

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

NATIONAL DIRECTION OF RURAL SETTLEMENTS (DIRASBA)

SECRETARIAT OF RURAL DEVELOPMENT

NATIONAL SECRETARIAT OF POPULAR PARTICIPATION

MINISTRY OF HUMAN DEVELOPMENT

THE REPUBLIC OF BOLIVIA

THE STUDY ON
GROUNDWATER DEVELOPMENT
IN RURAL AREAS
IN THE REPUBLIC OF BOLIVIA

FINAL REPORT

SUPPORTING REPORT

June 1986

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INSTITUTE OF TECHNOLOGY, UNIVERSITY OF TORONTO

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**NATIONAL DIRECTION OF BASIC SANITATION (DINASBA)
SUB-SECRETARIAT OF URBAN DEVELOPMENT
NATIONAL SECRETARIAT OF POPULAR PARTICIPATION
MINISTRY OF HUMAN DEVELOPMENT
THE REPUBLIC OF BOLIVIA**

**THE STUDY ON
GROUNDWATER DEVELOPMENT
IN RURAL AREAS
IN THE REPUBLIC OF BOLIVIA**

FINAL REPORT

SUPPORTING REPORT

June 1996

**ENVIRONMENTAL TECHNOLOGIC CONSULTANT CO., LTD.
SUMIKO CONSULTANTS CO., LTD.**



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SUPPORTING REPORT

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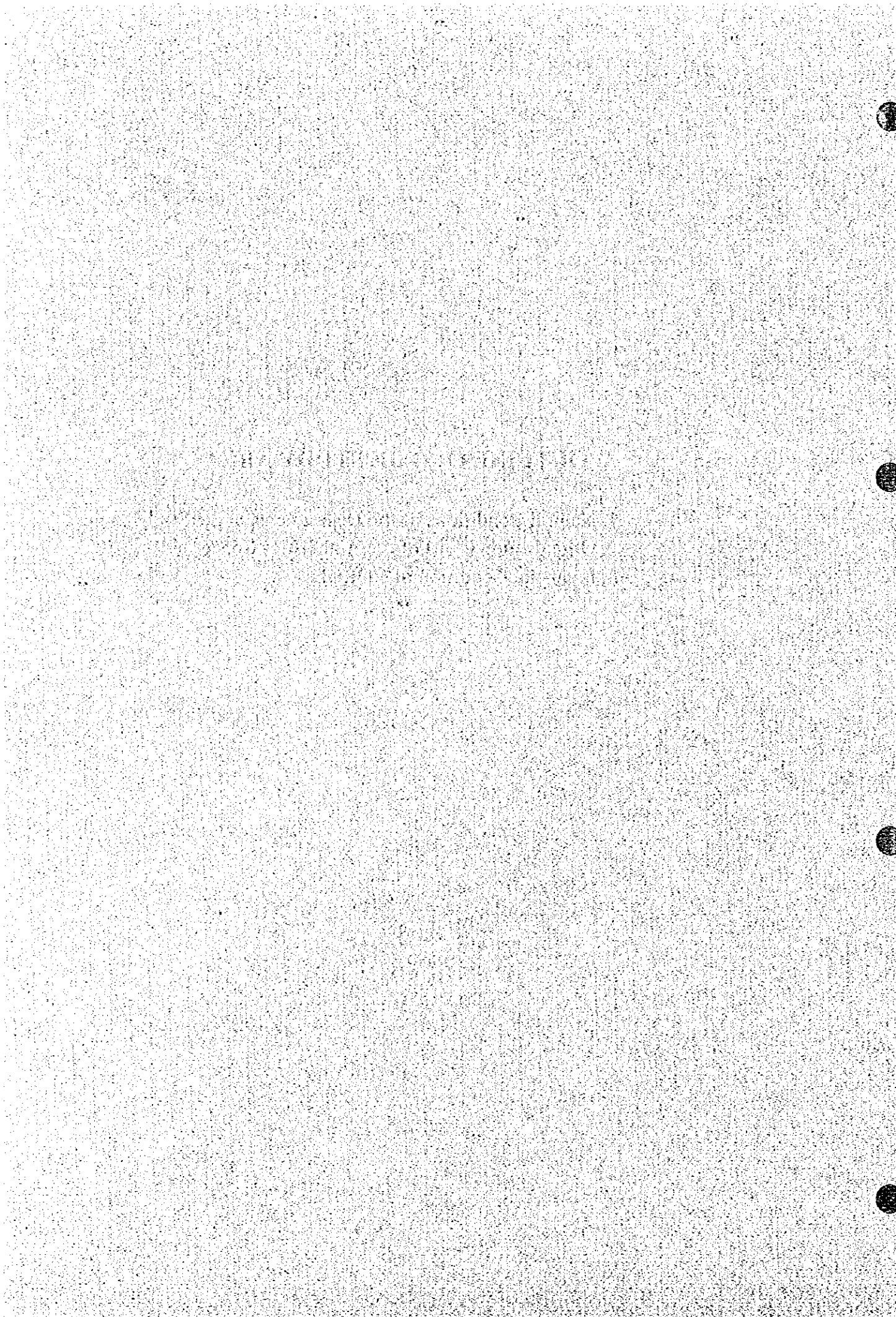
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A. OUTLINE OF THE STUDY AREA

1. Natural Conditions of the Departments in the Study Area
2. Organization Chart of the Authorities Concerned
3. Financial Condition of CORDEs



Natural Conditions of the Study Area - Chuquisaca

(1) Physiography

The Department of Chuquisaca is occupied by "La Cordillera Oriental; Cadena Montañosa", "Las Seranías Sub-Andinas; Zona Sub-Andina" and "La Llanura Chaco-Beniana". The altitude is between 340 m and 4,350 m; ie. 2,500 m to 4,300 m in "La Cordillera Oriental", 1,100 m to 3,100 m in "Las Seranías Sub-Andinas" and 500 m and 800 m in "La Llanura Chaco-Beniana".

(2) Hydrology

The annual mean temperature is 15°C to 25°C and the annual mean precipitation changes gradually from 500 mm to 1,400 mm.

(3) Geology

The geology of the Department of Chuquisaca consists of Ordovician, Silurian, Devonian, Carboniferous, Permian, Cretaceous, Tertiary and Quaternary formations.

The Ordovician and Silurian formations are extend at the east side of "La Cordillera Oriental; Cadena Montañosa". Those formations are parallel to the structure of "La Cordillera Oriental"

The Devonian, Carboniferous, Permian, Cretaceous and Tertiary formations situate at "Las Seranías Sub-Andinas", have parallel and belt-shaped distributions with altitudes of 1,100 m to 3,100 m. The Tertiary formation is also seen in "La Llanura Chaco-Beniana" and is overlaid by Quaternary formation.

The Quaternary formation is generally exposed at "La Llanura Chaco-Beniana" and distributed along valleys which exhibit terrace forms.

(4) Hydrogeology

The annual mean precipitation of Department of Chuquisaca is 800 mm to 1,400 mm, (at the east side of "Las Seranías Sub-Andinas") the maximum precipitation in this Department. In this area, the Pilcomayo river exists and flows in the southeast direction towards the Department of Tarija.

There are no large rivers in the "La Llanura Chaco-Beniana" part of this Department, like the Grande river in the Department of Santa Cruz and the Pilcomayo river in the Department of Tarija.

But groundwater is known to exit in this plain (Llanura) by prospections for petroleum. This groundwater is confined and the water is recharged at the front of the "Las Seranías Sub-Andinas".

The static water level is 270 m at the 20 km area (near El Salvador; 800 m in altitude) from the west side of the plain, 220 m at the 70 km area (near Miraflores; 480 m in altitude) from the above-mentioned west side and 60 m at the 100 km area (near the border to Brazil; 370 m in altitude) from the same side.

The wells around El Salvador are known to have an aquifer comprising an alternation of fine sand and silts which is situated at 400 m to 450 m, 250 m, and 150 m (respectively near El Salvador, at Miraflores and at the border to Brazil), and yield groundwater at 2 to 6 l/sec..

The "comunidad" Campo León (Provincia of Luis Calvo, No.1-10-0303-09) is situated at "La Llanura Chaco-Beniana" and near El Salvador and has a precipitation of 750 mm per a year.

The "comunidad" of San Ishidro (Provincia of Luis Calvo, No.1-02-0203-08) is situated at "La Llanura Chaco-Beniana". The hydrogeological condition is similar to that of Campo León.

Natural Conditions of the Study Area - Southern Part of La Paz

(1) Physiography

The southern part of La Paz is occupied principally by "El Altiplano Andino" and to a lesser part by "La Cordillera Occidental; Complejo Volcánico". The altitude is between 3,800 m and 5,580 m, with the mean altitude being 4,800 m.

(2) Hydrology

The annual mean temperature is 4°C to 12°C and the annual mean precipitation changes gradually from 180 mm at the southwestern part to 500 mm at the northeastern part.

(3) Geology

The geology of the southern part of La Paz consists of Silurian, Devonian, Tertiary and Quaternary formations and intrusive Tertiary/Quaternary rocks.

The Silurian/Devonian formation is distributed on a small scale at the eastern part of the southern part of La Paz. On the contrary, Tertiary and Quaternary formations occupy a broad area and these formations consist of volcanic rocks and sedimentary beds. The volcanic rocks form ridges or spotted peaks that have high altitudes of 4,000 m to 5,580 m. The sedimentary Quaternary beds consist of silts, fine sands and gravel and form plains and fans in topography.

Tertiary intrusive rocks have a granodioritic lithology and the Quaternary intrusive rocks also show the lithology of granodiorite.

The formations before the Quaternary are folded strongly.

(4) Hydrogeology

The plain formed by Quaternary beds is called the "pampa" and has a tendency to be arid in condition with 180 mm to 600 mm in precipitation per year.

The groundwater in this area generally has a high salinity, being about 3 mg/l in the western part, 50 mg/l in the middle part and 2,000 mg/l in the eastern part (D. Frederic; 1994). For the same parts, ORSTOM (1994) reports conductivities of less than 1 ms/cm, 1 ms/cm to 2 ms/cm and 2 ms/cm to 5 ms/cm, respectively. The salinity is lower than 100 mg/l in the Tertiary sandstones and higher in the Quaternary beds at the southwestern side of the Desaguadero river.

According to Daniel Frederic (1994), the static water level shows a trend of changing from being shallow (about 50 m) at the western part to being deep (about 100 m) at the eastern part of the same area.

Mission A.N. (1991) shows an isophreatic map which indicates artesian areas inferred from electrical prospection and geological profile for the northern part of the above-mentioned area.

According to this report, the phreatic level is 3,815 m to 3,840 m in altitude. But so far only a few wells have been constructed in the Southern part of La Paz (wells with depths of less than 50 m).

The Quaternary plain lies along the Desaguadero river. Fans are situated at the hill side/mountain side and terraces are formed at a space between two mountain ranges. These topographical areas tend to have a high permeability.

At these topographical areas, the groundwater has generally good quality with less than 100 mg/l in concentration of chloride except near the Desaguadero river.

The "comunidades" of Patacamaya (Provincia of Aroma, No. 2-13-0034-01) and Sicasica (Provincia of Aroma, No.2-13-0001-01) is situated at the Quaternary plain with the above-mentioned typical geographical feature.

Natural Conditions of the Study Area - Oruro

(1) Physiography

The Department of Oruro is occupied principally by "El Altiplano Andino" and to a lesser degree by "La Cordillera Occidental; Complejo Volcánico". The altitude is between 3,600 m and 6,550 m and the mean altitude is 3,700 m.

(2) Hydrology

The annual mean temperature is 6°C to 10°C and the annual mean precipitation changes gradually from 50 mm at the southwestern part to 400 mm at the northeastern part.

(3) Geology

The geology of the Department of Oruro consists of Silurian, Devonian, Tertiary and Quaternary formations and intrusive (Tertiary/Quaternary) rocks.

The Silurian/Devonian formation is distributed from the northeastern part to the southeastern part of "Oruro ciudad" with altitudes of 4,400m - 5,100m. On the contrary, Tertiary and Quaternary formations occupy a broad area and these formations consist of volcanic rocks and sedimentary beds. The volcanic rocks form ridges or spotted peaks that have altitudes as high as 4,000m - 6,550m.

The sedimentary (Quaternary) beds consist of silts, fine sands and gravel and form plains, fans and terraces in topography.

(4) Hydrogeology

The plain composed by the Quaternary beds is called the "pampa" and has a tendency to be very arid in condition. The annual precipitation is 50 mm - 200 mm. The groundwater in this plain generally has a high conductivity range; about 7,000 micro-s/cm to 8,000 micro-s/cm. But prospecting of underground parts deeper than 50 m in depth have not been attempted as of yet.

It is known that hot springs exist along the foot of the mountain in the NNW-SSE direction, for example, at Capatu, Poopo, Pasña, Urmiri, Est.Huarancoco, Challapata and Cmdad Cochoca, which are situated at the east side of the "El Altiplano Andino".

These hot springs have the following conditions;

Comunidad	Temperature	Electrical conductivity
Capatu	49.1°C	2,860 micro-s/cm
	43.5°C	3,530 micro-s/cm
Poopo	>70°C	> 20,000 micro-s/cm
Pasña	47.8°C	9,890 micro-s/cm

It is known that hot springs, that are associated with the Tertiary - Quaternary (pliocene-Pleistocene) volcanic activity, exist along "La Cordillera Occidental; Complejo Volcánico".

The Quaternary fan is formed at the hill-side/mountain-side and terraces are formed at a space between two mountain ranges. These topographical areas have a tendency to have high permeability. The groundwater accompanying such topography is generally of good quality, with conductivities of 400 micro-s/cm to 900 micro-s/cm.

The "comunidades" of Peñas (Provincia of Poopo, No.4-06-0007-01) and Corque (Provincia of Carangas, No.4-03-0001-01) are situated at the terrace with the above-mentioned typical geographical feature.

The Silurian/Devonian formation situated from the northeastern part to the southeastern part of "Oruro ciudad" is important from the angle of water resources, although the area has only a minor extent in the Department of Oruro. The very high and steep topography made by the Silurian/Devonian formation causes a comparatively high precipitation of 300 mm ~ 400 mm in a year and the calcareous formations such as the Catavi formation have cavities or caves which accompany a large amount of groundwater. The groundwater accompanying these formations has generally good quality with conductivities in the range 100 micro-s/cm to 500 micro-s/cm.

Natural Conditions of the Study Area - Tarija

(1) Physiography

The Department of Tarija is occupied by "La Cordillera Oriental; Cadena Montañosa", "Las Seranías Sub-Andinas; Zona Sub-Andina" and "La Llanura Chaco-Beniana". The altitude is between 350m and 4,560m; ie 2,100m to 4,560m in "La Cordillera Oriental" and 350m to 1,750m in "Las Seranías Sub-Andinas" and 600 m and 1,360 m in "La Llanura Chaco-Beniana".

(2) Hydrology

The annual mean temperature is 10°C to 23°C and the annual mean precipitation changes gradually from 300 mm to 2,000 mm.

(3) Geology

The geology of the Department of Tarija consists of Ordovician, Silurian, Devonian, Carboniferous, Permian, Cretaceous, Tertiary and Quaternary formations.

All of the formations are extended from the Department of Chuquisaca with the same form and structure.

(4) Hydrogeology

The annual mean precipitation in the Department of Tarija is 300 mm to 2,000 mm. The maximum value occurs at the west side of "Las Seranías Sub-Andinas" and the isohyets for 800 mm and above extend in the NE-SW direction in an arm-like manner.

This "comunidad" is divided into two hydrogeological basins; Pilcomayo basin and Bermejo basin.

The "comunidad" of San Isidro (Provincia of Cercado, No.6-04-0109-02) is situated at "La Cordillera Oriental" and within a hydrogeological sub-basin.

The "comunidad" of Bermejo (Provincia of Arce, No.6-02-0203-01) is situated at "Las Seranías Sub-Andinas".

Natural Conditions of the Study Area - Santa Cruz

(1) Physiography

The Department of Santa Cruz is occupied principally by "Las Seranías Sub-Andinas; Zona Sub-Andina" and "La Llanura Chaco-Beniana". The altitude is between 110 m and 3,100 m and the mean altitude is 300 to 600 m.

(2) Hydrology

The annual mean temperature is 19°C to 29°C and the annual mean precipitation changes gradually from 700 to 3,000 mm.

(3) Geology

The geology of the Department of Santa Cruz consists of Pre-Cambrian, Cambrian, Ordovician, Silurian, Devonian, Carboniferous, Cretaceous, Tertiary and Quaternary formations.

The Pre-Cambrian formation is distributed at the east part of the Department with altitudes of 160 m to 1,200 m and along the border with Brazil and constitutes "El Escudo Central; Escudo Cristalino".

The Cambrian formation is situated in a small scale at the west marginal part of the "El Escudo Central".

The Ordovician and Silurian formations are distributed in a small scale to the west of and parallel to the "El Escudo Central". The exposures of the rock are named "Las Sierra Chiquitanas".

The Devonian, Carboniferous and Cretaceous formations are situated at the western side of the "Santa Cruz ciudad", have parallel and belt-shaped distributions and constitute the "Las Seranías Sub-Andinas; Zona Sub-Andina" that has a maximum altitude of 3,100 m in the Department of Santa Cruz. These formations are folded strongly. These formations also have spotted distributions between "El Escudo Central" and "Las Sierra Chiquitanas", and are partly overlain by the Quaternary formation. These exposures have altitudes of 350 m to 1,290 m.

The Tertiary formation constitutes the east marginal zone of the "Las Seranías Sub-Andinas; Zona Sub-Andina". The base rock of the "Santa Cruz ciudad" is inferred to be this formation.

The Quaternary formation has a large exposure between "El Escudo Central" and "Las Sierra Chiquitanas", and exhibits a very vast and horizontal plain with altitude of 180 m to 560 m which is named "La Llanura Chaco-Beniana".

(4) Hydrogeology

The annual mean precipitation of the Department of Santa Cruz is more than 1,000 mm over a wide area except the southwest part of the Department where the "Izozog" is situated at and which is the upstream of the Parapeti river.

In the "Las Seranías Sub-Andinas", the annual mean precipitation is 700 mm to 2,000 mm. Precipitation has a tendency to increase towards the north and northwest, with maximum values being seen in "La Llanura Chaco-Beniana", which is situated at the border to "Las Seranías Sub-Andinas". The value at the "Santa Cruz ciudad" is about 1,200 mm.

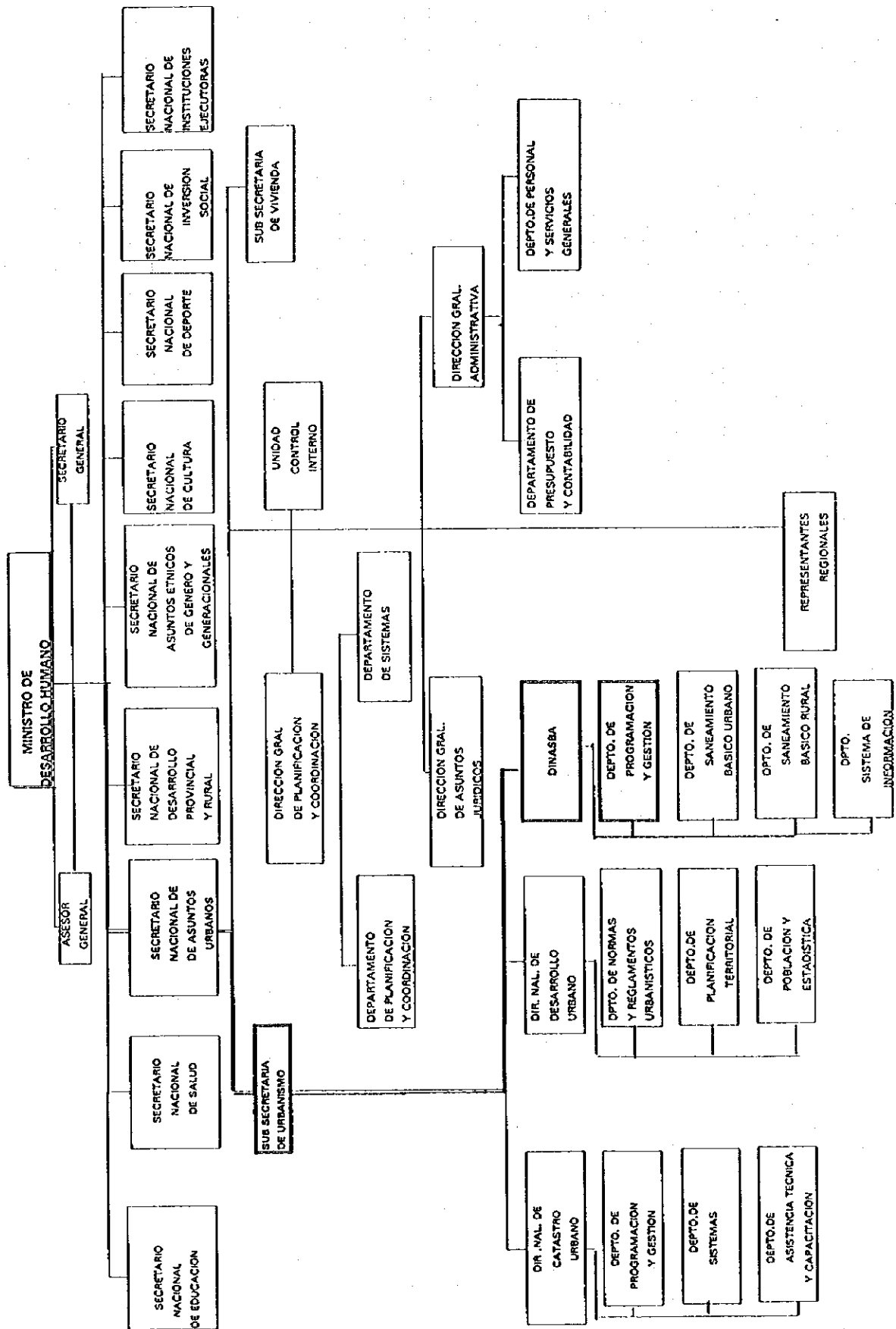
These water of the rainfall flows northwestward in the "Cuenca del Amazonas" and converges to the Grand river - Mamore river and Itenes o Guapore river.

In the "Cuenca del Amazonas", the precipitation is 700 mm to 1,400 mm and the water of the rainfall flows southwestward and to the Paraguay river.

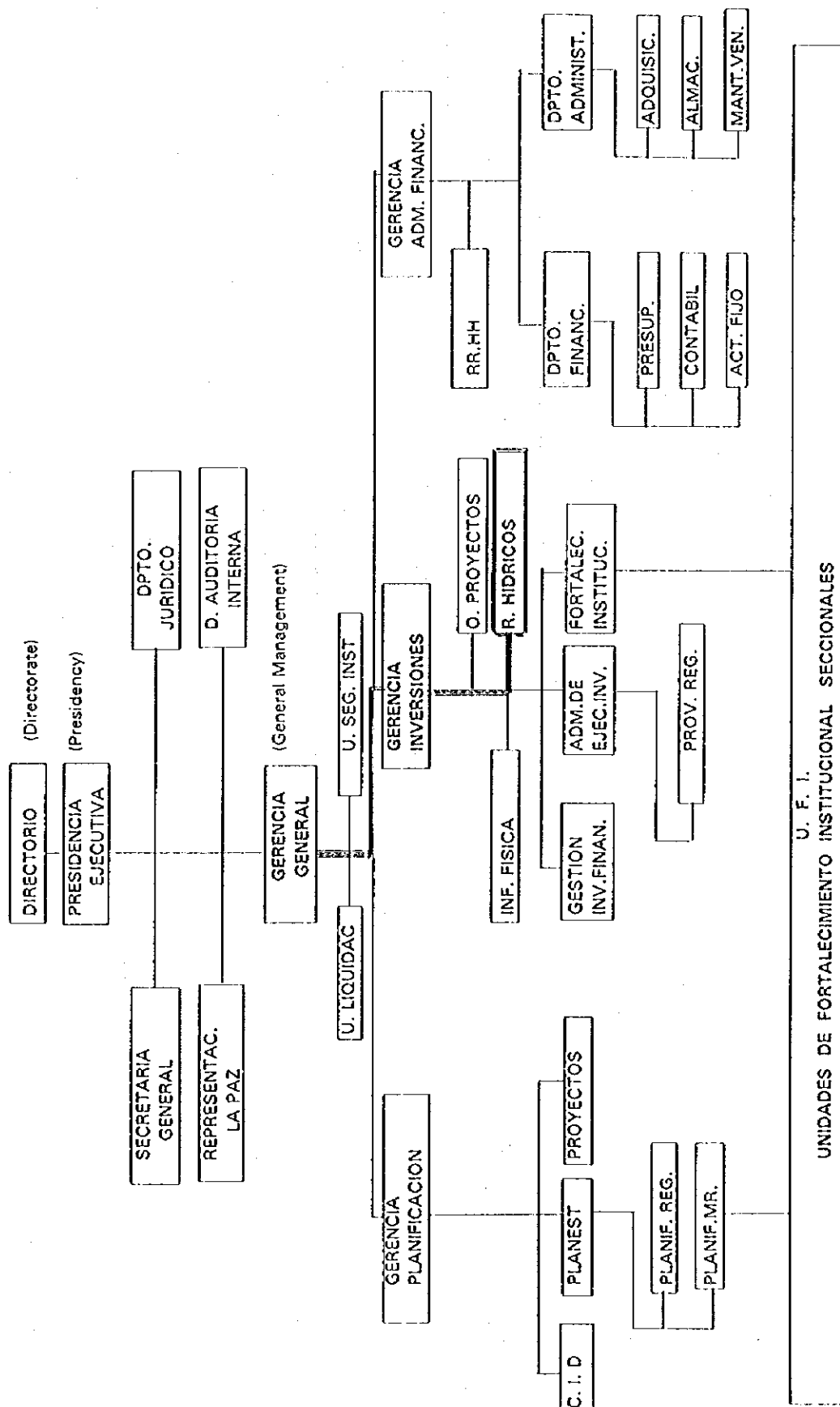
The "comunidad" of Est. San Carlos (Provincia of Andres Ibañez, No.7-01-0301-30) is situated at the "La Llanura Chaco-Beniana", which in turn is situated at the border to "Las Seranías Sub-Andinas" and has precipitation of 1,200 mm to 1,300 mm per a year. But the ground surface becomes dry soon after the termination of rainfall because the geology of the "comunidad" consists mainly of fine sand and accompanies silt. It is inferred from the results of electrical prospection to that a clay bed with the property of a confining layer exists at a depth of 225 m.

The "comunidad" of Quituquina (Provincia of Chiquitos, No.7-05-0101-04) is situated at the "La Llanura Chaco-Beniana", which is between "Las Sierra Chiquitanas" and "El Escudo Central". In the surroundings of this "comunidad", the groundwater in the shallow aquifer is contaminated which heavy minerals.

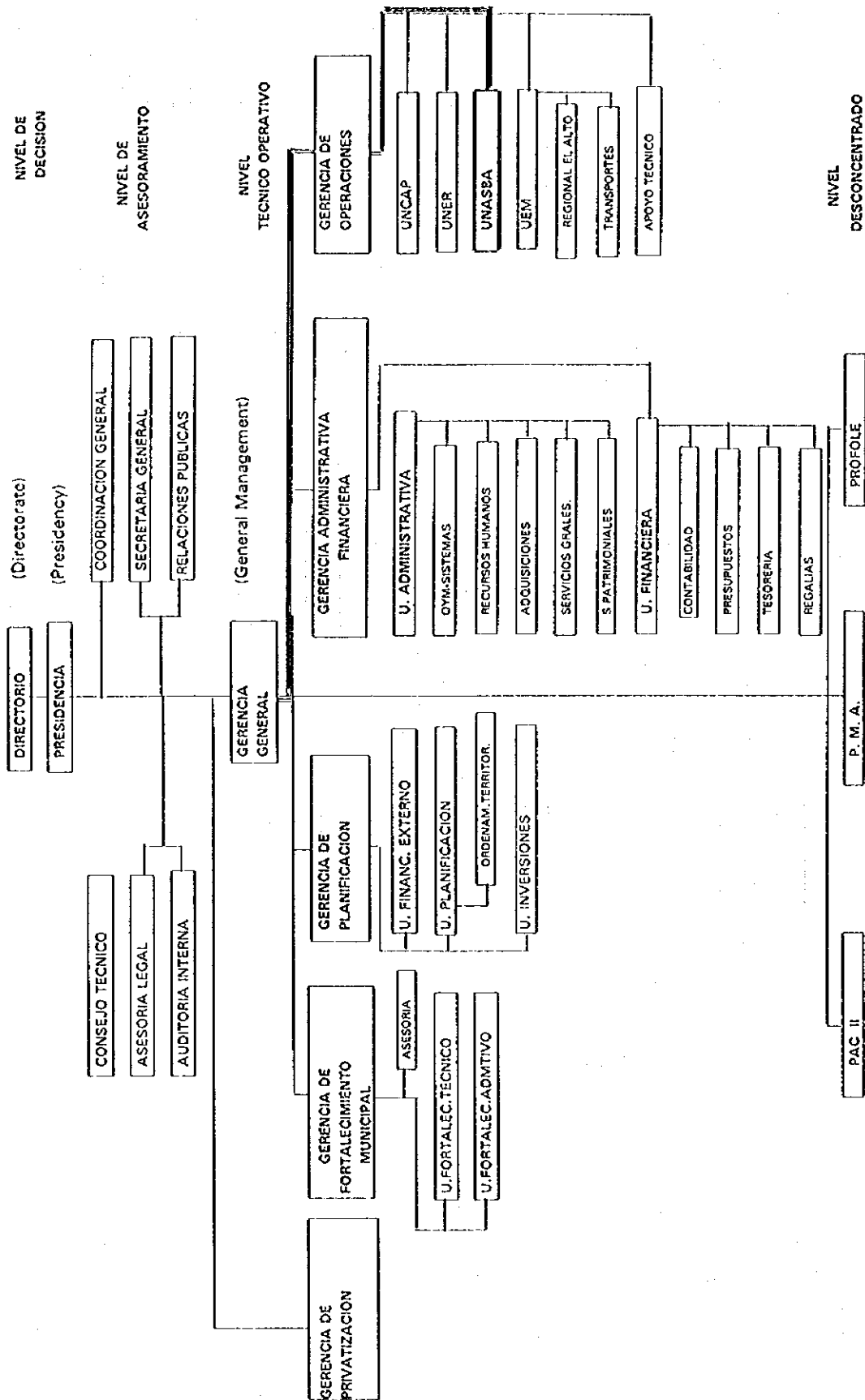
The Organization Chart of the Authorities Concerned



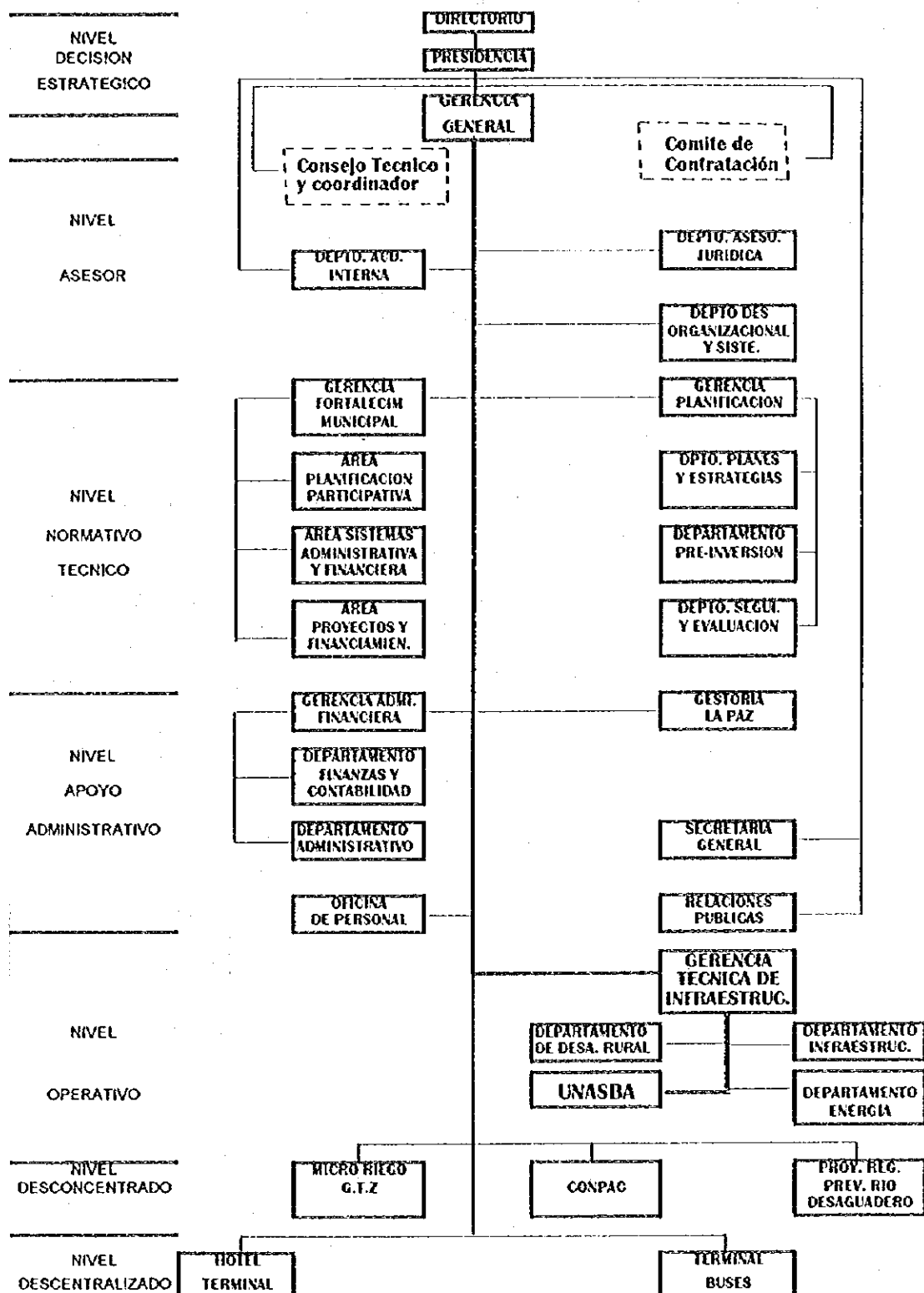
ORGANIZATION CHART OF CORDECH 1994



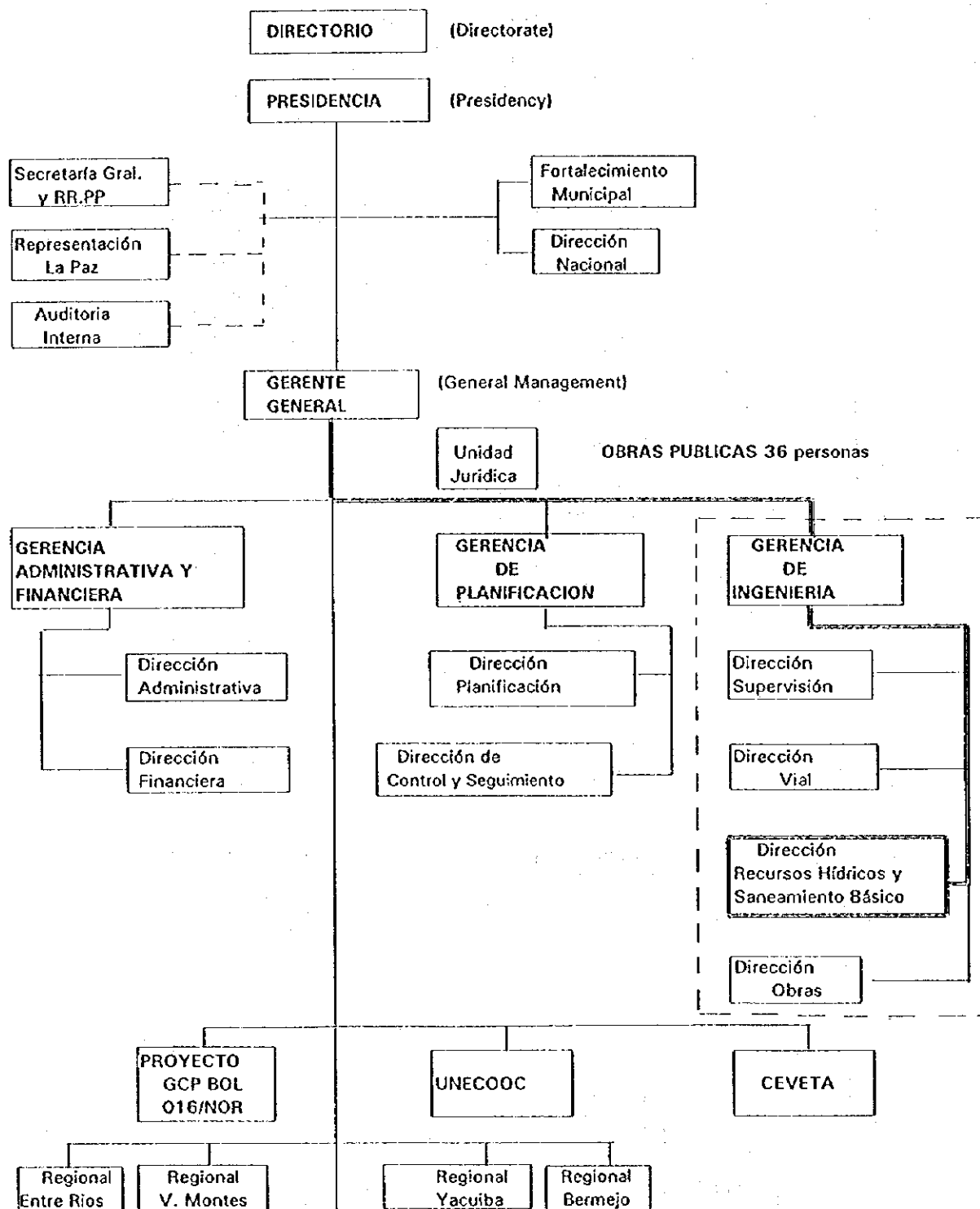
ORGANIZATION CHART OF CORDEPAZ



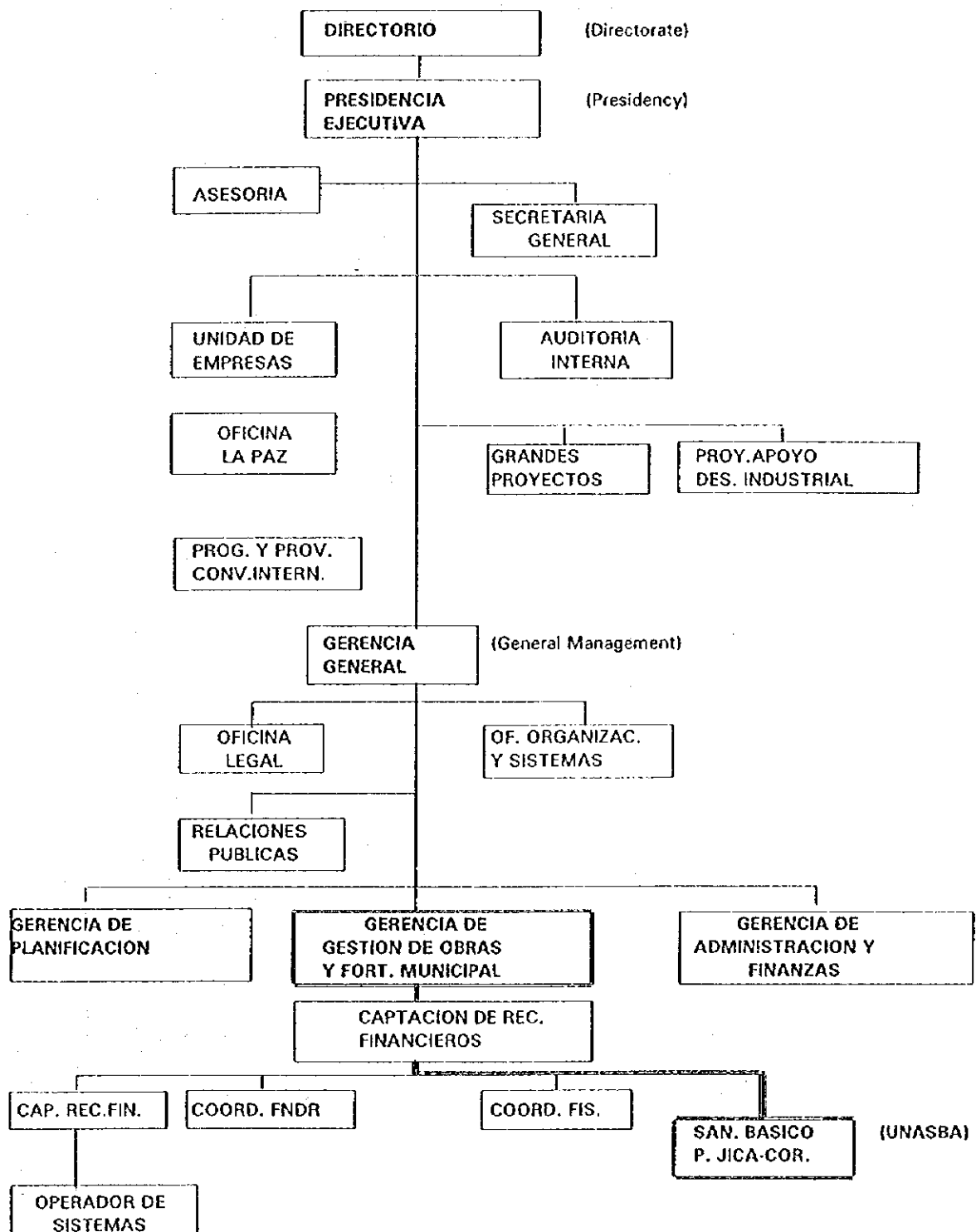
ORGANIZATION CHART OF CORDEOR



ORGANIGRAMA DE LA CORPORACION REGIONAL DE DESARROLLO DE TARIJA "CORDETAR"
 (Organizational chart of Regional Corporation of Development of Tarija "CORDETAR")



Organizational chart of "CORDECRUZ"



C O R D E C H
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
ASSETS					
Current Assets					
Cash & Deposits	5.796	3.011	2.503	2.563	3.535
Account Receivable	13.121	7.717	49.218	17.646	10.949
Advances	4.698	7.294	10.992	6.891	6.726
Inventories	2.517	5.264	5.746	5.951	5.694
Other Current Assets	1.703	2.721	100	126	93
Total Current Assets	27.835	26.007	68.559	33.177	26.997
Long-Term Loans	0	8.750	11.820	12.326	21.395
Investments					
Financial Investments	43.171	49.153	42.900	68.845	72.226
Other Investments	463	523	485	581	386
Total Investments	43.634	49.676	43.385	69.426	72.612
Fixed Assets					
Land	194.867	215.080	234.988	256.767	24.803
Buildings, Equipments & Others	22.861	26.678	32.172	34.746	43.434
Accumulated Depreciation (-)	-3.202	-5.447	-8.910	-12.749	-19.806
Wealth to Private & Public	0	67.205	0	0	0
Other Fixed Assets	0	3.768	3.689	3.882	4.501
Total Fixed Assets	214.526	307.284	261.939	282.646	52.932
Deferred Account					
Deferred Assets	56.733	43.681	0	0	78.218
Construction in Process	52.176	71.501	166.042	205.523	142.843
Total Deferred Account	108.909	115.182	166.042	205.523	221.061
Intangible Assets	0	0	0	0	0
TOTAL ASSETS	394.904	506.899	551.745	603.098	394.997

C O R D E C H
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
LIABILITIES					
Current Liabilities					
Borrowed Money	4,845	11,718	10,585	12,856	8,256
Account Payable on Construction	1,074	10,096	7,706	4,230	2,936
Accrued Expenses	10	14	233	343	710
Retention to pay	1,718	850	936	823	556
Other Accounts Payable	0	0	0	0	185
Reserves	5,553	8,614	8,287	5,981	5,879
Other Current Liabilities	171	315	1,043	867	36
Total Current Liabilities	13,371	31,607	28,790	25,100	18,558
Long-Term Debts	55,596	46,882	58,305	59,698	69,519
Reserves					
Reserves for Social Benefits	3,281	3,700	4,776	7,585	5,189
Other Reserves	0	0	0	0	317
Total Reserves	3,281	3,700	4,776	7,585	5,506
Other Liabilities & Deferred Credits					
Other Liabilities	5,577	14,606	41,259	17,507	17,240
Other Deferred Credits	57,279	44,634	640	0	0
Total Other Liab. & Def'd Credits	62,856	59,240	41,899	17,507	17,240
Total Liabilities	135,104	141,429	133,770	109,890	110,823
PROPERTIES					
Capital	33,291	127,603	149,147	195,679	90,913
Legal Reserves	188,039	188,039	188,039	188,039	12,807
Global Adjustment of Property	31,247	57,991	54,909	54,878	16,676
Adjustment of Inflation & Assets	594	-3,109	0	49,627	0
Transfer from Public Sectors	0	0	0	0	156,569
Retained Income	12,188	7,222	35,920	7,668	1,756
Surplus(Deficit(-)) of this period	-5,559	-12,276	-10,040	-2,683	5,453
Total Properties	239,800	365,470	417,975	493,208	284,174
Total of Liabilities and Properties	394,904	506,899	551,745	603,098	394,997

C O R D E C H

Statement of Income and Expenses

for the fiscal year ended December 31 (1990--1994)

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
INCOME					
Operation Income	2,959	4,548	5,983	3,034	2,566
Privilege of Hydrocarbons	33,706	39,139	31,011	34,715	28,532
Privilege of Mining	0	0	9	0	0
Participation Tax & others	1,941	2,434	3,462	6,074	14,884
Interests & Dividends	59	116	372	1,368	5,874
Donation & others	10,354	5,618	10,403	26,635	14,999
Financial Income	14,907	28,325	44,035	26,454	20,374
Other Income	84	911	230	157	223
Total Income	64,010	81,091	95,505	98,437	87,452
EXPENSES					
Personal Services	12,140	16,523	8,238	22,137	14,249
Non-personal Services	5,105	6,780	9,691	7,285	2,268
Materials & Supply	7,982	10,201	12,592	8,407	1,138
Expense on Fixed Asset & Finance	34,268	49,045	50,574	30,727	27,845
Amortization of Debts	565	2,774	14,251	18,716	20,963
Reserves	5,638	3,392	0	9,377	6,971
Transfer to Private & Public	3,871	4,652	3,873	4,471	7,948
Other Expenses	0	0	6,326	0	617
Total Expenses	69,569	93,367	105,545	101,120	81,999
Surplus (Deficit(-))	-5,559	-12,276	-10,040	-2,683	5,453

C O R D E C H
Fund Operation Table
--Trend of latest 4 years--

Unit: Million Bolivianos

			Jan-Dec'91	Jan-Dec'92	Jan-Dec'93	Jan-Dec'94
L O N G		Land	20	20	22	-232
	U	Investments	6	-7	26	4
	S	Buildings, Equipments & Others	4	5	3	8
	A	Long-term Loans	9	3	0	9
	G	Other Assets	71	-67	0	1
	E	Deferred Charges	6	51	40	15
		Total (A)	116	5	91	-195
(Ratio of own fund/usage) (B/A)			(95.7%)	(428.6%)	(89.0%)	(--)
T E R M F U N D I N G		Capital	94	22	47	-105
	R	Global Adjustment	27	-3	0	-38
	A	Reserves	0	3	51	-69
	I	Depreciation	2	4	4	7
	S	Retained Income	0	41	-18	-3
	I	Surplus of this year	-12	-10	-3	5
		sub-total of Own Fund (B)	111	57	81	-203
	G	Long-term Borrowings	-9	12	2	9
		Donation	0	0	0	0
		Other Fixed Liabilities	9	26	-24	0
S H O R T T E R M F U N D I N G		Deferred Credits	-12	-44	-1	0
		Total	99	51	58	-194
		Long-term Funding Surplus	-17	-46	-33	1
		Cash & Deposit	-3	0	0	1
	U	Account Receivable	-6	41	-31	-7
	S	Account Receivable in delay	0	0	0	0
	A	Advance	3	4	-4	0
	G	Inventories	3	1	0	0
	E	Other Current Assets	1	-3	0	0
		Total	-2	43	-35	-6
T E R M F U N D I N G	R	Short-term Borrowings	7	-1	2	-5
	A	Account Payable	8	-3	-4	-2
	S	Other Current Liabilities	0	1	0	0
	G	Total	15	-3	-2	-7
Short-term Funding Surplus			17	-46	33	-1

C O R D E P A Z
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
ASSETS					
Current Assets					
Cash & Deposits	1,510	1,925	6,034	2,581	2,720
Account Receivable	11,372	12,766	10,565	27,852	19,508
Financial Advance	43	42	117	2,821	2,432
Short-term Loans	2,236	2,945	4,066	17,315	16,369
Inventories	0	26	7		
Other Current Assets	0	0	0	572	1,172
Total Current Assets	15,161	17,704	20,789	51,141	42,201
Long-Term Loans	0	0	0	183	183
Investments					
Own Projects	114,747	178,716	269,324	45,447	46,593
Other Enterprises	8,649	10,585	43,968	0	0
Total Investments	123,396	189,301	313,292	45,447	46,593
Fixed Assets					
Land	1,686	1,860	3,049	3,660	3,660
Machineries, Equipments & Others	37,689	36,386	46,410	65,194	64,206
Accumulated Depreciation (-)	-13,460	-13,592	-21,542	-31,860	-31,602
Other Assets	921	1,136	1,108	533	1,926
Total Fixed Assets	26,836	25,790	29,025	37,527	38,190
Deferred Account					
Deferred Assets	0	0	0	0	0
Construction in Process	3,514	10,682	13,423	266,548	327,322
Total Deferred Account	3,514	10,682	13,423	266,548	327,322
Intangible Assets	0	0	0	0	6
TOTAL ASSETS	168,907	243,477	376,529	400,846	454,495

C O R D E P A Z
Balance Sheet
1990-1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
LIABILITIES					
Current Liabilities					
Borrowed Money	22	57	398	66	65
Account Payable	25	64	118	5,827	3,907
Accrued Expenses	41	43	90	17	24
Retention to pay	1,982	1,069	689	56	98
Other Accounts Payable	544	95	729	0	30
Other Current Liabilities	0	0	0	0	125
Total Current Liabilities	2,614	1,328	2,024	5,966	4,249
Long-Term Debts	271	235	7,092	26,061	26,058
Reserves	1,845	2,799	3,353	2,672	3,008
Other Liabilities & Deferred Credits	0	0	0	0	0
Total Liabilities	4,730	4,362	12,469	34,699	33,315
PROPERTIES					
Properties & Adjustment	67,198	127,300	130,009	156,985	157,064
Donations	48	87	23,570	8,612	12,019
Global Adjustment of Property	0	0	0	173	173
Transfer to Public & Private	0	0	0	7,462	20,961
Earned Income & Inflation Adj	53,031	68,730	110,340	0	0
Surplus of Revaluation	7,876	7,808	7,808	7,808	7,808
Retained Income	-709	-26,289	8,733	103,051	182,293
Surplus of this period	36,733	61,479	83,600	82,056	40,862
Total Properties	164,177	239,115	364,060	366,147	421,180
Total of Liabilities and Properties	168,907	243,477	376,529	400,846	454,495

C O R D E P A Z

Statement of Income and Expenses

for the fiscal year ended December 31 (1990--1994)

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
INCOME					
Operation Income	504	1,397	730	2,543	725
Privilege	2,700	7,136	13,825	13,086	2,858
Income from Value Added Tax	35,857	55,880	75,202	92,188	
Income from Custom-house	5,930	8,776	10,592	13,616	
Transfer from Central Adm. & Oth.					55,622
Other Own Current Income	69	299	2,567	6,103	1,919
Donation	8,153	9,104	8,156	5,542	
Other Income	39	86	311	71	
Total Income	53,252	82,678	111,383	133,149	61,124
EXPENSES					
Personal Services	5,320	6,388	5,359	11,418	13,246
Materials & Supplies	2,906	1,441	2,045	2,157	1,257
Non-personal Services	1,374	2,898	3,755	4,278	3,032
Depreciation on Fixed Assets	0	282	12	1,189	
Other Reserves	3,192	5,542	5,481	6,109	
Interest on Public Debt	286	131	843	12,074	2,053
Transfer to Private & Public	3,441	4,520	10,288	13,868	689
Adjustment for Inflation & Assets					-24
Other Expenses	0	0	0	0	9
Total Expenses	16,519	21,202	27,783	51,093	20,262
SURPLUS	36,733	61,476	83,600	82,056	40,862

CORDEPAZ
Fund Operation Table
--Trend of latest 4 years--

Unit: Million Bolivianos

		Jan-Dec' 91	Jan-Dec' 92	Jan-Dec' 93	Jan-Dec' 94
L O N G	Land	0	1	1	0
	U Investments	66	124	-268	1
	S Buildings, Equipments & Others	-1	10	19	-1
	A Long-term Loans	0	0	0	0
	G Other Assets	0	0	-1	1
	E Deferred Charges	6	3	253	61
Total (A)		71	138	4	62
(Ratio of own fund/usage) (B/A)		(105.6%)	(79.7%)	(675.0%)	(83.9%)
T E R M F U N D	Capital	50	3	27	0
	R Global Adjustment	16	41	8	13
	A Reserves	0	1	-111	1
	I Depreciation	0	8	10	0
	S Retained Income	-62	-27	11	-3
	I Surplus of this year	61	84	82	41
sub-total of Own Fund (B)		75	110	27	52
N G D	G Long-term Borrowings	0	7	19	0
	Donation	0	23	-14	3
	Other Fixed Liabilities	0	0	0	0
	Deferred Credits	0	0	0	0
Total		75	140	32	55
Long-term Funding Surplus		4	2	28	-7
S H O R T T E R M	Cash & Deposit	1	4	-3	0
	U Account Receivable	1	-2	18	-8
	S Account Receivable in delay	0	0	0	0
	A Advance	0	0	3	0
	G Inventories	0	0	0	0
	E Other Current Assets	1	1	14	-1
Total		3	3	32	-9
T E R M G	R Short-term Borrowings	0	0	0	0
	A Account Payable	-1	0	5	-2
	S Other Current Liabilities	0	1	-1	0
Total		-1	1	4	-2
Short-term Funding Surplus		-4	-2	-28	7

C O R D E O R
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
ASSETS					
Current Assets					
Cash & Deposits	2,300	1,651	9,322	7,628	14,285
Account Receivable	40,452	46,669	32,855	31,880	22,621
Financial Advance	0	118	240	340	3,150
Fund in Advance	70	1,308	36	88	128
Inventories	608	588	725	775	837
Other Current Assets	0	0	0	0	0
Total Current Assets	43,430	50,334	43,178	40,711	41,021
Long-Term Loans	42	42	0	0	0
Investments	13,088	6,385	6,102	6,207	5,731
Fixed Assets					
Buildings	0	0	0	0	3,302
Machineries, Equipments & Others	24,432	17,761	12,988	8,852	7,072
Accumulated Depreciation (-)	-14,577	-26	-5,698	-2,300	-2,300
Total Fixed Assets	9,855	17,735	7,290	6,552	8,074
Deferred Account					
Deferred Assets	0	0	475	475	187
Construction in Process	2,769	29,746	64,941	92,205	55,633
Total Deferred Account	2,769	29,746	65,416	92,680	55,820
Intangible Assets	242	259	1,725	2,059	4,610
TOTAL ASSETS	69,426	104,501	123,711	148,209	115,256

C O R D E O R
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
LIABILITIES					
Current Liabilities					
Borrowed Money	1,025	73	789	759	0
Account Payable on Construction	11,139	258	3,953	4,679	2,950
Accrued Expenses	0	75	534	203	205
Retention to pay	606	90	191	90	48
Other Accounts Payable	3,107	319	1,141	1,052	3,693
Short-Term Foreign Debts	0	0	0	0	2,323
Reserve for Incollectable Accounts	0	0	733	14,923	14,963
Other Current Liabilities	0	0	30	0	86
Total Current Liabilities	15,877	815	7,371	21,706	24,268
Long-Term Debts	1,308	1,795	3,114	10,184	10,420
Reserves					
Reserves for Social Benefits	618	2,758	2,786	2,481	767
Other Reserves	0	0	89	0	639
Total Reserves	618	2,758	2,875	2,481	1,406
Other Liabilities & Deferred Credits					
Other Liabilities	242	0	0	0	0
Other Deferred Credits	0	6,694	0	0	0
Total Other Liab. & Def'd Credits	242	6,694	0	0	0
Total Liabilities	18,045	12,062	13,360	34,371	36,094
PROPERTIES					
Capital	8,153	4,682	14,937	14,368	14,368
Donations	2,586	8,764	18,528	22,428	5,227
Global Adjustment of Property	3,262	10	4,376	5,198	23,068
Transfer from Public & Private Sec.	0	0	0	0	21,905
Public Property	0	-537	640	750	0
Retained Income	40,453	74,838	70,781	61,566	15
Surplus of this period	-3,073	4,682	1,089	9,528	14,579
Total Properties	51,381	92,439	110,351	113,838	79,162
Total of Liabilities and Properties	69,426	104,501	123,711	148,209	115,256

C O R D E O R

Statement of Income and Expenses

for the fiscal year ended December 31 (1990--1994)

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
INCOME					
Operation Income	0	71	145	140	262
Privilege	1,473	1,504	1,880	8,490	14,299
Privilege for compensation	2,879	0	0	0	0
Difference in Exchange Operation	0	3,733	0	0	0
Other Own Current Income	505	93	216	168	569
Donation	836	0	2,062	0	0
Transfer from Central Administration	3,428	3,852	5,691	6,924	4,596
Transfer from Public Enterprises	0	120	315	95	0
Adjustment for Inflation & Assets	0	0	0	2,667	0
Other Income	0	0	0	0	0
Total Income	9,121	9,373	10,309	18,484	19,726
EXPENSES					
Personal Services	3,341	2,965	4,515	3,985	4,002
Materials & Supplies	678	283	454	463	389
Non-personal Services	620	790	2,213	697	614
Depreciation on Fixed Assets	6,273	26	1,097	36	0
Reserve for Incollectable a/c	208	0	732	3,578	0
Interest of Foreign Debt	0	66	78	42	75
Transfer to Private & Public	517	71	115	145	35
Other Expenses	557	490	16	10	32
Total Expenses	12,194	4,691	9,220	8,956	5,147
SURPLUS	-3,073	4,682	1,089	9,528	14,579

C O R D E O R
Fund Operation Table
--Trend of latest 4 years--

Unit: Million Bolivianos

		Jan-Dec'91	Jan-Dec'92	Jan-Dec'93	Jan-Dec'94
	Land	0	0	0	0
U	Investments	-7	0	0	-1
S	Buildings, Equipments & Others	-7	-5	-1	2
A	Long-term Loans	0	0	0	0
L	G Other Assets	0	2	0	3
O	E Deferred Charges	27	36	27	-37
N	Total (A)	13	33	23	-33
G	(Ratio of own fund/usage) (B/A)	(176.9%)	(45.5%)	(39.1%)	(--)
T	Capital	-4	10	0	0
E	R Global Adjustment	-3	1	1	18
R	A Reserves	3	1	14	-2
M	I Depreciation	-15	6	-3	0
S	Retained Income	37	-7	-13	-18
F	I Surplus of this year	5	1	10	15
U	N sub-total of Own Fund (B)	23	15	9	-17
N	G Long-term Borrowings	0	1	7	0
D	Donation	6	10	4	-17
	Other Fixed Liabilities	0	0	0	0
	Deferred Credits	6	-6	0	0
	Total	35	20	20	-31
	Long-term Funding Surplus	22	-13	-3	-1
	Cash & Deposit	-1	8	-2	7
S	U Account Receivable	7	-14	-1	-9
H	S Account Receivable in delay	0	0	0	0
O	A Advance	1	-1	0	3
R	G Inventories	0	0	0	0
T	E Other Current Assets	0	0	0	0
	Total	7	-7	-3	1
T	R Short-term Borrowings	-1	1	0	1
E	A Account Payable	-14	5	0	1
R	S Other Current Liabilities	0	0	0	0
M	G Total	-15	6	0	2
	Short-term Funding Surplus	-22	13	3	1

C O D E T A R
Balance Sheet
1990-1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
ASSETS					
Current Assets					
Cash & Deposits	934	1,491	11,738	4,459	10,886
Account for collection	29,657	30,596	27,926	41,893	33,815
Account Receivable	38,083	32,411	33,788	11,495	6,938
Short-Term Loans	1,370	1,267	228	1,295	1,084
Inventories	2,190	2,619	3,846	1,854	946
Contingent Account Contra	1,878	2,078	0	0	0
Other Current Assets	51	5,317	2,781	3,420	2,593
Total Current Assets	74,163	75,779	80,307	64,416	56,262
Long-Term Loans	0	0	11,630	1,073	1,070
Investments					
Own Investments	47,641	52,690	34,766	36,689	40,000
Transferred Enterprise	118,222	134,847	80,372	76,236	78,905
Other Investments	70,413	94,833	135,558	163,772	165,430
Bonds & Securities	0	0	18,437	10,350	10,886
Total Investments	236,276	282,370	269,133	287,047	295,221
Fixed Assets					
Land	1,290	5,775	6,256	6,835	6,981
Machineries, Equipments & Others	8,949	14,640	15,442	17,024	18,011
Accumulated Depreciation (-)	-5,569	-3,155	-6,352	-9,963	-12,222
Non-depreciated Fixed Assets	31	159	604	4,243	4,432
Total Fixed Assets	4,701	17,419	15,950	18,139	17,202
Deferred Account					
Deferred Assets	79	52	0	16	14
Construction in Process	71,286	85,074	111,946	158,382	186,253
Total Deferred Account	71,365	85,126	111,946	158,398	186,267
Intangible Assets	0	0	0	0	0
TOTAL ASSETS	386,505	460,694	488,966	529,073	556,022

C O D E T A R
Balance Sheet
1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
LIABILITIES					
Current Liabilities					
Borrowed Money	0	0	0	3,282	4,956
Account Payable	8,139	5,534	2,409	4,990	465
Other Accounts Payable	0	0	8,702	7,570	1,560
Reserve for Incollectable Account	8,075	9,179	12,607	6,194	11,872
Other Current Liabilities	0	0	0	0	0
Total Current Liabilities	16,214	14,713	23,718	22,036	18,853
Long-Term Debts					
Domestic Borrowed Money	0	0	6,068	19,019	21,920
External Borrowed Money	45,913	54,291	67,034	74,348	72,313
Total Long-Term Debt	45,913	54,291	73,102	93,367	94,233
Reserves					
Reserve for Social Benefits	2,291	3,617	4,084	6,166	2,750
Other Reserves	24,102	31,563	7,783	7,783	7,783
Total Reserves	26,393	35,180	11,867	13,949	10,533
Other Liabilities & Deferred Credits	0	0	0	0	0
Contingent Account	5,787	6,401	0	0	0
Total Liabilities	94,307	110,585	108,687	129,352	123,619
PROPERTIES					
Capital	47,201	47,201	23,346	47,201	47,062
Donations	0	0	1,866	-20,753	0
Global Adjustment of Property	123,734	155,750	191,278	226,023	244,804
Revaluation of Investments	0	0	0	0	14,761
Revaluation of Fixed Assets	29,774	39,056	39,049	39,049	39,049
Public Property	0	0	5,402	17,267	21,741
Retained Income	83,391	88,150	106,483	87,479	59,350
Surplus of this period	8,098	19,952	12,855	3,455	5,636
Total Properties	292,198	350,109	380,279	399,721	432,403
Total of Liabilities and Properties	386,505	460,694	488,966	529,073	556,022

C O D E T A R

Statement of Income and Expenses

for the fiscal year ended December 31 (1990--1994)

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
INCOME					
Operation Income	3.484	1.993	1.821	1.843	380
Privilege of Hydrocarbons	34.499	49.041	35.626	28.673	34.145
Privilege of Forestry	0	42	54	29	123
Other Own Current Income	0	0	0	0	0
Donation	3.710	4.986	11.249	0	0
Co-Participation Tax	0	2.453	0	4.843	3.411
Transfer from T.G.N.	930	0	3.323	1.474	5.959
Other Transfer	0	2.722	0	0	533
Adjustment for Inflation	0	2.754	0	0	0
Other Income	13.376	158	26.840	7.989	1.036
Total Income	55.999	64.149	78.913	44.851	45.587
EXPENSES					
Personal Services	5.584	7.711	11.336	14.118	12.779
Materials & Supplies	4.680	0	1.748	1.382	827
Non-personal Services	2.103	4.561	3.129	2.900	2.270
Depreciation on Fixed Assets	659	2.857	3.134	2.763	1.724
Reserves	20.898	27.376	3.597	2.933	5.722
Revaluation of Investments	0	0	0	0	14.761
Adjustment for Inflation & Others	12.994	0	41.406	15.380	903
Transfer to Private & Public	983	1.692	1.708	1.920	964
Other Expenses	0	0	0	0	1
Total Expenses	47.901	44.197	66.058	41.396	39.951
SURPLUS	8.098	19.952	12.855	3.455	5.636

C O D E T A R
Fund Operation Table
--Trend of latest 4 years--

Unit: Million Bolivianos

		Jan-Dec' 91	Jan-Dec' 92	Jan-Dec' 93	Jan-Dec' 94
	Land	1	1	1	0
	Investments	16	-13	18	8
	Machineries, Equipments & Others	6	1	2	1
	Long-term Loans	0	12	-11	0
	Other Assets	1	0	3	0
	Deferred Charges	14	27	47	27
	Total (A)	71	28	60	36
	(Ratio of own fund/usage)	(91.5%)	(25.0%)	(81.7%)	(27.8%)
	(B/A)				
	Capital	0	-24	24	0
	Global Adjustment	32	35	35	18
	Reserves	18	-18	15	16
	Depreciation	-2	3	4	2
	Retained Income	-3	-2	-32	-32
	Surplus of this year	20	13	3	6
	sub-total of Own Fund (B)	65	7	49	10
	Long-term Borrowings	8	13	20	1
	Donation	0	2	-23	20
	Other Fixed Liabilities	1	-6	0	0
	Deferred Credits	0	0	0	0
	Total	74	16	46	31
	Long-term Funding Surplus	3	-12	-14	-5
	Cash & Deposit	1	10	-7	6
	Account for collection	1	-3	14	-8
	Account Receivable	-6	1	-22	-4
	Advance	0	-1	1	0
	Inventories	1	1	-2	-1
	Other Current Assets	5	-5	0	-1
	Total	2	3	-16	-8
	Short-term Borrowings	0	6	3	2
	Account Payable	-2	5	2	-11
	Other Current Liabilities	1	4	-7	6
	Total	-1	15	-2	-3
	Short-term Funding Surplus	-3	12	14	5

C O R D E C R U Z

Balance Sheet

1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
ASSETS					
Current Assets					
Cash & Deposits	1,773	1,004	2,090	38,152	34,581
Account Receivable	89,509	81,064	119,542	128,520	131,770
Account Receivable in delay	18,311	18,215	12,823	9,980	9,490
Financial Advance	0	0	0	0	0
Short-term Loans	65,724	99,682	101,626	120,381	122,220
Inventories	6,326	5,279	5,906	4,950	4,649
Other Current Assets	4	4	13	1,296	1,192
Total Current Assets	181,647	205,248	242,000	303,279	303,902
Long-Term Loans	184,681	191,011	246,555	258,591	277,585
Investments	97,002	165,534	173,557	118,626	124,451
Fixed Assets					
Land	9,716	9,716	16,138	20,201	21,056
Buildings, Vehicles & Others	8,431	8,509	14,055	20,513	25,638
Accumulated Depreciation(-)	0	0	0	-5,415	0
Other Assets	4,758	5,149	8,173	0	8
Total Fixed Assets	22,905	23,374	38,366	35,299	46,702
Deferred Account					
Deferred Assets	0	0	0	40,963	30,729
Construction in Process	235,412	376,392	635,678	807,891	683,408
Total Deferred Account	235,412	376,392	635,678	848,854	714,137
Intangible Assets	23,554	31,309	27,302	8,468	10,658
TOTAL ASSETS	745,201	992,868	1,363,458	1,573,117	1,477,435

C O R D E C R U Z

Balance Sheet

1990--1994

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
LIABILITIES					
Current Liabilities					
Account Payable	1,112	6,613	21,599	12,084	10,868
Short-Term Domestic Debts	1,019	1,517	448	31,986	54,395
Short-Term Foreign Debts	0	0	0	610	1,682
Retention to pay	609	543	680	352	679
Other Current Liabilities	0	0	0	0	21
Total Current Liabilities	2,740	8,673	22,727	45,032	67,645
Long-Term Debts					
Domestic Debts	12,692	46,659	88,408	159,166	169,765
Foreign Debts	0	0	8,568	0	25,135
Total Long-Term Debts	12,692	46,659	96,976	159,166	194,899
Reserves					
Reserves for Social Benefits	4,893	0	9,791		5,601
Other Reserves	106,382	125,543	126,648	165,753	139,209
Total Reserves	111,275	125,543	136,439	165,753	144,810
Other Liabilities & Deferred Credits					
Other Liabilities	3,319	3,798	4,142	4,331	6,935
Other Deferred Credits	0	0	0	0	0
Total Other Liab. & Def'd Credits	3,319	3,798	4,142	4,331	6,935
Total Liabilities	130,026	184,673	260,284	374,282	414,289
PROPERTIES					
Capital	252,532	382,551	629,367	418,362	909,760
Global Adjustment of Property	211,616	170,073	109,729	133,778	
Depreciation Fund	2,422	2,672	8,053		9,325
Surplus on Inventory Revaluation	0	0		50,522	
Surplus on Other Assets Revaluation	54,290	59,879	65,468	65,467	65,467
Retained Income	0	0	0	501,733	0
Surplus of this period	94,315	193,020	290,557	28,973	78,594
Total Properties	615,175	808,195	1,103,174	1,198,835	1,063,146
Total of Liabilities and Properties	745,201	992,868	1,363,458	1,573,117	1,477,435

C O R D E C R U Z

Statement of Income and Expenses

for the fiscal year ended December 31 (1990---1994)

Unit: Thousand Bolivianos

	1990	1991	1992	1993	1994
INCOME					
Operation Income	6.165	34.027	4.369	7.589	7.428
Privilege	59.693	75.033	57.184	71.093	72.040
Participation in Tax	22.848	30.824	47.745	56.114	36.629
Difference in Exchange Operation	0	6	0	1	0
Other Own Current Income	0	0	0	9.485	0
Adjustment of the previous period	0	0	62.342	9.201	181
Adjustment of Inflation	44.821	113.457	259.040	0	73.079
Other Income	662	46	5	55	44
Total Income	134.189	253.393	430.685	153.538	189.401
EXPENSES					
Personal Services	22.772	30.126	33.033	39.676	30.359
Non-personal Services	7.157	7.530	11.183	8.250	9.584
Depreciation on Fixed Assets	0	0	3.897	1.002	954
Loss on Sale of Fixed Assets	0	0	5.719	17.722	0
Adjustment of the previous period	2.104	960	10.408	0	0
Adjustment for Inflation	0	14.084	19.941	39.059	61.341
Transfer to Private & Public	7.837	7.671	53.981	18.833	8.525
Other Expenses	4	2	1.966	23	44
Total Expenses	39.874	60.373	140.128	124.565	110.807
SURPLUS	94.315	193.020	290.557	28.973	78.594

C O R D E C R U Z
Fund Operation Table
--Trend of latest 4 years--

Unit: Million Bolivianos

		Jan-Dec' 91	Jan-Dec' 92	Jan-Dec' 93	Jan-Dec' 94
	Land	0	6	4	1
U	Investments	69	8	-55	5
S	Buildings, Vehicles & Others	0	6	6	5
A	Long-term Loans	6	56	12	19
L G	Other Assets	8	-1	-35	8
O E	Deferred Charges	141	259	223	-135
N	Total (A)	224	334	155	-97
G	(Ratio of own fund/usage) (B/A)	(92.0%)	(91.6%)	(84.5%)	(--)
T	Capital	36	246	-210	492
E R	Global Adjustment	-42	-60	24	-134
R A	Reserves	20	17	80	-72
M I	Depreciation	0	5	-3	9
S	Retained Income	-1	-193	211	-531
F I	Surplus of this year	193	291	29	79
C X	sub-total of Own Fund (B)	206	306	131	-157
N G	Long-term Borrowings	34	50	62	36
D	Donation	0	0	0	0
	Other Fixed Liabilities	0	0	0	0
	Deferred Credits	0	1	0	3
	Total	240	357	193	-118
	Long-term Funding Surplus	16	23	38	-21
	Cash & Deposit	-1	1	36	3
S U	Account Receivable	-9	38	9	3
H S	Account Receivable in delay	0	-5	-3	0
O A	Advance	0	0	0	0
R G	Inventories	-1	1	-1	0
T E	Other Current Assets	34	2	19	-5
	Total	23	37	60	1
T R	Short-term Borrowings	1	-1	32	23
E A	Account Payable	6	15	-10	-1
R S	Other Current Liabilities	0	0	0	0
M G	Total	7	14	22	22
	Short-term Funding Surplus	-16	-23	-38	21

B. WATER SUPPLY DATABASE

- 1. Structure and Contents of Data Tables**
- 2. Data Input Formats**
- 3. Some Samples of Data Output**

B. WATER SUPPLY DATABASE

1. Structure and Contents of Data Tables
2. Data Input Formats
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Structure and contents of data tables

BNAME.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BNum	A	9	*	Number
2	Nombre de Bloque	A	30		Name of Block
3	EAno	A	4		Established Year
4	Area	N			Total Area (km2)
5	Nombre Original	A	20		Original Name

SOCLOB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	Rural%	N			Percent of Rural
3	Urbano%	N			Percent of Urban
4	Localins	N			Number of Existing local administrative office
5	Y76 Famil	N			Number of 1976 Household
6	Y76 Pobla	N			1976 Population
7	Y92 Famil	N			Number of 1992 Household
8	Y92 Pobla	N			1992 Population
9	Near Year	A	4		Latest Year
10	NYr Famil	N			Number of Latest Year Household
11	NYr Pobla	N			Latest Year Population
12	Esc Elm	N			Number of Elementary School
13	Tecn Jun	N			Number of Junior High School
14	Tecn Supo	N			Number of Senior High School
15	Bancos	N			Number of Banks
16	Aeropuert	N			Number of Airports
17	Hospital	N			Number of Hospital

EJPOB.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	Y95 UPob	N			1995 Urban Population
3	Y00 UPob	N			2000 Urban Population
4	Y05 UPob	N			2005 Urban Population
5	Y10 UPob	N			2010 Urban Population
6	Y15 UPob	N			2015 Urban Population
7	Y95 RPob	N			1995 Rural Population
8	Y00 RPob	N			2000 Rural Population
9	Y05 RPob	N			2005 Rural Population
10	Y10 RPob	N			2010 Rural Population
11	Y15 RPob	N			2015 Rural Population

SANI.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	UCD_Publi	N			Number of house with water flush toilet, public sewerage, in urban area
3	UCD_Septi	N			Number of house with water flush toilet, septic tank, in urban area
4	UCD_Otros	N			Number of house with water flush toilet, others in urban area
5	USD_Publi	N			Number of house without water flush toilet, public sewerage, in urban area
6	USD_Septi	N			Number of house without water flush toilet, septic tank, in urban area
7	USD_Otros	N			Number of house without water flush toilet, others in urban area
8	U_No_Sani	N			Number of house without sanitary toilet, in urban area
9	RCD_Publi	N			Number of house with water flush toilet, public sewerage, in rural area
10	RCD_Septi	N			Number of house with water flush toilet, septic tank, in rural area
11	RCD_Otros	N			Number of house with water flush toilet, others in rural area
12	RSD_Publi	N			Number of house without water flush toilet, public sewerage, in rural area
13	RSD_Septi	N			Number of house without water flush toilet, septic tank, in rural area
14	RSD_Otros	N			Number of house without water flush toilet, others in rural area
15	R_No_Sani	N			Number of house without sanitary toilet, in rural area

WTRS.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	Res No.	A	2	*	Water Source Number
3	RSTipo	A	35		Water Source Type
4	Implem	A	22		Implemented Organization, Person, etc.
5	Nivel	A	12		Level of Service
6	Propiedad	A	30		Owner Ship
7	EquipoExt	A	32		Water Abstracting Method, Equipment
8	Empleo	A	32		Water Usage
9	Calidad	A	35		Water Quality
10	ProEstacion	A	15		Seasonal Production Status
11	CapPromedio	A	20		Average Capacity (m3/day)
12	NoPoblCober	A	25		Number of Served Population
13	NoFamiCober	A	25		Number of Served Family

WELL.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	PozoNo.	A	2	*	Well Number
3	Profundidad	A	5		Depth (m)
4	SWL	A	5		Statistic Water Level (m)
5	ProdMinima	A	5		Specific capture (m3/h)
6	T-Valor	A	5		Transmissibility (m2/h)
7	InformAcuifero	A	1		Aquifer information
8	AnoConstruc	A	4		Construction Year
9	Diametro	A	6		Diameter
10	Estructura	A	1		Technical Structure
11	EnUsooDesuso	A	1		Productive
12	NombreTecnInvestiga	A	30		Name of Technical Investigation
13	FechaInvestiga	A	10		Date of Investigation
14	FuenteInformacion	A	30		Spring Information

WSB2.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	Identifi No	N			Identification Number
3	Nombre/Propietario	A	20		Name / Owner of System
4	Año d. Construcción	A	4		Construction Year
5	Area de Servicio	N			Size of Service Area
6	Pob.en Servicio	N			Population in Service Area
7	Fam.en Servicio	N			Household in Service Area
8	Pob.ServP PilasCom	N			Pop. Served by Communal Faucets
9	Fam.ServP PilasCom	N			HH. Served by Communal Faucets
10	Number of PilasCom	N			Number of Served by Communal Faucets
11	Pob.por 1 Pilascom	N			Pop. per Faucets
12	Fam.por 1 Pilascom	N			HH. per Faucets
13	Año de Modernizar	A	4		Year of Update
14	A-Area de Servicio	N			Size of Service Area
15	A-Pob.en Servicio	N			Pop.in Service Area
16	A-Fam.en Servicio	N			HH. in Service Area
17	A-Pob.ServP PilasCom	N			Pop. Served by Communal Faucets
18	A-Number of PilasCom	N			HH. Served by Communal Faucets
19	A-Pob.por 1 PilasCom	N			Pop. per by Communal Faucets
20	A-Fam.por 1 PilasCom	N			HH. per. by Communal Faucets
21	Capacidad de la Fuente	N			Source Capacity
22	Prod.Mensual Min	N			Min. Monthly Production
23	Prod.Anual	N			Annual Monthly Production
24	Long.Transmisión Pri	N			Length of Transmission Mains
25	Long.Distribución Pri	N			Length of Distribution Mains
26	Cantidad de Reservas	N			Reservoirs
27	Volumen TT de Reservas	N			Total Volume of Reservoirs
28	Pilas Com CoContador	N			Metered Communal Faucets
29	Pilas Com SiContador	N			Unmetered Communal Faucets
30	Serv.Agua Horas/día	N			Dirty Water
31	Agua Sucia/TodosDía	A	1		Every Day
32	Agua Sucia/Una Seman	A	1		Once a Week
33	Agua Sucia/Una Mes	A	1		Once a Month
34	Agua Sucia/Ocasional	A	1		Occasionally
35	Agua Calí-Buen Sabor	A	1		Good Taste
36	Agua Calí-Salado	A	1		Salty Taste
37	Agua Calí-Lenoso	A	1		Woody Taste
38	Agua Calí-Metalico	A	1		Metalic Taste
39	Agua Calí-Otros	A	1		Others Taste
40	Interrup-FalloPoten	N			Supply Interruption - Power Failure
41	Interrup-FalloBomba	N			Supply Interruption - Pump Breakdown
42	Interrup-FalloTuber	N			Supply Interruption - Pipe Burst
43	Interrup-FalloOtros	N			Supply Interruption - Others
44	Presión-PilAdecuada	N			Water Pressure - Adeg.
45	Presión-PilInadecuada	N			Water Pressure - Inadeg.
46	Person-Mantenimient	N			Maintenance Stuff

WSB2.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
47	Person-Administrati	N			Administrative Staff
48	Person-Recaudadores	N			Collectors
49	Repararan-Comercial	A	1		Repair - Local Tradesmen
50	Repararan-11	A	1		Repair - 11
51	Repararan-12	A	1		Repair - 12
52	Repararan-13	A	1		Repair - 13
53	Gasto-Anos	A	4		Annual Expenditures
54	Gastos-Salarios	N			A/E - Wages
55	Gastos-Comb/Quil/Mat	N			A/E - Fuel, Chemicals, Materials
56	Gastos-Transporte	N			A/E - Transport
57	Gastos-Reparaciones	N			A/E - Repairs
58	Gastos-Reembolso	N			A/E - Loan Repayment
59	Gastos-Otros	N			A/E - Others
60	Tarif-Anos	A	4		Tarif - Annual
61	Tarif-PagosP.Cubos	N			Tarif - Per Pail
62	Tarif-PagosP.Volumen	N			Tarif - Per Volume
63	Tarif-PagosP.Viviend	N			Tarif - Per Household
64	Tarif-Otros	N			Tarif - Others
65	Factu-Anos	A	4		Bill - Annual
66	Factu-ConsumoPiiCom	N			Bill - Public Faucet Consumers
67	Factu-ConsumoPiiDom	N			Bill - Household Connection Consumers
68	Factu-SubsidiosEspe	N			Bill - Expected Subsidies
69	Factu-Otros	N			Bill - Others
70	Ingreso-Anos	A	4		Income - Annual
71	Ing-PagoP.ConPiiCom	N			Income - Payment by P.F. Consumers
72	Ing-PagoP.ConPiiDim	N			Income - H.C. Consumers
73	Ing-Subsidios	N			Income - Subsidies
74	Ing-Otros	N			Income - Others

WSB3.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
1	BloqueNo	A	9	*	Block Number
2	Identifi No	N			Identification Number
3	Nombre/Propietario	A	20		Name/Owner of System
4	Miembros d.Comite	N			Committee Member
5	Ano d.Construccion	A	4		Established Year
6	Area de Servicio	N			Service Area
7	Pob.en Servicio	N			Served Population
8	Fila en Servicio	N			No. of Served Household
9	Area sin Servicio	N			Area without Served
10	Pob. sin Servicio	N			Population without Served
11	Fila. sin Servicio	N			No. of Household without Served
12	Conec.Domiciliarias	N			Number of House with pipe Connection
13	Pob. SerP. Conec.Dom.	N			Population served by pipe Connection
14	Fam. SerP. Conec.Dom.	N			Number of Household served by pipe connection
15	Ano de Modernizar	A	4		Year of Update
16	A Area Servida	N			Actual Served Area
17	A Poblacion Servida	N			Actual Served Population
18	A Fila.Servida	N			Actual Served No. of Household
19	A Area sin Servicio	N			Actual Area without Served
20	A Pob.sin Servicio	N			Actual Population without Served
21	A Conec.Domiciliaria	N			Actual Number of House Connection
22	Fuente No. A	N			Water Source A No.
23	Capacidad dl.Fuente A	N			Capacity of Water Source A (m3/h)
24	Tiempo de Operacion A	N			Operating Time of Water Source A (hr/d)
25	Fuente No. B	N			Water Source B No.
26	CBpBcdBd dl.Fuente B	N			Capacity of Water Source B (m3/h)
27	Tiempo de Operacion B	N			Operating Time of Water Source B (hr/d)
28	Fuente No. C	N			Water Source C No.
29	CCpCcdCd dl.Fuente C	N			Capacity of Water Source C (m3/h)
30	Tiempo de Operacion C	N			Operating Time of Water Source C (hr/d)
31	Cant Otras Fuentes D	N			Other Water Source D No.
32	Capacidad Total D	N			Capacity of Water Source D (m3/h)
33	Produccion Total D	N			Operating Time of Water Source D (hr/d)
34	Prod.Ano Anterior	A	4		Last Year Production
35	P-Enero	N			Production - Jan. (m3/month)
36	P-Febrero	N			Production - Feb. (m3/month)
37	P-Marzo	N			Production - Mar. (m3/month)
38	P-Abril	N			Production - Apr. (m3/month)
39	P-Mayo	N			Production - May. (m3/month)
40	P-Junio	N			Production - Jun. (m3/month)
41	P-Julio	N			Production - July. (m3/month)
42	P-Agosto	N			Production - Aug. (m3/month)
43	P-Septiembre	N			Production - Sep. (m3/month)
44	P-Octubre	N			Production - Oct. (m3/month)
45	P-Noviembre	N			Production - Nov. (m3/month)
46	P-Diciembre	N			Production - Dec. (m3/month)
47	Long.TransmisionPri	N			Length of Transmission Mains (m)

WSB3.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
48	Lon.DistribucionPri	N			Length of Distribution Mains (m)
49	Numero de Reservas	N			Reservoirs
50	Volumen TT Reservas	N			Total Volume of Reservoirs (m3)
51	Hr/d de Dotacion	N			Daily service hours (hr/day)
52	Turbiedad-Todos ls. Dias	A	1		Dirty Water - Everyday
53	Turbiedad-1v/Semana	A	1		Dirty Water - Once Week
54	Turbiedad-1v/Mes	A	1		Dirty Water - Once a Month
55	Turbiedad-Ocasional	A	1		Dirty Water - Occasionally
56	Buen Sabor	A	1		Good Taste
57	Sabor-Salado	A	1		Salty Taste
58	Sabor-Lenosos	A	1		Woody Taste
59	Sabor-Metalico	A	1		Metalic Taste
60	Otros Sabores	A	1		Others Taste
61	Falla-Potencia	N			Power Failure
62	Falla-Bomba	N			Pump Breakdown
63	Falla-Tuberías	N			Pipe Burst
64	Falla-Otros	N			Others Failures
65	Presion-2 piso	N			Supply, 2nd floor (% of total)
66	Presion-1 piso	N			Supply, ground floor (% of total)
67	Presion Inadecuada	N			Inadequate press (% of total)
68	Conec.Dom. C/Contador	N			No. of Metered Connection/H.C. Consumers
69	Consumo-ConecDom	N			Consumption /H.C. Consumers (m3/month)
70	ConecDom S/Contador	N			No. of Unmetered connection
71	Pilas Com C/Contador	N			No. of Metered Public Fawcet/PF. Consumers
72	Consumo-Pilas Com	N			Consumption/PF. Consumer (m3/month)
73	Pilas Com S/Contador	N			No. of Unmetered Public Fawcet
74	Inst.ConecC/Contador	N			No. of Metered Connection/Institutional Consumers
75	Consumo	N			Consumption/Institutional Consumers (m3/day)
76	Inst.ConecS/Contador	N			No. of Unmetered Connection/Institutional Consumers
77	Comer-ConecC/Contador	N			No. of Metered Connection/Commercial Consumers
78	Comer-Consumo	N			Consumption/Commercial Consumers (m3/day)
79	Comer-ConecS/Contador	N			No. of Unmetered Connection/Commercial Consumers
80	Ind.ConecC/Contador	N			No. of Metered Connection/Industrial Consumers
81	Ind.Consumo	N			Consumption/Industrial Consumers (m3/day)
82	Ind.ConecS/Contador	N			No. of Unmetered Connection/Industrial Consumers
83	Person-TecnicoProf	N			Person - Technical Professional
84	Person-Operador	N			Person - Operator
85	Person-Apoyo Tecnico	N			Person - Technical Support
86	Person-Apoyo Adminis	N			Person - Administrative Support
87	Person-Cobradores	N			Person - Collectors
88	Consumo C/Contador Ano	A	4		Metered Consumption Annual
89	C-Enero	N			C - Jan. (m3/month)
90	C-Febrero	N			C - Feb. (m3/month)
91	C-Marzo	N			C - Mar. (m3/month)
92	C-Abril	N			C - Apr. (m3/month)
93	C-Mayo	N			C - May. (m3/month)
94	C-Junio	N			C - Jun. (m3/month)

WSB3.DB Structure

Field No.	Field Name	Type	Size	Key	Contents
95	C-Julio	N			C - July. (m3/month)
96	C-Agosto	N			C - Aug. (m3/month)
97	C-Septiembre	N			C - Sept. (m3/month)
98	C-Octubre	N			C - Oct. (m3/month)
99	C-Noviembre	N			C - Nov. (m3/month)
100	C-Diciembre	N			C - Dec. (m3/month)
101	Consumo Año Pasado	A	4		Last Year
102	Domiciliario	N			Domestic (m3/month)
103	Institucional	N			Institutional (m3/month)
104	Comercial	N			Commercial (m3/month)
105	Industrial	N			Industrial (m3/month)
106	Otros	N			Others (m3/month)
107	Gastos-Anual	A	4		Annual Expenditure (x1000 Bs/year)
108	Gastos-Salarios	N			Wages (x1000 Bs/year)
109	Gastos-Comb/Quil/Mal	N			Fuel, Chemicals, Materia (x1000 Bs/year)
110	Gastos-Transporte	N			Transport (x1000 Bs/year)
111	Gastos-Reparaciones	N			Repair (x1000 Bs/year)
112	Gastos-Reembolso	N			Loan Repayment (x1000 Bs/year)
113	Gastos-Otros	N			Others (x1000 Bs/year)
114	Tarif-Res promedio/mes	N			Tarif
115	Tarif-Inst promedio/mes	N			Tarif - Inst - Average/Month
116	Tarif-Comer promedio/mes	N			Tarif - Indu-Commercial- Average/Month
117	Tarif-Ind 0-10m3/mes	N			Tarif - Indu- 0-10 m3/month
118	Tarif-Ind 11-20m3/mes	N			Tarif - Indu- 11-20 m3/month
119	Tarif-Ind 21-30m3/mes	N			Tarif - Indu- 21-30 m3/month
120	Tarif-Ind 31-40m3/mes	N			Tarif - Indu- 31-40 m3/month
121	Tarif-Ind >41m3/mes	N			Tarif - Indu. > 41 m3/month
122	Tarif-Ind Promedio/mes	N			Tarif - Indu- Average/Month
123	Renovacion Anual Año	A	4		Annual Revenues
124	Renov-Residencial	N			Revenues -Residential
125	Renov-Institucional	N			Revenues -Institutional
126	Renov-Comercial	N			Revenues -Commercial
127	Renov-Industrial	N			Revenues -Industrial
128	Renov-Otros	N			Revenues -Others
129	Aviso Antes Deconec	N			Policy on non - payment/days before Disconnection
130	No.SemanaDesconec	N			Policy on non - payment/Annual No. of Disconnection
131	Multas de Reconec.	N			Reconnection Fee

PLAN DE APROVISIONAMIENTO DE AGUA EN CINCO DEPARTAMENTOS				Nivel : Bloque	
Contenido: RECURSO HIDRICOS - Informacion General				No. B5.1	
Dep. No. _____ Nombre: _____		Nombre de Archivo:		Pag. 1 de 2	
Prov. No. _____ Nombre: _____		Canton No.: _____ Nombre: _____			
I D E N T I F I C A C I O N	1/ Numero de Recurso Hidrico	#			
	Cantidad de Recursos (En caso de tipos iguales)	#			
	2/ Numero de Bloque	#			
T I P O	3/ Pozos Excavados Manual	X			
	4/ Pozos Perforados no profundos	X			
	5/ Pozos Perforados Profundos	X			
	6/ Galeria de Infiltracion / Buena	X			
I N F O R M A C I O N	7/ Fuentes-Manantiales pequenos	X			
	8/ Extracion Superficial, rio, lago	X			
	9/ Toma Superficial, ver, etc.	X			
	10/ Colector de Aguas Pluviales	X			
O R M A C I O N	11/ Agencia de Gobierno	X			
	12/ Privada	X			
	13/ Nivel I	X			
	14/ Nivel II	X			
P O B L A C I O N	15/ Nivel III	X			
	16/ Comité servicio de Agua	X			
	17/ Institucion	X			
	18/ Establecimiento Comercial	X			
G E N E R A L	19/ Industria/ Emp. / Agrícola	X			
	20/ Publico Local	X			
	21/ Privado	X			
	22/ Turbina Sumergible	X			
E N U E V A C I O N	23/ Centrífugador	X			
	24/ Bomba Manual	X			
	25/ Balde y Cuerda	X			
	26/ Corriente Libre-por gravedad	X			
A P A N A L	27/ Agua Potable	X			
	28/ Lavado / Baños	X			
	29/ Horticultura/ Irrigacion	X			
	30/ Irrigacion en Gran Escala	X			
C D E A L T A D O	31/ Produccion-industrias	X			
	32/ Sin problema en la calidad	X			
	33/ Alto cont. Hierro/ Manganeseo/Cobre	X			
	34/ Alto contenido de Cloruros/Sales	X			
I D E A L T A D O	35/ Turbiedad/ Color/ Olor	X			
	36/ Polucion/ Contaminacion	X			
	37/ Clorinado/Clorado	X			
	38/ Con Tratamiento/Tratada	X			
P A R T I C I P A N T E	39/ Produccion Estacional	c			
	40/ Capacidad Promedio (m3/d)	c			
	41/ Cantidad de Poblacion en Cobertura	c			
	42/ Cantidad de Familia en Cobertura	c			
D A T O S					
T O T A L					

PLAN DE APROVISIONAMIENTO DE AGUA EN CINCO DEPARTAMENTOS										Nivel: Bloque	
Contenido: Información de Pozos										No. 85.2	
Dep. No. _____ Nombre: _____										Pag. 2 de 2	
Prov. No. _____ Nombre: _____										Nombre de Archivo: _____	
Canton No. _____ Nombre: _____											
1/ No. de Bloque	#	Depart., Provincia	#								
	#	Sección, Canton	#								
	#	Bloque	#								
2/ No. de Pozo	#		#								
3/ Profundidad (m)	#		#								
4/ SWL (Nivel Estático)(m)	#		#								
5/ Producción Mínima (m ³ /h)	#		#								
6/ T-Valor (Transmisibilidad)(m ² /s)	#		#								
7/ Información del Acuífero	c		c								
8/ Año de Construcción	c		c								
9/ Diámetro (mm)	#		#								
10/ Estructura del Pozo	c		c								
11/ Pozo en Uso o Desuso	c		c								
12/ Técnico que realizó la investigación	c		c								
13/ Fecha de la investigación	c		c								
14/ Origen de la información	c		c								

Información del Acuífero
a. Arena & Grava del Aluvial
b. Arenisca
c. Otra Litologías
x. Sin registro

Estructura del Pozo
a. Excavado
b. Perforado
x. Sin registro

Uso del Pozo
a. Uso
b. Desuso / seco
c. Desuso / colapso
d. Desuso / Bomba Defectuosa
e. Desuso / Calidad baja del Agua
x. Sin registro

Nota: Use la letra "x" en la columna respectiva, cuando no tenga información del pozo.

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.			
NIVEL DE CUESTIONARIO: Bloque		No.:86.1	PAGINA 1 DE 2
CONTENIDO: Aprovechamiento de Agua-Bloque Nivel II		NOMBRE DE ARCHIVO:	
DEP.NO.:	NOMBRE:	1/ BLOQUE No.:	Nombre:
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS
Suministro de Agua IDENTIFICACION DEL BLOQUE	2/ Identificación (Fuente No.)	#	
	3/ Nombre/Propietario del Sistema	Ch	
	4/ Año de Construcción	#	19
DISEÑO ORIGINAL ADOPCION	5/ Magnitud del Area de Servicio	#	
	6/ Población en el Area de Servicio	#	
	7/ Familias en Area de Servicio	#	
	8/ Población Total Servida por Pilas(grifos)Comunales	#	
	9/ Total Familias Servidas por Pilas (grifos)Comunales	#	
	10/ Total de Grifos Comunales	#	
	11/ Población por Grifo (Promedio de Hbts/grifo)	#	
	12/ Familias por Grifos (Promedio de Flia/grifo)	#	
BLOQUE ACTUAL INCLUYE LA EXTENSION	13/ Año de Modernizar	#	19
	14/ Magnitud de Area de Servicio Km 2	#	
	15/ Población en Area de Servicio	#	
	16/ Familias en Area de Servicio	#	
	17/ Población Servida por Pilas (grifos)Comunales	#	
	18/ Total de Grifos Comunales	#	
	19/ Población por Grifo (Promedio de Hbtes/grifo)	#	
	20/ Familia por Grifo (Promedio de Flia/grifo)	#	
FUENTES DE AGUA	21/ Capacidad de la Fuente m3/h	#	
	22/ Producción Mensual Mínima m3/h	#	
	23/ Producción Anual m3/año	#	
BLOQUE DE DISTRIBUCION	24/ Longitud de Transmisión Principal m	#	
	25/ Longitud de Distribución Principal m	#	
	26/ Cantidad de Reservorios (Tanques u otros)	#	
	27/ Volúmen Total de Reservas m3	#	
	28/ Grifos Comunales con medidor	#	
	29/ Grifos Comunales sin medidor	#	
NIVEL DEL SERVICIO (Estación Seca)	30/ Duración	#	
	Agua Sucia	-	
	31/ a) Todos los días	X	
	32/ b) Una vez a la Semana	X	
	33/ c) Una vez al Mes	X	
	34/ d) Ocasionalmente	X	
	Sabor/ Olor	-	
	35/ a) Buen Sabor	X	
	36/ b) Salado	X	
	37/ c) Leñoso	X	
	38/ d) Metálico	X	
39/ e) Otros	X		

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.				
NIVEL DE CUESTIONARIO: Bloque		No.: B6.2		PAGINA 2 DE 2
CONTENIDO: Aproveccionamiento de Agua-Bloque Nivel II		NOMBRE DE ARCHIVO:		
DEP.NO.:	NOMBRE:	1/ BLOQUE No.:	Nombre:	
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS	
NIVEL DEL SERVICIO (Estación Seca) (Continuación)	Interrupción de Suministro	-	-	
	40/ Fallo de Potencia No./mes	#		
	41/ Interrupción de Bomba No./mes	#		
	42/ Fallas en Tubería No./mes	#		
	43/ Otros No./mes	#		
	Presión de Agua	-	-	
	44/ Pílas, Presión adecuada %del Total	#		
	45/ Pílas, Presión inadecuada %del Total	#		
PERSONAL	46/ Personal de mantenimiento	#		
	47/ Personal Administrativo	#		
	48/ Recaudadores	#		
REPARACION	Quiénes las repararán?	-	-	
	49/ a) Comercio Local	X		
	50/ b)	X		
	51/ c)	X		
	52/ d)	X		
GASTOS	53/ Gastos Anuales Año	#	199	
	54/ Salarios Año	#		
	55/ Combustibles, Químicos, Materiales Año	#		
	56/ Transporte Año	#		
	57/ Reparaciones Año	#		
	58/ Reembolso de Prestamos Año	#		
	59/ Otros Año	#		
ESTRUCTURA TARIFARIA	60/ Pagos por Consumo Año	#	199	
	61/ a) Por Cubos Cubo	#		
	62/ b) Por Volumen m3	#		
	63/ c) Por Vivienda vivienda	#		
	64/ d) Otros	X		
FACTURACION	65/ Facturación Anual Año	#	199	
	66/ Facturación por Consumo Grifos comunita Año	#		
	67/ facturación por Consumo Grifos Domiciliar Año	#		
	68/ Subsidios Esperados Año	#		
	69/ Otros Año	#		
INGRESOS	70/ Ingreso Anual Año	#	199	
	71/ Pago por Consumo Comunitario Año	#		
	72/ Pago por consumo Domiciliario Año	#		
	73/ Subsidios Año	#		
	74/ Otros Año	#		

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.			
NIVEL DE CUESTIONARIO:		No.:B6.3	PAGINA 1 DE 4
CONTENIDO: Aproveccionamiento de Agua-Bloque Nivel III		NOMBRE DE ARCHIVO:	
DEP.NO.:	NOMBRE:	BLOQUE No.:	NOMBRE:
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS
SUMINISTRO DE AGUA IDENTIFICACION DE BLOQUE	2/ Identificación	#	
	3/ Nombre/ Propietario del Sistema	Ch	
	4/ Miembros del Comité Número	#	
DISEÑO ORIGINAL ADOPCION		-	-
	5/ Año de Construcción Año	#	19
	6/ Magnitud del Area de Servicio km2	#	
	7/ Población en Area de Servicio Hbtes.	#	
	8/ Familia en Area de Servicio Flias.	#	
	9/ Area sin Servicio km2	#	
	10/ Población sin Servicio Hbtes.	#	
	11/ Familias sin Servicios Flias.	#	
	12/ Conecciones Domiciliarias Cantidad	#	
	13/ Población por Conección Domiciliaria Hbtes.	#	
	14/ Familias por Conección Domiciliaria Flias.	#	
SISTEMA ACTUAL INCLUYENDO LA EXTENSION	15/ Año	-	19
	16/ Magnitud Area de Servicio km2	#	
	17/ Población del Area Hbtes.	#	
	18/ Familias en el Area Flias.	#	
	19/ Area sin Servicios km2	#	
	20/ Población sin servicios Hbtes.	#	
	21/ Conección Domiciliaria Cantidad	#	
FUENTES DE AGUA.	Fuente Principal A:	-	-
	22/ Fuente No: Res/No.	#	
	23/ Capacidad de la Fuente m3/hr	#	
	24/ Tiempo de Operación hr/día	#	
	Fuente Principal B:	-	-
	25/ Fuente No: Res/No.	#	
	26/ Capacidad de la Fuente m3/hr	#	
	27/ Tiempo de Operación hr/día	#	
	Fuente Principal C:	-	-
	28/ Fuente No. Res/No.	#	
	29/ Capacidad de la Fuente m3/hr	#	
	30/ Tiempo de Operación hr/día	#	
	Otras Fuentes:	-	-
31/ Cantidad de Fuentes: Cantidad	#		
32/ Capacidad Total m3/hr	#		
33/ Producción Total m3/hr	#		

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.				
NIVEL DE CUESTIONARIO:		No.: B6.4		PAGINA 2 DE 4
CONTENIDO: Aprovechamiento de Agua-Bloque Nivel III		NOMBRE DE ARCHIVO:		
DEP. NO.:	NOMBRE:	BLOQUE No.:	NOMBRE:	
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS	
ESTADISTICAS DE PRODUCCION	34/ Producción de Años Anteriores Año	#	199	
	35/ - Enero m3/mes	#		
	36/ - Febrero m3/mes	#		
	37/ - Marzo m3/mes	#		
	38/ - Abril m3/mes	#		
	39/ - Mayo m3/mes	#		
	40/ - Junio m3/mes	#		
	41/ - Julio m3/mes	#		
	42/ - Agosto m3/mes	#		
	43/ - Septiembre m3/mes	#		
	44/ - Octubre m3/mes	#		
	45/ - Noviembre m3/mes	#		
	46/ - Diciembre m3/mes	#		
TRANSMISION DISTRIBUCION	47/ Longitud de Transmisión Principal m	#		
	48/ Longitud de Distribución Principal m	#		
	49/ Número de Reservorios (reservas)	#		
	50/ Volumen Total de Reservas m3	#		
NIVEL DE SERVICIO	51/ Duración hr/d	#		
	Turbiedad del Agua:	-		
	52/ a) Todos los Días	X		
	53/ b) Una vez a la Semana	X		
	54/ c) Una vez al Mes	X		
	55/ d) Ocasionalmente	X		
	Sabor/ Olor	-		
	56/ a) Buen Sabor	X		
	57/ b) Salado	X		
	58/ c) Leñoso	X		
	59/ d) Metálico	X		
	60/ e) Otros	X		
	Interrupción en el Suministro	-		
	61/ Falta de Potencia No./mes	#		
	62/ - Interrupción de Bomba No./mes	#		
	63/ - Fallas en Tuberías No./mes	#		
	64/ - Otros No./mes	#		
	Presión del Agua:	-		
	65/ - Suministro segundo Piso % del total	#		
	66/ - Suministro Alrededor del Piso (a nivel) % del total	#		
67/ - Presión Inadecuada (sistema) % del total	#			

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.				
NIVEL DE CUESTIONARIO:		No.: B6.5		PAGINA 3 DE 4
CONTENIDO: Aproveccionamiento de Agua-Bloque Nivel III		NOMBRE DE ARCHIVO:		
DEP. NO.:	NOMBRE:	BLOQUE No.:	NOMBRE:	
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS	
CONSUMO	Consumo Domiciliario	-	-	
	68/ - Conexiones con Medidores	Cantidad	#	
	69/ - Consumo	m3/mes	#	
	70/ - Conexiones sin Medidores	Cantidad	#	
	Consumo por Grifos Comunitarios	-	-	
	71/ - Grifos Públicos con Medidores	Cantidad	#	
	72/ - Consumo	m3/mes	#	
	73/ - Grifos Públicos sin Medidores	Cantidad	#	
	Consumo de las Instituciones	-	-	
	74/ - Conexiones con Medidores	Cantidad	#	
	75/ - Consumo	m3/dia	#	
	76/ - Conexiones sin Medidores	Cantidad	#	
	Consumo Comercial	-	-	
	77/ - Conexiones con Medidores	Cantidad	#	
	78/ - Consumo	m3/dia	#	
	79/ - Conexiones sin Medidores	Cantidad	#	
	Consumo Industrial:	-	-	
	80/ - Conexiones con medidores	Cantidad	#	
	81/ - Consumo	m3/dia	#	
	82/ - Conexiones sin Medidores	Cantidad	#	
PERSONAL	83/ Técnico- Profesional	Número	#	
	84/ Operador	Número	#	
	85/ Apoyo Técnico	Número	#	
	86/ Apoyo Administrativo	Número	#	
	87/ Cobradores	Número	#	
CONSUMO	88/ Consumo con Medidores	Año	#	199
	89/ - Enero	m3/mes	#	
	90/ - Febrero	m3/mes	#	
	91/ - Marzo	m3/mes	#	
	92/ - Abril	m3/mes	#	
	93/ - Mayo	m3/mes	#	
	94/ - Junio	m3/mes	#	
	95/ - Julio	m3/mes	#	
	96/ - Agosto	m3/mes	#	
	97/ - Septiembre	m3/mes	#	
	98/ - Octubre	m3/mes	#	
	99/ - Noviembre	m3/mes	#	
	100/ - Diciembre	m3/mes	#	
	101/ Consumo del Año Pasado	Año	#	199
	102/ - Domiciliario	m3/mes	#	
	103/ - Institucional	m3/mes	#	
	104/ - Comercial	m3/mes	#	
105/ - Industrial	m3/mes	#		
106/ - Otros	m3/mes	#		

PLAN DE APROVISIONAMIENTO DE AGUA A 5 DEPTOS.				
NIVEL DE CUESTIONARIO:		No.: B6.6		PAGINA 4 DE 4
CONTENIDO: Aprovechamiento de Agua-Bloque Nivel III		NOMBRE DE ARCHIVO:		
DEP. NO.:	NOMBRE:	BLOQUE No.:	NOMBRE:	
GRUPO INFORMACION	DESCRIPCION INFORME	CODIGO	DATOS	
GASTOS	107/ Gastos Anual	Año	#	199
	108/ - Salarios	/Año	#	
	109/ - Combustibles, Químicos, Materiales	/Año	#	
	110/ - Transporte	/Año	#	
	111/ - Reparaciones	/Año	#	
	112/ - Reembolso de Préstamo	/Año	#	
	113/ - Otros	/Año	#	
	ESTRUCTURA TARIFARIA	Consumo en Residencias		-
114/ Promedio Normal por Mes		Bs/mes	#	
Consumo Institucional			-	-
115/ Promedio Normal por Mes			#	
Consumo Comercial		Bs/mes	-	
116/ Promedio Normal por Mes			#	
Consumo Industrial			-	-
117/ 0-10m3/mes		Bs/mes	#	
118/ 11-20m3/mes		Bs/mes	#	
119/ 21-30m3/mes		Bs/mes	#	
120/ 31-40m3/mes		Bs/mes	#	
121/ 41-adelante m3/mes		Bs/mes	#	
122/ Promedio Normal por Mes		Bs/mes	#	
RENOVACIONES (x1000Bs)		123/ Renovaciones Anuales	Año	#
	124/ - Residencial	x1000Bs/año	#	
	125/ - Institucional	x1000Bs/año	#	
	126/ - Comercial	x1000Bs/año	#	
	127/ - Industrial	x1000Bs/año	#	
	128/ - Otros	x1000Bs/año	#	
	Medidas en los Pagos Atrazados		-	-
	129/ - Antes de Desconectar (Aviso)	días	#	
	130/ - No. Anual de Desconexiones (Total)	veces	#	
	131/ - Multas por Reconexión (por vez)	Bs	#	