	0.0	0.3	0.0	5.1	0.0	2.6	1.8	0.1	0.0	0.0	0.9	49.6
5	0.0	31.9	0.0	0.0	0.0	4.0	0.0	0.0	0.0	16.7	0.0	86.0
6	0.0	2.7	0.0	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0
7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	4.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0
9	1.2	1.1	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.1	1.8	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7
11	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	1.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	2.8	0.0
13	0.0	31.6	5.6	0.0	1.6	20.0	0.0	0.0	0.0	0.0	57.9	25.8
14	0.0	0.1	1.8	0.0	1.0	1.5	0.0	0.0	3.9	0.0	0.0	21.1
15	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	80.4	0.0	0.0
16	40.0	1.1	4.8	2.1	0.0	5.9	1.8	0.0	0.0	26.1	0.0	0.0
17	0.3	0.0	0.0	10.4	0.0	33.0	6.4	0.0	0.0	0.3	0.0	0.5
18	7.3	0.8	4.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
19	15.6	2.8	0.0	30.4	0.1	0.0	0.0	9.6	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	6.1	0.0	0.3	0.0	3.3	21.8	0.0	0.0	4.3
21	0.0	0.0	0.0	1.2	23.6	0.0	0.0	0.0	0.0	0.0	0.0	2.7
22	0.0	0.0	0.4	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	75.0	1.8	0.0	0.0	0.0	0.0	0.0	28.2	0.0	4.4
24	0.0	0.0	8.4	0.4	0.0	0.0	0.0	0.0	0.0	14.1	0.2	0.6
25	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	24.0	0.0	4.2	0.0
26	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	3.0	0.0	12.2	0.0
27	4.7	5.8	0.0	0.0	0.3	6.0	0.0	0.0	0.0	0.0	8.2	1.7
28	0.0	35.8	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0		0.0	0.0	0.0	2.3	0.4	0.0	0.0	2.3	0.0	0.0
30	50.6		0.0	0.0	0.0	0.0	0.0	4.7	4.0	5.5	42.8	0.1
31	18.1		0.0		1.0		0.0	0.0		11.3		0.0
Total	157.6	201.0	107.2	88.4	36.6	103.8	10.8	25.6	56.7	184.9	132.2	239.5
Max	50.6	51.2	75.0	30.4	23.6	33.0	6.4	9.6	24.0	80.4	57.9	86.0
Rain Days	11.0	16.0	11.0	11.0	9.0	15.0	5.0	6.0	5.0	9.0	10.0	16.0

Rainfall Data: Sta Cruz-Trompil 5806

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	1.2	12.0	0.0	0.0	1.4	0.0	0.0					
2	1.0	8.3	14.6	0.0	3.3	0.0	0.0					
3	0.0	0.6	2.9	0.0	7.2	0.0	0.0					
4	0.0	0.1	0.1	0.0	0.0	0.0	0.0					
5	0.0	1.9	2.3	0.0	0.0	0.0	0.0					
6	43.0	0.1	0.1	0.0	0.0	0.0	0.0					
7	16.4	1.6	1.3	4.7	0.0	0.0	1.5					
8	0.0	0.1	0.0	3.3	0.0	0.0	6.5					
9	0.0	58.2	0.0	2.0	0.0	0.1	1.5					
10	0.0	9.8	27.6	0.2	0.0	3.8	0.0					
11	2.5	0.0	12.4	0.0	0.0	0.0	0.0					
12	4.6	0.0	0.1	7.0	1.4	0.0	0.0					
13	11.4	0.0	0.3	0.0	2.8	0.0	0.0					
14	0.0	0.0	0.1	0.0	5.8	0.0	0.0					
15	0.4	0.0	0.3	5.1	0.0	0.0	0.0					
16	0.0	0.1	0.3	36.6	0.0	0.0	0.0					
17	0.0	4.1	0.3	0.0	0.0	0.0	0.0					
18	24.6	47.8	0.0	0.0	0.0	2.3	0.0					
19	0.0	45.8	0.1	0.0	0.0	0.7	0.0					
20	0.0	0.9	1.7	0.0	0.0	1.0	0.0					
21	0.0	1.4	9.1	0.0	0.0	0.0	0.0					
22	0.0	2.5	15.1	0.0	0.0	0.0	0.0					
23	4.0	1.0	1.2	1.6	0.0	0.2	0.0					
24	0.0	17.3	6.4	9.2	0.0	0.0	0.0					
25	5.7	44.6	7.2	4.2	5.6	0.0	0.0					
26	0.4	0.3	0.0	0.0	0.4	0.0	0.0					
27	0.4	0.0	0.0	20.7	0.0	0.0	0.0					
28	2.8	0.0	0.0	2.9	2.4	0.0	0.0					
29	20.0		0.0	0.0	3.5	0.0	0.0					
30	31.8		0.0	0.0	0.0	0.0	0.0					
31	7.5		0.0		0.0		0.0					
Mean	177.7	258.5	103.5	97.5	33.8	8.1	9.5	0.0	0.0	0.0	0.0	0.0
Max	43.0	58.2	27.6	36.6	7.2	3.8	6.5	0.0	0.0	0.0	0.0	0.0
Rain Days	17.0	21.0	21.0	12.0	10.0	6.0	3.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Sta Cruz-Universidad 5807

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	4.1	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.7	32.9	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	3.0
3	1.4	4.9	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
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
6	14.2	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0	0.0	0.0	7.9
7	0.3	0.0	0.0	12.1	0.0	0.0	20.0	0.0	0.0	0.0	0.3	0.0
8	0.0	0.0	0.0	2.9	0.0	0.0	4.3	0.0	0.0	0.0	0.0	31.4
9	0.0	0.0	8.1	7.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.7
10	2.9	0.0	0.0	48.2	0.0	0.0	0.0	0.0	0.0	0.9	0.4	0.0
11	0.5	6.9	0.0	9.2	0.0	0.4	0.0	0.0	3.2	0.0	1.1	8.6
12	36.6	22.9	0.0	0.0	0.0	1.0	0.0	0.0	3.2	0.0	0.3	7.7
13	40.6	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.7	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.7	0.0	1.3	10.8	0.0	0.0	0.2	0.0
17	0.5	1.6	2.2	0.0	1.8	0.0	0.7	0.7	0.0	0.3	5.8	0.0
18	1.4	11.0	0.0	16.2	0.0	10.2	0.0	0.0	0.0	0.0	26.9	0.0
19	2.4	2.0	0.0	28.1	0.0	0.0	0.0	0.0	16.9	11.1	0.0	0.0
20	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	9.6	5.2	0.0	0.0
21	0.0	0.0	12.8	0.8	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
22	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	42.1
23	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	2.0
24	0.0	16.1	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
25	0.2	4.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
26	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
27	3.8	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	1.0	4.4	2.1	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.4	0.0
29	19.8		1.5	0.0	0.0	0.0	0.0	0.0	0.1	2.8	0.0	0.0
30	56.0		31.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
31	18.2		0.0		0.0		2.4	0.0		0.0		0.1
Total	472.0	136.5	74.0	133.9	8.3	11.8	38.2	11.6	77.2	75.6	43.4	105.8
Max	56.0	32.9	31.3	48.2	3.6	10.2	20.0	10.8	44.2	53.7	26.9	42.1
Rain Days	19.0	15.0	9.0	10.0	4.0	4.0	6.0	3.0	6.0	7.0	12.0	12.0

Rainfall Data: Sta Cruz-Universidad 5807

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	9.6	0.3	0.0	0.5	0.0	0.0	0.0	1.6	0.0	42.3
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
3	0.0	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	115.9	0.0
4	6.1	6.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.3
5	31.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0
6	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.4
7	0.0	7.3	0.0	16.8	0.0	0.0	0.0	23.1	0.0	0.0	0.0	57.7
8	0.0	1.6	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	11.2	25.3
9	0.1	6.7	0.0	0.0	0.0	0.0	17.3	0.0	1.5	0.0	7.4	0.2
10	0.8	0.0	0.0	35.9	16.7	0.0	7.1	0.2	0.0	0.0	1.6	1.2
11	3.0	16.0	0.2	1.2	14.4	0.0	0.0	0.0	0.0	0.0	0.6	3.9
12	4.1	2.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	38.6	0.0	2.1
13	18.9	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	31.2	0.0	0.0
14	24.4	0.0	159.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.3	0.0
15	7.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	2.5	25.8	4.1	6.1	0.1	0.0	0.0	1.0	0.2	0.0	0.1	0.0
17	0.0	0.0	17.9	0.0	0.8	0.0	0.0	0.0	0.0	0.0	10.1	0.0
18	11.2	1.2	1.7	0.0	0.0	21.5	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.2	0.9
20	50.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	46.1	6.7	2.1
21	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.0	16.9	0.0	0.0
22	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.2	0.0	0.0	48.3
23	0.0	2.1	3.9	0.0	5.5	0.0	0.0	0.0	37.2	0.0	8.6	4.5
24	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	21.6	0.0	0.0	0.0
25	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.3	0.0	2.5
26	0.0	2.7	0.0	6.2	0.0	0.0	0.0	3.4	0.0	26.1	0.0	0.0
27	2.2	0.0	1.4	16.7	0.0	13.7	0.0	6.1	0.0	0.0	0.0	16.2
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0
29	28.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
30	0.0		1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9
31	0.1		0.9		0.0		0.0	0.0		14.4		6.2
Total	191.6	99.6	209.7	91.5	37.9	40.9	24.4	36.2	67.6	207.4	196.7	243.2
Max	50.2	25.8	159.6	35.9	16.7	21.5	17.3	23.1	37.2	46.1	115.9	57.7
Rain Days	16.0	16.0	15.0	8.0	6.0	6.0	2.0	7.0	8.0	9.0	11.0	18.0

Rainfall Data: Sta Cruz-Universidad 5807

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	9.3	35.4	47.9	0.0	0.0	1.0	0.0	0.8	0.0	9.0	7.2	60.6
2	25.2	39.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	2.8	0.5
3	1.9	44.8	0.0	0.0	0.0	0.2	0.0	0.5	0.0	0.0	1.1	0.3
4	0.0	2.5	0.0	0.0	0.0	0.0	0.5	3.3	0.0	0.0	1.9	0.0
5	0.0	0.0	0.0	8.0	0.0	4.2	0.0	0.2	0.0	0.0	0.2	61.1
6	0.0	54.2	0.0	0.0	0.0	14.7	0.0	0.0	0.0	20.1	0.0	68.2
7	0.0	0.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.4	0.0	0.3
8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.9	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5
10	1.1	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.1	3.4	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
12	0.0	0.9	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.9	0.4
14	0.0	18.2	5.7	0.0	4.2	25.2	0.0	0.0	0.0	0.0	55.3	39.3
15	1.0	0.4	2.2	0.0	0.0	7.5	0.0	0.0	9.6	0.0	0.0	17.6
16	0.0	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	142.8	0.0	0.0
17	33.3	1.5	0.2	2.4	0.0	6.7	2.8	0.0	0.0	39.8	0.0	0.0
18	0.0	0.0	4.0	14.4	0.0	15.4	8.3	0.0	0.0	0.2	0.0	2.2
19	9.3	0.7	1.6	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
20	12.5	11.6	0.0	52.0	0.1	0.0	0.0	11.1	0.0	0.0	0.0	0.0
21	0.0	0.0	0.1	4.7	0.0	0.4	0.0	6.4	12.5	0.0	0.0	1.0
22	0.0	0.0	0.0	0.4	40.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6
23	0.0	0.0	0.5	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	23.8	1.5	0.0	0.0	0.0	0.0	0.0	20.8	0.0	6.5
25	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	34.1	18.3	1.2	0.7
26	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.3	0.0	4.9	0.0
27	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	15.5	0.0
28	10.1	22.4	0.0	0.0	0.4	3.0	0.0	0.0	0.0	0.0	7.2	1.2
29	0.0		0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.5
30	0.0		0.0	0.0	0.0	2.5	0.0	0.0	0.0	8.2	0.0	0.0
31	59.1		0.0		0.4		0.0	2.8		9.1		0.1
Total	163.5	233.4	97.0	105.3	54.9	98.9	11.6	25.1	56.5	268.7	123.4	273.0
Max	59.1	54.2	47.9	52.0	40.0	25.2	8.3	11.1	34.1	142.8	55.3	68.2
Rain Days	11.0	16.0	13.0	11.0	6.0	18.0	3.0	7.0	4.0	10.0	12.0	19.0

Rainfall Data: Sta Cruz-Universidad 5807

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	10.1	0.0	0.0	0.0	0.0	0.0					
2	0.5	2.1	0.0	0.0	0.9	0.0	0.0					
3	0.5	5.8	16.5	0.0	2.3	0.0	0.0					
4	0.0	0.4	2.3	0.0	1.5	0.0	0.0					
5	0.0	0.0	0.1	0.0	0.0	0.0	0.0					
6	0.0	1.3	1.8	0.0	0.0	0.0	0.0					
7	58.8	0.0	0.3	0.0	0.0	0.0	0.0					
8	23.5	3.3	1.1	3.5	0.0	0.0	2.0					
9	0.0	0.0	0.0	4.9	0.0	0.0	10.4					
10	0.0	50.0	0.0	0.2	0.0	0.1	0.0					
11	5.7	11.3	37.0	0.1	0.0	2.0	0.0					
12	23.2	0.1	18.6	0.0	0.0	0.0	0.0					
13	1.1	0.0	0.0	5.7	1.3	0.0	0.1					
14	0.0	0.0	0.2	0.0	2.9	0.0	0.0					
15	0.0	0.0	0.1	0.0	2.8	0.0	0.0					
16	8.7	0.0	0.3	10.9	0.0	0.0	0.0					
17	0.0	0.0	0.0	54.5	0.1	0.0	0.0					
18	0.0	5.0	0.4	0.0	0.0	0.0	0.0					
19	0.0	35.0	0.6	0.0	0.0	1.4	0.1					
20	0.0	50.6	0.0	0.0	0.0	0.5	0.0					
21	0.0	0.6	1.1	0.0	0.0	0.8	0.0					
22	0.0	1.6	8.7	0.0	0.0	0.1	0.0					
23	0.6	0.0	18.7	0.0	0.0	0.0	0.0					
24	0.2	3.3	3.2	4.3	0.0	1.2	0.0					
25	4.6	2.6	2.0	9.7	0.0	0.0	0.0					
26	0.5	14.1	4.8	3.3	7.5	0.6	0.0					
27	0.3	38.7	0.0	0.1	0.0	0.0	0.0					
28	0.5	0.2	0.0	20.0	0.0	0.0	0.0					
29	15.5		0.0	4.5	4.8	0.0	0.0					
30	38.3		0.0	0.0	1.0	0.0	0.0					
31	7.8		0.0		0.0		0.0					
Mean	190.3	236.1	117.8	121.7	25.1	6.1	12.6	0.0	0.0	0.0	0.0	0.0
Max	58.8	50.6	37.0	54.5	7.5	2.0	10.4	0.0	0.0	0.0	0.0	0.0
Rain Days	17.0	19.0	19.0	13.0	10.0	7.0	4.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Viru Viru 50NP

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	2.3	49.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.2	18.8	0.0	0.0	5.4	0.9	0.0	0.0	3.3	0.0	0.0	0.0
3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.0
4	0.1	5.9	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
5	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.6
6	25.2	0.0	0.2	1.0	0.1	0.0	22.2	0.0	0.0	0.0	1.2	0.0
7	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0
8	0.0	0.0	9.0	0.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	3.0
9	0.0	0.0	0.0	67.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
10	0.0	20.4	0.0	24.0	0.0	0.3	0.0	0.0	0.0	0.0	21.6	0.0
11	0.0	47.7	0.0	0.0	0.0	0.1	0.0	0.0	1.6	0.0	13.8	23.7
12	2.4	21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
13	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	3.2	0.0	0.0	0.0	0.6	0.0	0.5	1.4	0.0	0.0	0.4	0.0
16	0.0	1.0	9.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	8.8	0.0
17	0.1	30.3	0.0	11.6	1.6	6.2	0.0	0.0	0.0	0.0	45.0	0.0
18	2.7	0.2	0.0	38.0	0.0	0.0	0.0	0.0	16.2	8.6	0.0	0.0
19	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	8.6	0.3	0.0	0.0
20	0.0	0.0	10.1	0.8	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0
21	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.7	32.4
22	0.2	1.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	9.0
23	0.0	35.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.6	26.1	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
25	0.0	2.6	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
26	0.1	0.0	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
27	1.2	23.4	1.8	0.0	0.0	0.0	0.0	0.0	22.3	0.0	0.0	0.0
28	23.4	1.4	5.0	0.0	0.0	0.0	0.0	0.0	5.7	4.3	0.0	2.4
29	20.0		11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	7.9		0.4	2.4	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.1
31	2.0		2.3		0.0		0.0	0.0		0.0		0.0
Total	472.0	296.6	92.5	157.0	10.3	7.7	25.7	4.6	57.8	60.8	108.4	146.2
Max	25.2	49.0	14.6	67.1	5.4	6.2	22.2	3.0	22.3	35.6	45.0	40.6
Rain Days	19.0	16.0	14.0	10.0	5.0	5.0	4.0	3.0	7.0	5.0	11.0	10.0

Rainfall Data: Viru Viru 50NP

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
2	0.0	27.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	94.6	0.0
3	2.0	43.3	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
4	88.6	7.8	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0
5	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	29.0	0.0	0.0	0.0
6	0.0	3.5	0.0	1.8	0.0	0.0	0.0	6.3	0.0	0.0	0.0	68.9
7	0.0	19.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	5.0	30.5
8	0.0	1.9	0.0	0.0	0.0	0.0	12.4	0.0	1.2	0.0	8.1	0.0
9	0.0	0.0	0.0	186.5	7.8	0.0	4.6	0.0	0.0	0.0	5.4	9.9
10	2.6	11.8	0.0	3.4	9.3	0.0	0.0	0.0	0.0	0.0	1.2	3.9
11	7.9	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	0.0	1.0
12	8.6	0.0	1.9	4.3	0.0	0.0	0.0	0.0	0.0	25.6	0.0	0.0
13	16.1	0.0	107.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0
14	4.3	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	3.5	3.2	0.0	10.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.5	0.0	16.0	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	20.3	0.2	6.0	0.0	6.0	38.2	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.7	3.0	0.0	0.0	0.0	0.0	0.0	1.0
19	35.8	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	3.9	0.0
20	0.3	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.0	2.4	0.0	0.0
21	0.3	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	10.4	0.2	0.0	1.6	0.0	0.0	0.0	26.3	0.0	0.0	42.7
23	4.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	21.3	0.0	0.0	1.0
24	0.0	3.5	0.0	1.2	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
25	0.0	2.7	0.0	8.0	0.0	0.0	0.0	5.8	0.0	2.6	0.0	0.0
26	1.4	0.2	1.3	10.4	0.0	3.3	0.0	24.4	0.0	0.0	0.0	0.0
27	0.0	0.0	1.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0
28	24.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
29	0.0	72.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2
30	4.3		0.3	0.0	1.4	0.0	0.0	0.0	0.0	0.0	28.7	46.5
31	0.0		0.0		0.6		0.0	0.0		0.0		18.5
Total	225.4	212.3	139.9	228.0	33.2	44.6	17.0	36.8	107.8	58.9	150.3	240.6
Max	88.6	72.0	107.1	186.5	9.3	38.2	12.4	24.4	29.0	25.6	94.6	68.9
Rain Days	17.0	18.0	13.0	10.0	12.0	4.0	2.0	5.0	6.0	7.0	8.0	12.0

Rainfall Data: Viru Viru 50NP

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	26.8	6.1	0.0	0.0	0.0	0.7	0.0	0.3	0.0	0.0	0.4	3.3
2	3.0	27.3	1.2	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	1.2
3	0.0	7.1	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	2.5
4	0.0	0.1	0.0	0.5	0.0	1.7	0.8	0.6	0.0	0.0	0.0	19.1
5	0.0	9.3	0.0	0.0	0.0	23.5	0.0	0.0	0.0	12.6	0.0	24.6
6	0.0	7.3	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	6.2
7	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
8	2.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.5
9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
10	0.0	0.0	11.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
11	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	2.9	0.0	0.2	0.0	1.0	0.4	0.0	0.0	0.0	0.0	0.1	0.0
13	0.0	0.0	0.4	0.0	14.7	21.7	0.0	0.0	0.0	0.0	22.0	12.0
14	0.0	0.0	8.2	0.0	0.0	8.1	0.0	0.0	1.9	0.0	0.0	14.6
15	0.0	0.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0	47.6	0.0	0.0
16	1.2	0.4	0.0	0.2	0.0	4.6	7.7	0.0	0.0	29.3	0.0	0.0
17	0.4	2.0	0.0	3.1	0.0	25.4	1.0	0.0	0.0	0.0	13.9	0.1
18	23.0	0.0	1.8	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	18.4	1.0	0.0	22.5	2.9	0.0	0.0	21.8	0.0	0.0	0.0	0.0
20	0.0	20.4	0.2	7.0	0.0	1.2	0.0	11.8	5.6	0.0	0.0	2.8
21	0.0	0.0	0.0	0.0	22.0	0.1	0.0	0.0	0.0	0.0	0.0	3.3
22	0.0	0.0	0.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	22.9	3.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	16.7
24	0.0	0.0	9.8	10.4	0.0	0.0	0.0	0.0	0.0	0.0	10.0	1.3
25	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	39.8	16.4	1.7	0.0
26	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.8	30.6	7.0	0.0
27	0.9	18.1	0.0	0.0	3.0	6.1	0.0	0.0	0.0	0.0	6.8	0.2
28	0.0	0.3	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	1.0	0.0
29	0.0		0.0	0.0	0.0	0.5	0.0	0.0	0.0	5.7	0.0	0.0
30	29.5		0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.6	24.8	0.1
31	33.0		0.0		0.0		0.0	0.0		4.2		0.0
Total	144.4	99.5	58.1	60.6	64.6	111.5	10.0	36.8	48.1	152.0	87.7	137.9
Max	33.0	27.3	22.9	22.5	22.0	25.4	7.7	21.8	39.8	47.6	24.8	27.5
Rain Days	13.0	13.0	10.0	11.0	8.0	17.0	4.0	6.0	4.0	8.0	10.0	19.0

Rainfall Data: Viru Viru 50NP

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	1.8	0.0	0.0	2.3	0.0	0.0					
2	0.3	0.0	0.6	0.0	1.2	0.0	0.0					
3	0.0	1.7	12.4	0.0	1.7	0.0	0.0					
4	0.0	0.1	3.2	0.0	0.0	0.0	0.0					
5	0.0	3.6	0.0	0.0	0.0	0.0	0.0					
6	23.4	0.4	0.0	0.0	0.0	0.0	0.0					
7	21.3	0.1	0.3	1.6	0.0	0.0	0.4					
8	0.0	0.1	0.0	2.2	0.0	0.1	4.6					
9	0.0	26.1	0.0	4.5	0.0	0.1	0.0					
10	0.2	9.0	28.9	0.0	0.0	2.2	0.0					
11	4.1	0.0	10.9	0.0	0.1	0.0	0.0					
12	38.6	0.0	0.0	0.0	0.6	0.0	0.0					
13	0.0	0.0	0.0	1.0	2.2	0.0	0.0					
14	0.9	0.0	0.0	0.0	12.9	0.0	0.0					
15	0.0	0.0	0.0	7.5	0.0	0.0	0.0					
16	0.0	0.0	0.2	40.0	0.0	0.0	0.0					
17	12.0	0.5	0.2	0.0	0.0	0.0	0.0					
18	1.1	20.3	0.0	0.0	0.0	10.2	0.0					
19	0.0	42.1	0.1	0.0	0.0	3.1	0.0					
20	0.0	3.8	0.1	0.0	0.0	0.7	0.0					
21	0.0	1.8	0.0	0.0	0.0	0.0	0.0					
22	1.0	0.0	15.9	0.0	0.0	0.0	0.0					
23	0.3	0.3	6.1	0.7	0.0	4.6	0.0					
24	7.2	4.5	0.8	7.2	0.0	0.0	0.0					
25	2.3	16.1	6.0	7.1	0.0	0.0	0.0					
26	1.0	9.5	0.0	0.3	0.0	0.0	0.0					
27	0.0	1.0	0.0	13.3	0.0	0.0	0.0					
28	13.2	0.1	0.0	1.5	5.9	0.0	0.0					
29	19.4		0.0	0.0	0.0	0.0	0.0					
30	18.2		0.0	0.0	0.0	0.0	0.0					
31	18.5		0.0		0.0		0.0					
Mean	183.0	142.9	85.7	86.9	26.9	21.0	5.0	0.0	0.0	0.0	0.0	0.0
Max	38.6	42.1	28.9	40.0	12.9	10.2	4.6	0.0	0.0	0.0	0.0	0.0
Rain Days	18.0	20.0	14.0	12.0	8.0	7.0	2.0	0.0	0.0	0.0	0.0	0.0

Rainfall Data: Warnes 51NP

1995

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	1.4	67.3	0.8	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.3	21.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.7	2.3	0.2	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0
4	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	1.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	28.4
6	7.6	0.0	5.8	2.8	4.5	0.0	20.8	0.0	0.0	0.0	1.4	0.0
7	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.2
8	0.0	0.0	7.6	1.6	0.0	0.8	0.0	0.0	0.0	0.0	0.0	3.7
9	0.8	0.0	0.0	96.4	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0
10	0.1	18.4	0.0	19.8	0.0	1.7	0.0	0.0	0.0	0.0	60.0	0.0
11	0.0	70.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.3	11.4	8.8
12	2.0	18.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	22.3	0.0	0.0
14	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	1.2	0.0	0.0	0.0	2.6	0.0	0.3	0.0	0.0	0.0	1.2	0.0
16	0.0	5.7	0.3	0.0	1.1	0.0	0.7	0.0	0.0	1.3	0.7	0.0
17	4.6	72.8	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	36.1	0.0
18	1.0	0.9	0.1	25.3	0.0	1.4	0.0	0.0	2.6	0.0	2.7	4.8
19	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0
20	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	21.3	0.0	0.0
21	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	39.8
22	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	101.0
23	0.0	17.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	3.5	16.0	60.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8
25	0.0	1.6	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4
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
27	1.3	33.3	1.1	0.0	0.0	0.0	0.0	0.0	30.3	0.0	0.0	0.0
28	20.2	8.5	3.8	0.0	0.0	0.0	0.0	0.0	4.8	8.2	0.0	2.7
29	20.4		21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
30	8.2		0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
31	1.6		3.2		0.0		0.0	0.0		0.0		0.0
Total	472.0	362.2	109.3	162.8	24.3	3.9	21.8	1.3	47.2	56.5	144.9	233.5
Max	20.4	72.8	60.3	96.4	15.4	1.7	20.8	1.3	30.3	22.3	60.0	101.0
Rain Days	19.0	16.0	19.0	9.0	6.0	3.0	3.0	1.0	5.0	6.0	11.0	12.0

Rainfall Data: Warnes 51NP

1996

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	0.2	0.0
2	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	103.4	0.0
3	0.6	51.5	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0
4	102.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0	75.8	0.0	0.0	0.0
5	0.0	27.2	0.1	0.0	0.0	0.0	0.0	0.0	13.8	0.1	0.0	0.0
6	0.0	3.3	0.0	1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	50.7
7	0.0	0.8	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	5.4	26.6
8	0.0	0.6	0.0	0.0	0.0	0.0	9.0	0.0	2.1	0.0	2.0	0.0
9	1.0	0.0	0.0	118.8	14.1	0.0	9.4	0.0	0.8	0.0	8.0	7.5
10	1.0	6.5	0.0	1.6	10.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
11	4.6	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	21.2	0.0	2.7
12	20.4	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	27.7	0.0	0.0
13	3.4	0.0	84.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.3	0.0
14	0.9	0.0	0.0	0.0	4.6	0.0	0.0	4.1	0.0	0.0	0.0	0.0
15	2.4	1.2	0.0	2.5	2.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0
16	0.2	0.0	8.6	0.4	1.3	0.0	0.0	0.0	0.0	0.0	8.4	0.0
17	7.8	0.0	5.6	0.0	7.6	36.7	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	6.1	7.1	0.0	0.0	0.0	0.0	0.0	0.0
19	31.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.2
20	4.5	0.6	0.0	0.0	3.5	0.0	0.0	4.2	0.0	37.5	0.0	0.0
21	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	28.9
22	0.0	1.5	0.8	0.0	4.1	0.0	0.0	0.0	30.3	0.0	0.0	4.7
23	14.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	58.1	0.0	0.0	1.2
24	0.0	10.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	20.1	8.2	0.2
25	0.0	8.2	0.0	6.0	0.0	0.0	0.0	0.1	0.0	47.3	0.0	0.0
26	0.0	0.4	5.0	0.3	0.0	0.7	0.0	22.2	0.0	5.4	0.0	7.7
27	10.0	0.4	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	23.7	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
29	0.0	28.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.5
30	1.8		0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	27.4	46.4
31	0.0		0.2		0.3		0.0	0.0		0.3		22.6
Total	231.1	196.4	112.2	131.5	53.7	44.5	18.4	38.6	189.5	184.1	169.3	267.5
Max	102.8	51.5	84.5	118.8	14.1	36.7	9.4	22.2	75.8	47.3	103.4	60.5
Rain Days	17.0	18.0	12.0	10.0	11.0	3.0	2.0	7.0	8.0	11.0	9.0	15.0

Rainfall Data: Warnes 51NP

1997

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	44.3	2.8	0.0	0.0	0.0	0.5	0.0	0.5	0.0	9.0	0.0	8.4
2	3.2	31.7	0.0	0.0	0.0	1.0	0.0	5.9	0.0	0.0	0.0	2.0
3	0.0	5.0	0.0	0.0	0.0	0.1	0.2	7.3	0.0	0.0	3.5	32.6
4	0.0	0.0	0.0	0.2	0.0	7.4	6.0	0.0	0.0	0.0	0.0	4.2
5	0.0	33.2	0.0	0.0	0.0	45.3	0.0	0.0	0.0	72.7	0.0	18.6
6	0.0	4.2	0.0	0.0	0.0	23.7	0.0	0.0	0.0	5.6	0.0	0.3
7	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	4.7	0.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.0
9	0.8	0.0	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	17.8	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
11	0.0	73.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	1.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3
13	0.0	0.2	2.0	0.0	12.4	11.0	0.0	0.0	0.0	0.0	57.0	38.9
14	0.0	0.0	8.0	0.2	0.0	5.7	0.0	0.0	3.0	0.0	0.0	84.3
15	0.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.5	0.0	0.0
16	6.7	4.6	0.0	0.2	0.0	5.6	0.5	0.0	0.0	30.2	0.0	0.0
17	18.0	0.0	0.7	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.3	5.6
18	46.1	0.3	1.1	2.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	9.7	6.2	0.0	55.2	0.0	0.0	0.0	16.4	0.0	0.0	0.0	0.0
20	0.0	0.0	22.7	20.2	0.0	0.0	0.0	7.3	16.8	0.0	0.0	2.3
21	0.0	0.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.8
22	0.0	0.3	0.6	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	20.3	4.3	0.8	0.0	0.0	0.0	0.0	17.6	0.0	0.0
24	0.0	0.0	6.5	0.5	0.0	0.0	0.0	0.0	0.0	20.0	1.7	3.0
25	0.0	0.0	0.0	22.6	0.0	3.9	0.0	0.0	22.4	0.0	0.7	0.0
26	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	2.0	0.0
27	80.0	1.7	0.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	4.7	0.0
28	0.0	0.4	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.6	1.6
29	0.6		0.0	0.0	0.0	1.7	0.0	0.0	0.0	10.2	0.0	2.5
30	19.0		0.0	0.0	0.0	0.0	0.0	5.6	0.8	2.9	94.5	8.1
31	29.5		0.0		0.0		0.2	0.0		7.8		0.7
Total	270.3	166.8	86.5	141.2	38.9	132.7	6.9	43.0	43.0	280.5	165.0	243.7
Max	80.0	73.4	22.7	55.2	14.1	45.3	6.0	16.4	22.4	104.5	94.5	84.3
Rain Days	15.0	15.0	12.0	11.0	6.0	15.0	4.0	6.0	4.0	10.0	9.0	19.0

Rainfall Data: Warnes 51NP

1998

Date	J	F	M	A	M	J	J	A	S	O	N	D
1	0.4	2.2		0.0								
2	0.2	0.0		0.0								
3	0.0	23.8		0.0								
4	0.0	6.3		0.0								
5	0.0	0.6		0.0								
6	11.6	0.4		0.0								
7	44.5	1.0		0.5								
8	0.0	12.0		12.0								
9	0.8	19.1		12.0								
10	2.3	7.5		0.0								
11	3.0	0.0		0.0								
12	33.0	0.0		0.0								
13	0.0	0.0		0.0								
14	0.1	0.0		0.0								
15	0.0	0.0		2.4								
16	0.0	0.0		58.9								
17	6.9	0.0		0.0								
18	0.0	11.0		0.0								
19	0.0	83.0		0.0								
20	0.0	1.3		0.0								
21	0.0	0.4		1.0								
22	0.5	0.0		0.0								
23	0.6	0.0		0.0								
24	2.0	1.8		0.0								
25	0.4	11.4		0.6								
26	0.2	10.7		0.3								
27	0.2	40.1		9.0								
28	69.2	0.9		1.5								
29	3.9			0.0								
30	10.2			0.0								
31	14.1											
Mean	204.1	233.5	0.0	98.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	69.2	83.0	0.0	58.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rain Days	20.0	18.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0