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MANAGEMENT SYSTEMS  
**MANAGEMENT INFORMATION  
SYSTEMS**  
FINAL REPORT- APPENDICES

The Story of Our Cover:-

On our cover is a sketch of a sybil, which is a fountain. During the Ottoman Empire these were a common source of drinking water. A well is located at ground level and a balcony on the second level where children were taught the Koran. Usually located near mosques, sybils were built and then donated to the public by various benefactors.

Beneath the sketch is a quote from the Koran, "We made from water all living things".

## APPENDICES

- 1 Differentiation of Expenses and Expenditures
- 2 Responsibility Center Development
- 3 Budgeting Process
- 4 Long-Range Financial Planning
- 5 GOSSD and SCA Financial Statements
- 6 Description of Accounting Books
- 7 Accounting Procedures
- 8 Report Descriptions

DIFFERENTIATION OF EXPENSES  
AND EXPENDITURES

Definition

An expenditure occurs when a service or good is purchased. An expense occurs when the service or good is actually used. The purchase of alum for inventory is an expenditure but not an expense. Later use of that alum in a clarifier is an expense but not an expenditure.

Some items, for example wages, most services and interest payments, are usually recognized simultaneously as both an expense and an expenditure. Materials are often recognized as an expenditure when purchased and then as an expense later in the same year when they are used. Still other items, automobiles for example, may be recognized as expenditures in one year and as an expense in later years.

Application

With the exception of the purchase and depreciation of fixed assets, the State budget generally assumes that expenses will equal expenditures. Control against the State budget is therefore attained by controlling purchases. The budget departments maintain "Commitment Books" to ensure that no commitments for purchases are made that will exceed the budget.

DIFFERENTIATION OF EXPENSES  
AND EXPENDITURES

This system has two important shortcomings:

- Control is focused on the total budget rather than on its use by individual departments. (See Paragraph 1.2.4.)
- Inventory decisions are based entirely on rate of use. Such factors as the present level (which appears too high), prices and delivery delay are not properly considered.

Real control can occur only at the departmental level. Since expenditures for material and fuel are made independently of use by individual plants, departmental control must be based upon an analysis of expenses rather than expenditures.

The same type of problem arises in identification of revenues and collections. The utilities recognize a revenue at the time and for the amount it is billed. Actual collections, however, may not occur until next year. As a result, as much as an additional LE 1 million has been invested in a single utility within one year. The budgets do not allow for such large increases in funding. The present state budgeting process does not encourage adequate attention to this fact.

RESPONSIBILITY CENTER DEVELOPMENT

Responsibility Centers are the organizational units within a firm that are subject to the direction of an individual who has been assigned the responsibility and delegated the authority to accomplish specified objectives. The responsibility centers recommended for the operating utilities have been listed in Exhibit 1.4.

All organizational units listed in the organization charts of the Organization Manual were considered as potential responsibility centers. Three criteria were applied in selecting from among them:

- Does the unit have a single responsible manager?
- Does the unit control a substantial amount of resources?
- Is the unit easily differentiated from other parts of the utility?

Many of the units easily met all three criteria. The exceptions are discussed below.

- General Centers. (Center Numbers 11, 21, 31, 41, 51, 71, and 91) These are designated to consolidate the results of small staff groups (e.g., secretariat, operations statistics and personal assistants) reporting to the Chairman or Vice Chairmen. The expenses incurred by these groups are usually small and non-variable and therefore are not worth the effort required to maintain separate records.
- Management Services. This group should be designated a Responsibility Center only if it is given the responsibilities recommended in the Organization Manual. Otherwise it should be included in Center Number 11, Chairman's Office.

- Financial Control. The primary expense of the accounting departments is salaries. Therefore, Central Accounts, Asset Accounts, Accounts Payable and Treasury have been combined to form the Financial Control Responsibility Center. The responsible manager is the Vice Chairman, Finance.
- Budget and Cost. This unit would not qualify under the "Control substantial assets" criterion. Nevertheless, it is important that the General Manager of this unit personally use the procedures he requires others to follow.
- Service Centers. These units are designated Responsibility Centers because of their great responsibility for collecting customer accounts.
- Facilities and Maintenance. This headquarters unit (Center Number 52) does not presently exist as a separate department at any utility. Its establishment is recommended in the Organization Manual.
- Plant Maintenance. No plant presently has one manager in charge of maintenance. If these positions are not established, the plant manager should be designated the responsible manager for this center. These centers are required because of the substantial and variable costs of maintenance in the plants.
- Wellfields. Wellfields are identified separately from plants so that the costs of water by source of production can be identified. Utilities may not find it necessary to identify each wellfield separately.
- Pumping and Boosting Stations. These units are separately identified in order to help determine costs of distribution. This need is particularly important to AWGA because of the Western Desert pipeline. Other utilities may not wish to maintain separate identification for all stations.
- Distribution and Sewage Treatment Branches. Some utilities may prefer to manage branches solely on the basis of job costs (See Exhibit 3.6 of the Procedures and Methods Report.) and not identify each branch as a Responsibility Center.
- Technical. Because a large part of the Technical Sector's costs can be assigned to specific jobs, the level of detail shown here (Centers 91, 92, 93 and 94) may not be necessary in all utilities.

## BUDGETING PROCESS

The following steps are required to improve the budgeting process as described in Paragraphs 1.3.2 and 2.3.3:

### Assign Budgeting Responsibility

The Management Committee should be assigned the task of supervising budget preparation. Its specific tasks include:

- Establishing a budget timetable.
- Reviewing and approving budget guidelines.
- Reviewing all budget requests.
- Recommending the final budget to the Board of Directors.
- Assisting in budget negotiations with Governorate and State personnel.
- Establishing final Responsibility Center budgets.
- Recommending changes in Responsibility Center or utility budgets as required.

The Manager of the Budget and Cost Department should serve as a member of the Committee during all discussions of the budget. He should be assigned the responsibility for:

- Recommending a budget process to the Committee.
- Preparing a draft budget.
- Implementing budget decisions made by the Management Committee.
- Following-up with managers to see that they meet their approved budgets.

BUDGETING PROCESS

Write a Budget Manual

The first step in the budgeting process is to write a Budget Manual to be used by Responsibility Center managers. Exhibit A3.1 presents a recommended Table of Contents for the Manual. It contains a budget timetable (Exhibit A3.2) planning guidelines (Exhibits A3.3 - A3.11) and the forms needed by department managers to prepare budget estimates (Exhibits A3.12 - A3.20 and Exhibit 2.2). This Manual should be prepared by Budget and Cost with assistance from Management Services. It should be reviewed and approved by the Management Committee before delivery to the Responsibility Center managers.

Prepare Expense Estimates

Responsibility Center managers should be required to draft expense estimates for their activities. Six steps are required of each responsibility manager:

- Define functional groups. These functions should correspond closely to the existing sections within the Responsibility Center but other definitions may prove more useful.
- Establish measures of activity for each function. These measures should be:
  - . Related to the output of the function.
  - . Countable (e.g., M<sup>3</sup> of water).Some suggestions are shown in Exhibit A3.21.
- Estimate size of the measure of activity for the Budget Year. These estimates should be:
  - . Based on the planning guidelines in the Budget Manual.
  - . Divided by month.
- Develop standards of performance for each resource (people, materials, energy, services) used in each function. These standards should state how much of each resource is required per unit of activity measured.

- Apply the standards to determine how much of each resource is required. The forms shown in Exhibits A3.12 - A3.19 should be used.
- Summarize the results. The manager should summarize the results of the data in Exhibits A3.12 - A3.19 to the form shown in Exhibit A3.20. This form and the supporting documents should be sent to Budget and Cost when they are complete.

Prepare Revenue and  
General Expense Estimates

While the Responsibility Centers are preparing estimates, Budget and Cost should prepare detailed estimates of revenues and general expenses.

Revenues should be carefully estimated before the Budget Manual is published, but they should be reviewed in light of additional information for the current year. In each case the basic procedure is to:

- Obtain data on actual sales to date by type of water (or sewage volume), by area, by type of customer and by month.
- Forecast water consumption (sewage volume) of existing customers.
- Add water consumption (sewage volume) from new customers.
- Multiply water consumption (sewage volume) by expected rates for each month.

Depreciation should be calculated by Asset Accounts.

Interest should be calculated for each loan that is outstanding.

Other costs (such as imputed rent and interest) can be calculated the same as is done now.

## BUDGETING PROCESS

### Prepare Capital Projects Estimates

Two steps are required to prepare the Capital Projects estimates.

- The Technical Sector and Asset Accounts should jointly prepare estimates of the capital requirements of the projects presently underway.
- Technical Sector should prepare detailed justification and cost estimates for projects scheduled to begin during the budget year. The appropriate form is shown in Exhibit 2.1. The forms should be submitted to Budget and Cost after review by the Management Committee.

### Prepare Estimates of Other Capital Requirements

Nearly all balance sheet accounts can be changed during the year without affecting the Profit and Loss Statement. Therefore explicit attention should be given to the following items:

- Accounts Receivable. Customer service centers should evaluate the accounts receivable in their area and:
  - . Determine which accounts might be collectible (and devise a plan to do it).
  - . Estimate how much should be written off as uncollectible during the budget year.
  - . Estimate the value of billed but uncollected revenues during the budget year.
  - . Estimate the value of accounts receivable at the end of the budget year after write-offs.

Service centers should be strongly encouraged to devise plans to collect outstanding bills.

The estimates for all service centers should be consolidated to one form for inclusion in the budget proposal. Estimated write-offs should be budgeted under Account 365, Bad Debts.

BUDGETING PROCESS

- Inventories. Materials Management should prepare estimates of changes in inventories during the budget year. Inventory additions and withdrawals (both usage and scrap) should be estimated for both the current and budget years. Usage should equal estimated withdrawals for operations and capital projects.
- Creditors Accounts. Creditors accounts should be reviewed by Accounts Payable and any expected changes estimated and sent to Budget and Cost.
- Non-Project Capital Expenditures. Not all capital purchases (cars, for example) must be classified as capital project expenditures. Each department manager should request such items by filling out a Request for Capital Purchase (Exhibit 2.2) and submitting it together with his operating budget estimate.

Budget and Cost should analyze each of these estimates for reasonableness and consistency with other estimates. They should then be used to prepare the Sources and Uses of Funds Statement and the Balance Sheet estimates.

Consolidate Budget  
Requests and Prepare  
Analyses

The budget requests of all responsibility centers should be gathered and consolidated as shown in Exhibit A3.22. Revenues and expenses estimated by Budget and Cost should be added to those of the responsibility centers to produce the utility operating budget. Project Proposals from the Technical Department and Capital Requests from other departments should be consolidated with other balance sheet adjustments to produce the capital budget. All of these data should be summarized and presented to the Management Committee for evaluation. The forms for this submission are shown in Table A3.1 on the following page.

BUDGETING PROCESS

TABLE A3.1  
BUDGET ANALYSIS FORMS

	<u>Exhibit</u>
Operating Highlights	A3.23
Sources and Uses of Funds	A3.24
Revenue Estimates	A3.25
Expense Estimate by Budget Item	A3.26
Cost per Cubic Meter by Budget Item	A3.27
Responsibility Center Estimate	A3.28
Cost per Cubic Meter by Department	A3.29
Project Summary	A3.30
Summary of Other Capital Expenditures	A3.31
Balance Sheet	A3.32
Operations Cash Flow	A3.33
Potable Water Sales	A3.34
Personnel Analysis	A3.35
Raw Material and Energy Analysis	A3.36
Plant Maintenance Analysis	A3.37
Estimated Depreciation	A3.38
Debt Service Expenditures	A3.39
Analysis of Accounts Receivable	A3.40
Estimated Value of Inventories	A3.41
Project Proposal	2.1
Request for Capital Expenditure	2.2
Proforma State Budget Request	--
Responsibility Center Expense Estimates	A3.20

BUDGETING PROCESS

Approve the Budget Request

The members of the Management Committee should critically review the information just described. They should ask for any detailed back-up information required to arrive at a final decision. The Committee should then meet to revise and approve the budget proposal to be submitted to the State.

During the period of Management Committee review, negotiations with governorate and ministry personnel may begin.

When all internal questions have been resolved by the Management Committee, the following should be submitted to the Chairman and Board of Directors for approval:

- Revenue Estimates
- Expense Estimates
- Responsibility Center Estimates
- State Budget Request

The proposed State Budget Request should then be submitted to the Government for approval.

BUDGETING PROCESS

Give Each Manager  
an Approved Budget

As soon as the approved State Budget is received by the Utility, Budget and Cost should revise the Responsibility Center budgets to reflect any changes made in the management review or by the government. The proposed Responsibility Center budgets should then be approved by the Management Committee and distributed to the appropriate manager. Customer Service Centers should also be given a revenue budget. Each manager should also be informed of any changes in his planning assumptions.

During the year, managers should receive monthly reports of actual revenues and costs versus budget. These reports and the managers' response to them are described in Paragraphs 3.3.3.2 and 4.3.3.2.

BUDGET MANUAL  
TABLE OF CONTENTS

Message from the Chairman, including:

- Brief review of events since the beginning of the last budget cycle.
- Outlook for the budget year.
- Major goals of the utility for the budget year.
- Appeal to managers to:
  - . Analyze their activities carefully.
  - . Look for opportunities to reduce costs.
  - . Submit their requests on time and in the proper format.

Budget Timetable. (See Exhibit A3.2)

Instructions for Preparing Budget Requests:

- Review Utility and State budgeting objectives
- Define functions
- Develop and justify estimates for the operating budget
  - . People
  - . Materials
  - . Services
  - . Facilities and equipment
- Develop and justify estimates for minor capital assets
- Use standard forms

BUDGET MANUAL

TABLE OF CONTENTS (Cont'd)

	<u>Exhibit</u>
<b>Utility Planning Variables and Goals (To be prepared by the Budget and Cost Department):</b>	
- Preliminary Profit and Loss Estimates	A3.3
- Quantity of Water Sold	A3.4
- Number of Meters in Service	A3.5
- New Connections	A3.6
- Number of Customers to be Billed	A3.7
- Major New Customers	A3.8
- Quantity of Water Produced	A3.9
- Desired Improvement in Manpower Utilization (by Responsibility Center)	
- Other Goals for Improvement in Efficiency	
- Major Capital Projects to be Completed	A3.10
- Salary Schedules	A3.11
<b>Budget Submission Forms (To be completed by the Department Managers):</b>	
- Analysis of Personnel Needs	A3.12
- Analysis of Personnel Monthly Costs	A3.13
- Request for Addition of Personnel	A3.14
- Analysis of Material and Energy Needs	A3.15
- Monthly Use Analysis - Materials and Energy	A3.16
- Analysis of Spare Parts Needs	A3.17
- Analysis of Service Needs	A3.18
- Analysis of Transportation Costs	A3.19
- Request for Capital Purchase	2.2
- Responsibility Center Expense Estimates	A3.20

BUDGET TIMETABLE

A budget timetable should be developed to assure orderly control of preparation and follow-up of the budgeting routines. The timetable should include, but not be limited to, the following major events:

<u>Activity</u>	<u>Recommended Deadline For Completion</u>
Deliver budget manuals to managers	June 1
Managers submit draft budgets	July 15
Prepare revenue and general expense estimates	July 30
Prepare balance sheet estimates	July 30
Review and consolidate the requests	August 10
Transpose the budget to meet State requirements	August 10
Conduct management review	August 20
Obtain approval of Board of Directors	August 27
Send draft to State Government	August 30
Give an approved budget to each Responsibility Center manager	Ten days after returned from government
Report actual expenses against budget	Twenty days after end of each month
Managers respond to budget variations	Ten days after receipt of monthly report

It is responsibility of the Budget and Cost Department to recommend a timetable to the Chairman for his approval.

PRELIMINARY PROFIT AND LOSS ESTIMATES

	1979(1)	1980(2)	Percent Difference
<u>OPERATING REVENUES</u> (3)			
General Customers			
Industrial Customers			
Government			
Harbor			
All Other			
Total Water Sales			
Connections			
All Other Revenues			
Total Revenues			
<u>OPERATING EXPENSES</u>			
Wages			
Permanent Posts			
Overtime			
Other			
Commodities			
Chemicals			
Fuels			
Electricity			
Other Utilities			
Spare Parts			
Other			
Services			
Maintenance			
Transportation			
Other			
Depreciation			
Other Operating			
Expenses			
Total Operating			
Expenses			
Operating Profit (Loss)			
Other Expenses			
Interest			
Imputed Rent			
Imputed Interest			
Other Transfers			
Net Profit (Loss)			

- Notes: (1) Current year projection.  
(2) Preliminary budget estimate.  
(3) Sewerage authorities should substitute appropriate revenue categories.

QUANTITY OF WATER SOLD<sup>(1)</sup>

Sales by Customer Type			
Customer Type	1978	1979 <sup>(2)</sup>	1980 <sup>(3)</sup>
General			
Industrial			
Government			
Harbor			
Special			
Irrigation			
Total			

Sales by Branch Office			
Branch	1978	1979 <sup>(2)</sup>	1980 <sup>(3)</sup>
Total			

Notes: (1) Million cubic meters.  
 (2) Projected sales for current year.  
 (3) Budget estimate.

NUMBER OF METERS IN SERVICE<sup>(1)</sup>

Type of Customer	1978	1979 <sup>(2)</sup>	1980 <sup>(3)</sup>
Household			
Industrial			
Government			
Churches			
Harbor			
Fountains			
Western Desert			
Total			

Notes: (1) Sewerage authorities should estimate number of connections.

(2) Current year projection

(3) Budget year estimate

NEW CONNECTIONS

Branch(1)	Size Of Connection (2)											
	1 1/4"			3"			4"			6" +		
	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Moharem Bey-El Gomruk												
Gabberi												
Ibrahimia												
Ramleh												
Sidi Bishr												
Abu Kir												
Western Desert												
<b>Total</b>												
Estimated Consumption Budget Year Each Year Thereafter												

Notes: (1) Branches for AWGA are shown as an example.  
 (2) Other size categories may be chosen.

NUMBER OF CUSTOMERS TO BE BILLED

Type of Customer	1978	1979 <sup>(1)</sup>	1980 <sup>(2)</sup>
Household			
Industrial			
Government			
Churches			
Harbor			
Fountains			
Western Desert			
Total			

Notes: (1) Current year projected.  
(2) Budget year estimate.

MAJOR NEW CUSTOMERS

Customer Name	Revenue Branch	Supplying Plant	Estimated Consumption per Month

QUANTITY OF WATER PRODUCED  
(Million Cubic Meters)

Type of Water By Plant	1978	1979 <sup>(1)</sup>		1980 <sup>(2)</sup>
		Budget	Projected	
Potable Water (3)				
Rond Point				
Siouf				
Maamoura				
Forn el Geraya				
Mariout				
Total				
Raw Water				
Hagar El Nawatieh				

Notes: (1) Current year.  
(2) Budget estimate.  
(3) Example for AWGA.

QUANTITY OF WATER PRODUCED  
(Million Cubic Meters)

Plant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Rond Point <sup>(1)</sup>												
1978 Actual												
1978 Projected												
1980 Budget												
Siouf												
1978 Actual												
1979 Projected												
1980 Budget												
Maamoura												
1978 Actual												
1979 Projected												
1980 Budget												

Note: (1) Example for AWGA

MAJOR CAPITAL PROJECTS  
TO BE COMPLETED IN 1980(1)

Name of Project	Impact <sup>(2)</sup>

Notes: (1) Insert the appropriate budget year.

(2) Discuss all aspects of the project that might significantly affect the budget, e.g., additional production, consumption, personnel.

SALARY SCHEDULES

Wherever possible, managers should use actual salaries for the current year plus x% to estimate budgeted personnel costs.. Where actual salaries are not known or where the number of people would make calculations difficult, the budget estimate should be made by multiplying the following averages by the number of people required:

Grade	Average Annual Salary (1)
1	
2	
3	
4	
5	
6	

Note: (1) Personnel department should calculate the average expected salary for each grade level for the budget year.

RESOURCE REQUIREMENTS-  
ANALYSIS OF PERSONNEL NEEDS

Responsibility Center: \_\_\_\_\_  
Date: \_\_\_\_\_

Manager: \_\_\_\_\_  
Code: \_\_\_\_\_

JUSTIFICATION OF PERSONNEL							
Function:	Measurement of Need				Number of Personnel		
	Activity Measure		People ÷ Unit of Activity Measure		Required (e)=(b)(d)	Existing (f)	Change (e)-(f)
	Unit of Measure (a)	Budget Estimate (b)	Current Year (c)	Budget Year (d)			
1. TREATMENT	M <sup>3</sup> WATER	18,200,000	3 PEOPLE/MM <sup>3</sup>	2.8/MM <sup>3</sup>	50 PEOPLE	51 PEOPLE	-1
2. MAINTENANCE	MACHINE HRS.	175,000	.2 PEOPLE/KWRS.	.18 PEOPLE/KWRS.	32 PEOPLE	34 PEOPLE	-2
3							

NUMBER OF PERSONNEL REQUIRED BY GRADE(1)													
GRADE													
1		2		3		4		5		6		TOTAL	
CURRENT	CHANGE	CURRENT	CHANGE	CURRENT	CHANGE	CURRENT	CHANGE	CURRENT	CHANGE	CURRENT	CHANGE	CURRENT	CHANGE
TOTAL													

RESOURCE REQUIREMENTS-  
ANALYSIS OF PERSONNEL MONTHLY COSTS

Responsibility Center: \_\_\_\_\_

Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

Month	Grade												Total	
	1		2		3		4		5		6			
	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
Jan.														
Feb.														
Mar.														
Apr.														
May														
Jun.														
Jul.														
Aug.														
Sep.														
Oct.														
Nov.														
Dec.														
Total														
Cost														

No.=Number of personnel

Cost=Salary plus benefits plus allowances

REQUEST FOR ADDITION OF PERSONNEL

Responsibility Center: \_\_\_\_\_ Code: \_\_\_\_\_  
 Responsible Manager: \_\_\_\_\_ Date: \_\_\_\_\_

TITLE

Position Title \_\_\_\_\_ Probable Grade \_\_\_\_\_  
 Title: (Check one)  New Title  Existing Title  
 Job Description: (Check one)  Attached  See \_\_\_\_\_

COST

Number of personnel to be added \_\_\_\_\_  
 Annual cost per person \_\_\_\_\_  
 Total Annual Cost LE \_\_\_\_\_

BUDGET

Already approved  
 Additional budget required beginning: \_\_\_\_\_

LOCATION OF ADDITIONS

<u>Title of Supervisor</u>	<u>Location</u>	<u>Number of Personnel to be Added</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

JUSTIFICATION

Work to be Done		Time/Unit of Work	Annual Man-Hours
Description	Amount of Work		
Total			

REQUEST FOR ADDITION OF PERSONNEL

JUSTIFICATION (Cont'd)

Why is this position needed? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Attach additional pages as required.)

SOURCE OF PERSONNEL

• Inside Organization

Department \_\_\_\_\_

Current Position \_\_\_\_\_ Grade \_\_\_\_\_

Specific Names \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• Outside Source

Probable Sources \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

QUALIFICATIONS REQUIRED

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOURCE REQUIREMENTS-  
ANALYSIS OF MATERIALS AND ENERGY NEEDS

Responsibility Center: \_\_\_\_\_

Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

Function/Material-Energy	Output		Material Required(1)				Cost			
	Activity Measure		Standard Rate of Use			Total Budgeted Use	Unit Cost			Budgeted Total Cost
	Units	Budget Estimate	Prior Year	Current Year	Budget Year		Prior Year	Current Year	Budget Year	
		(a)				(b)				(c)
1. Treatment(2) a. Alum(2) b. Material 2 c. Material 3 d. Material 4	M <sup>3</sup> OF WATER	18,200,000	32gm/M <sup>3</sup>	31gm/M <sup>3</sup>	30gm/M <sup>3</sup>	546,000 kg.	200/ton	250/ton	275/ton	150,150
2. Function 2 a. Material 1 b. Material 2 c. Material 3 d. Material 4										
3. Function 3 a. Material 1 b. Material 2 c. Material 3 d. Material 4										
4. Function 5 a. Material 1 b. Material 2 c. Material 3 d. Material 4										
5. Function 5 a. Material 1 b. Material 2 c. Material 3 d. Material 4										
6. Function 6 a. Material 1 b. Material 2 c. Material 3 d. Material 4										

Note: (1) Small items (under LE 1000) may be estimated directly under total cost without other justification.  
(2) Example

EXHIBIT A3.15



RESOURCE REQUIREMENTS-  
ANALYSIS OF SPARE PARTS NEEDS

Responsibility Center: \_\_\_\_\_ Manager: \_\_\_\_\_

Code: \_\_\_\_\_ Date: \_\_\_\_\_

Part Number	Description/Use	Units Required	Cost	
			per Unit	Total
Total Cost				

RESOURCE REQUIREMENTS-  
ANALYSIS OF SERVICE NEEDS

Responsibility Center: \_\_\_\_\_ Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

Description/Justification of Service <sup>(1)</sup>	Estimated Cost
Total Cost	

Note: (1) Description should include:

- What is being done presently.
- Alternatives considered.
- Basis for estimate

**RESOURCE REQUIREMENTS  
ANALYSIS OF TRANSPORTATION COSTS**

Responsibility Center: \_\_\_\_\_

Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

Use	Jan.	Feb.	Mar	Apr.	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Vehicle Fuel													
Vehicle Maintenance													
Bus Fare													
Train Fare													
Transportation Allowance													
Other													
Total													

RESPONSIBILITY CENTER EXPENSE ESTIMATES

Responsibility Center: \_\_\_\_\_

Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

Item	Estimated Cost												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
<u>Wages:</u>													
Permanent Posts													
Overtime													
Other													
<u>Materials and Energy:</u>													
Chemicals													
Fuels													
Electricity													
Spare Parts													
Other													
<u>Services:</u>													
Maintenance													
Transportation													
Other													
Other Expenses													
Total Expenses													

Functional Group	Activity Measure	Used for Estimating	
		Labor	Materials
<u>ADMINISTRATION</u>			
Personnel			
Payroll	Number of personnel in utility	X	X
Employee Relations	Number of personnel in utility	X	X
Safety	Number of lost time accidents	X	
Recruiting	Number of open positions	X	
Training	Number of training courses	X	
Security			
Guards	Number of entrances to be guarded	X	
Purchasing			
Foreign	Number of foreign purchases and contracts	X	X
Local	Number of local purchases and contracts	X	X
Stores			
Receiving	Number of items to be received	X	X
Warehouse	Number of items in the warehouse	X	X
Records	Number of items received or issued	X	X
<u>FINANCE</u>			
Central Accounts	Number of ledger entries	X	X
Budget and Cost	Number of responsibility centers	X	X
Treasury	Average number daily cash transactions	X	X
Asset Accounting	Number projects in process	X	X
	Number asset items held	X	X
Data Processing			
Computer room	Machine hours	X	X
Data Input	Number of documents key punched	X	X

ACTIVITY MEASURES

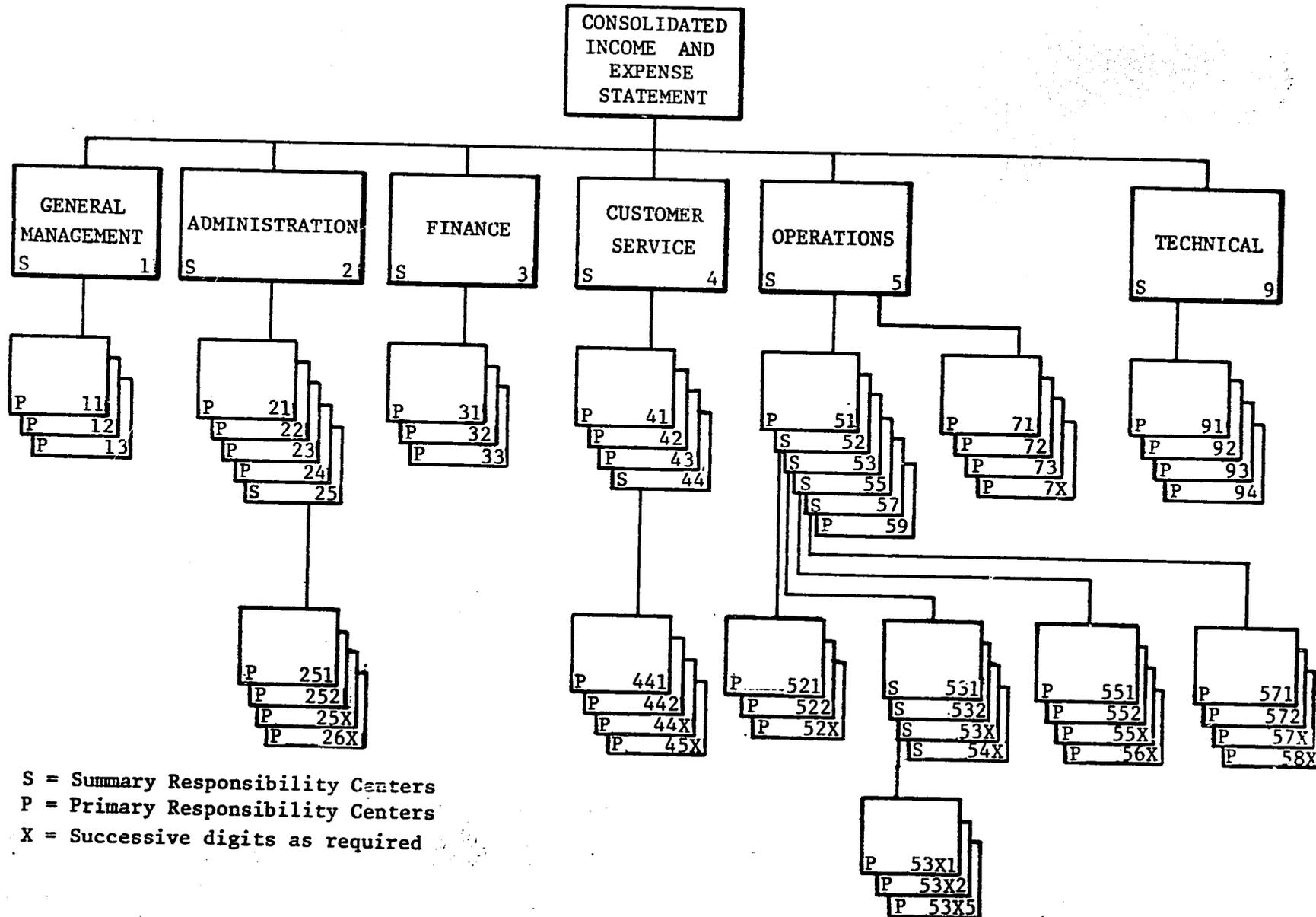
Functional Group	Activity Measure	Used for Estimating	
		Labor	Materials
<u>CUSTOMER SERVICE</u>			
Public Relations	Number of subscribers	X	X
Billing	Number of subscribers	X	X
Service Centers			
Meter Reading	Number of connections	X	X
Collections	Number of subscribers	X	X
Connections	Number of new connections and disconnections	X	X
Meter Shop	Number of meters repaired	X	
<u>OPERATIONS</u>			
Sources of Supply	Thousand cubic meters raw water	X	X
Treatment	Thousand cubic meters input water or sewage	X	X
Pumping	Equipment hours	X	X Parts
	Thousand cubic meters water or sewage		X Energy
Power Generation	Equipment hours	X	X Parts
	Kilowatt hours		X Energy
Laboratory	Number of samples	X	X
Booster Stations	Equipment hours	X	X Parts
	Thousand cubic meters of water or sewage		X Energy
Maintenance			
Mechanical	Horsepower hours	X	X
Electrical	Hours of operation	X	X
Civil	Square meters of floor space	X	X
Shops			
Fleet	Kilometers of use	X	X
Other	Number of work orders	X	X

ACTIVITY MEASURES

Functional Group	Activity Measure	Used for Estimating	
		Labor	Materials
<u>NETWORKS</u>			
Mains	Kilometers of mains	X	X
	Number of leaks		X
Service Connections	Number of connections	X	X
Gates, Valves, Hydrants	Number of gates, valves, hydrants	X	X
Storage Facilities	Cubic meters of storage	X	X
<u>PROJECTS</u>	Estimated value of projects <sup>(1)</sup>	X	X

Note: (1) For expenses that are not capitalized.

CONSOLIDATION OF RESPONSIBILITY CENTER REPORTS



S = Summary Responsibility Centers  
 P = Primary Responsibility Centers  
 X = Successive digits as required

OPERATING HIGHLIGHTS<sup>(1)</sup>

	1976	1977	1978	1979	1980	Percent Change 1976-1980
Cubic Meters (Millions) of:						
Treated Water(2)						
Well Water						
Other Potable Water						
Total Potable Water						
Percent Change from Previous Year						
Irrigation Water						
Raw Water Intake						
Income (LE 000's)						
Operating Revenues						
Total Income						
Expenses (LE 000's)						
Operating Expenses						
Total Expenses						
Capital Expenditures (LE 000's)						
Projects						
Other						
Number of Personnel						
Number of Customers (000's)						
Number of Connections (000's)						
Kilometers of Mains						
Treatment Capacity (Million cubic meters)						

Notes: (1) This is an example illustrating the format for preparing the 1980 budget.  
(2) Or sewage treated.

SOURCES AND USES OF FUNDS  
(LE 1,000's)

SOURCES OF FUNDS	Year		
	1978	1979 <sup>(1)</sup>	1980 <sup>(2)</sup>
<u>SELF FINANCING</u>			
<u>From Net Profits</u>			
<u>Decrease in Fixed Assets</u>			
Provision for depreciation			
Proceeds from sale of assets (3)			
Subtotal			
<u>Decrease in Working Capital</u>			
Decrease in cash balances			
Decrease in bank balances			
Decrease in inventories			
Increase in provision for bad debts			
Decrease in letters of credit			
Decrease in accounts receivable			
. Customer accounts			
. Loans to employees			
Decrease in other debit balances			
Subtotal			
<u>EXTERNAL FINANCING</u>			
<u>Contributions to capital</u>			
Capital stock sold			
Government subsidies			
Subtotal			
<u>Loans</u>			
Long-term loans:			
. Local			
. Foreign			
Bank loans			
Subtotal			
<u>Creditor accounts</u>			
Increase in bank overdrafts			
Increase in accounts payable			
Increase in other credit accounts			
Subtotal			
<b>TOTAL SOURCES</b>			

Notes: (1) Current year projection.  
(2) Budget estimate.  
(3) Excluding sales attributed to current operations.

SOURCES AND USES OF FUNDS  
(LE 1,000's)

USES OF FUNDS	Year		
	1978	1979 <sup>(1)</sup>	1980 <sup>(2)</sup>
<u>CAPITAL FORMATION</u>			
<u>Increase in Fixed Capital</u>			
Additions to fixed assets			
Additions to projects under construction			
Advance payments for fixed assets:			
. To contractors			
. Letters of Credit			
Subtotal			
<u>Increase in Working Capital</u>			
Increase in cash balances			
Increase in bank balances			
Increase in inventories			
Increase in letters of credit for inventories			
Increase in securities			
Increase in accounts receivable			
. Customer accounts			
. Loans to employees			
Increase in other debit balances			
Subtotal			
<u>TRANSFERS</u>			
Transfer of net profits to Ministry of Finance			
Payment of dividends			
Payment of profit share to employees fund			
Additions to funded reserves			
Subtotal			
<u>DEBT REPAYMENT</u>			
Repayment of loans			
. Local			
. Foreign			
Repayment of bank loans			
Subtotal			
<u>NET DEFICIT</u>			
<u>TOTAL USES</u>			

Notes: (1) Current year projection.  
(2) Budget estimate.

REVENUE ESTIMATES  
(LE 1,000's)

Service Center	Potable Water <sup>(1)</sup>		Connections		Other Revenues		Total	
	Current Year	Budget Year	Current Year	Budget Year	Current Year	Budget Year	Current Year	Budget Year
Other Revenues								
Total Revenues								

Note: (1) Or sewage treated.

EXPENSE ESTIMATE BY BUDGET ITEM

Expense Description	Prior Year		Current Year		Budget
	Budget	Actual	Budget	Actual	
<u>OPERATING EXPENSES</u>					
PERSONNEL					
Permanent Posts					
Overtime					
Incentives					
Other Allowances					
Benefits					
Other					
Total Personnel					
COMMODITIES					
Chemicals					
Fuels					
Electricity					
Spare Parts					
Other Commodities					
Total Commodities					
SERVICES					
Maintenance					
Transportation					
Other Services					
Total Services					
DEPRECIATION					
INTEREST					
TOTAL OPERATING EXPENSES					
<u>OTHER EXPENSES</u>					
Imputed Rent					
Imputed Interest					
Other Transfers					
Total Other Expenses					
TOTAL EXPENSES					

COST PER CUBIC METER OF  
WATER BY BUDGET ITEM (1) (2)

Item	Cost - M3 (3)					Percent Change 1976-1980
	1976	1977	1978	1979	1980	
<u>Personnel</u>						
Wages						
Overtime						
Incentives						
Benefits						
Other						
Subtotal	_____	_____	_____	_____	_____	
Percent of Total	XX%	XX%	XX%	XX%	XX%	
<u>Commodities</u>						
Raw Materials						
Energy						
Spare Parts						
Other						
Subtotal	_____	_____	_____	_____	_____	
Percent of Total	XX%	XX%	XX%	XX%	XX%	
<u>Services</u>						
Maintenance						
Other Services						
Subtotal	_____	_____	_____	_____	_____	
Percent of Total	XX%	XX%	XX%	XX%	XX%	
<u>Current Transfers</u>						
Interest						
Depreciation						
Other						
Subtotal	_____	_____	_____	_____	_____	
Percent of Total	XX%	XX%	XX%	XX%	XX%	
<u>Special Transfers</u>						
Total Expenses						

- Notes: (1) Sewerage utilities should base all calculations on cubic meters of sewage collected.  
 (2) This is an example illustrating the format for preparing the 1980 budget.  
 (3) Cost of each item in millimees.

RESPONSIBILITY CENTER ESTIMATE  
(LE 1,000's)

Responsibility Center	1978	1979		1980(2)
	Actual	Budget	Actual(1)	
11 Chairman's Office				
12 Management Services				
21 General Administration				
22 Personnel				
23 Administrative Services				
24 Materials Management				
25-26 Stores				
31 General Finance				
32 Data Processing				
33 Financial Control				
34 Customer Service(3)				
41 Customer Service-General(4)				
44-45 Service Centers(4)				
51 Production-General(5)				
52 Facilities and Maintenance				
53-54 Plants				
55-56 Wellfields				
57-58 Pumping Stations				
59 Laboratories				
71 Distribution(6)				
91 Technical-General				
92 Project Management				
93 Civil Engineering				
94 Mechanical and Electrical Engineering				
Unallocated Expenses				
Total Expenses				

- Notes: (1) Current projection.  
(2) Budget estimate.  
(3) For sewerage companies only.  
(4) For water companies only.  
(5) Treatment in sewerage companies.  
(6) Sewage collection in sewerage companies.

COST PER CUBIC METER OF  
WATER BY DEPARTMENT (1)(3)

Item	Cost - Milliemes(2)					Percent Change 1976-1980
	1976	1977	1978	1979	1980	
<u>Operating Expenses</u>						
Administration						XX%
Finance						XX%
Customer Service						XX%
Operations						XX%
Plants						XX%
Distribution						XX%
Other						XX%
Technical						XX%
Subtotal						XX%
<u>Transfers</u>						
Interest						XX%
Depreciation						XX%
Subtotal						XX%
Total						
Percent Change from Previous Year	XX%	XX%	XX%	XX%	XX%	XX%

- Notes: (1) Sewerage utilities should measure cost per cubic meter of sewage collected.  
(2) Cost per cubic meter in milliemes.  
(3) This is an example illustrating the format for preparing the 1980 budget.

PROJECT SUMMARY

Project Title	Code	Projected Total Cost of Project	Projected Percent Complete <sup>(1)</sup> 12/31/79	Estimated Expenditure 1979 <sup>(1)</sup>	Estimated Expenditure in 1980 <sup>(2)</sup>	Estimated Percent Complete <sup>(2)</sup> 12/31/80
		(LE 000's)		(LE 000's)	(LE 000's)	
Small Projects						
Total						

Notes: (1) Current year  
 (2) Budget year

SUMMARY OF OTHER CAPITAL EXPENDITURES  
(LE 1,000's)

Item	Year of Expenditure	
	1979	1980
Small Expenditures		
Contingencies		
Total		

BALANCE SHEET  
(LE 1,000's)

EXHIBIT A3.32

ITEM	Value on December 31st		
	1978	1979(1)	1980(2)
<u>FIXED ASSETS</u>			
Intangible Plant			
Source of Supply Plant			
Pumping Plant			
Water Treatment Plant			
Transmission and Distribution Plant			
General Plant			
Projects in Progress			
Subtotal			
Less Accumulated Depreciation			
Net Fixed Assets			
<u>CURRENT ASSETS</u>			
Cash			
Securities			
Inventories			
Accounts Receivable			
Less than one year old			
More than one year old			
Miscellaneous debit Accounts its			
Total Current Assets			
<u>TOTAL ASSETS</u>			
<u>CAPITAL AND RESERVES</u>			
Contributed Capital			
Reserves for:			
Financial projects			
Inflation			
Obsolete inventory			
Other			
Total Capital and Reserves			
<u>LONG TERM LOANS</u>			
Domestic			
Foreign			
Total Long-Term Loans			
<u>CURRENT LIABILITIES</u>			
Bank overdrafts			
Notes payable			
Accounts payable			
Provisions for:			
Bad debts			
Accident claims			
Staff indemnity			
Others			
Other Credit Balances			
Total Current Liabilities			
<u>TOTAL CAPITAL AND LIABILITIES</u>			

Notes: (1) Current year projected  
(2) Budget year estimate

OPERATIONS CASH FLOW  
(LE 1,000's)

	1978	1979 <sup>(1)</sup>	1980 <sup>(2)</sup>
	LE	LE	LE
OPENING BALANCES			
<u>SOURCES OF CASH:</u>			
Collection Of Receivables			
Government			
Institutions			
All Others			
Operating Loans:			
State			
Other			
State Operating Subsidies			
Interest			
Rents			
Other Sources			
Total Sources of Cash			
<u>CASH DISBURSEMENT:</u>			
Labor and Fringe Benefits			
Taxes			
Payment of Accounts:			
Inventory			
Expenses			
Letter of Credit (for non-capital expenditures)			
Operating Loan Repayments			
Interest			
Rents and Leases			
Transfer To Capital Projects			
Transfer to Ministry of Finance			
Other Disbursements			
Total Disbursements			
Closing Balance			

Notes: (1) Current year projection.  
(2) Budget year estimate.

POTABLE WATER SALES<sup>(1)</sup>  
(Million M<sup>3</sup>)

Customer Service Center: \_\_\_\_\_ Customer Type: \_\_\_\_\_

Code: \_\_\_\_\_ Date: \_\_\_\_\_

Month	Consumption		Increase over Current Year		Total Consumption 1980(3)
			Increased Consumption		
	1978 (a)	1979 (2) (b)	Existing Customers (c)	New Customers (d)	
Jan					
Feb					
Mar					
Apr					
May					
Jun					
Jul					
Aug					
Sept					
Oct					
Nov					
Dec					
Total					

ESTIMATED BILLED VALUE

Months	Consumption	Rate	Value
Total			

- Notes: (1) Sewage volume should be substituted for water consumption by GOSSD.  
 (2) Current year projected.  
 (3) Budget year.

PERSONNEL ANALYSIS

Item	YEARS (2)					Percent Change 1976-1980
	1976	1977	1978	1979	1980	
Number of Personnel Percent Change (1)						
Total Personnel Cost (LE 1,000's) Percent Change (1)						
Average Personnel Cost: Per Person Percent Change (1)						
Number of Personnel: Treatment per Million M <sup>3</sup> Customer Related per 1,000 Customers						
Management/Worker Ratio (Grade 2 and up ÷ Grade 3-6)						
Overtime Ratio Overtime Pay ÷ Cash Wages						
Contract Man-Hours as Percent of Utility man-hours						

- Notes: (1) Percent change from previous year.  
(2) This is an example illustrating the format for preparing the 1980 budget.

RAW MATERIAL AND ENERGY ANALYSIS

Item	Year(1)				
	1976	1977	1978	1979	1980
<u>Alum</u> Amount of Water Treated (Million M3) Rate of Use (Gms/ml) Total Use (Tons) Cost per ton (LE/Ton) Total Cost (LE 000's)					
<u>Chlorine</u> Amount of Water Treated (Million M3) Rate of Use (Gms/ml) Total Use (Tons) Cost per ton (LE/Ton) Total Cost (LE 000's)					
<u>Nalco</u> Amount of Water Treated (Million M3) Rate of Use (Gms/ml) Total Use (Tons) Cost per ton (LE/Ton) Total Cost (LE 000's)					
<u>Diesel Fuel for Pumping</u> Water Pumped (Million M3) Liters/Million M3 Water Liters Used Cost/Liter Total Cost					
<u>Diesel Fuel for Power</u> Kwh Produced Liters/Kwh Liters Used Cost/Liter Total Cost					
<u>Solar for Pumping</u> Water Pumped (Million M3) Liters/Million M3 Water Liters Used Cost/Liter Total Cost					
<u>Electricity for Pumping</u> Water Pumped (Million M3) Kwh/Million M3 Water Kwh Used Cost/Kwh Total Cost					

Note: (1) This is an example illustrating the format for preparing the 1980 budget.

PLANT MAINTENANCE ANALYSIS  
(LE 1,000's)

Item	1978	1979 <sup>(1)</sup>	1980 <sup>(2)</sup>
<u>WAGES</u>			
Cash			
Overtime			
Incentives			
Other			
Total Wages			
<u>COMMODITIES</u>			
Diesel Engine Parts			
Electric Motor Parts			
Pump Parts			
Other Mechanical Parts			
Electrical Parts			
Other Spare Parts			
Other Materials			
Total Commodities			
<u>CONTRACT MAINTENANCE</u>			
<u>OTHER EXPENSES</u>			
TOTAL EXPENSES			

Notes: (1) Current year projected.  
(2) Budget estimate.

ESTIMATED DEPRECIATION  
(LE 1,000's)

Account Number		Fully Depreciated			Not Fully Depreciated			New This Year		Total Depreciation
		Value	Rate	Depreciation	Value	Rate	Depreciation	Value	Depreciation	
	<u>Intangible Plant</u>									
301	Organization									
302	Franchises and consents									
303	Miscellaneous intangible plant									
	<u>Source of Supply Plant</u>									
310	Land and land rights									
311	Structures and improvements									
312	Collecting and impounding reservoirs									
313	Lake, river and other intakes									
314	Wells and springs									
315	Infiltration galleries and tunnels									
316	Supply mains									
317	Other water source plant									
	<u>Pumping Plant</u>									
320	Land and land rights									
321	Structures and improvements									
322	Boiler plant equipment									
323	Other power production equipment									
324	Steam pumping equipment									
325	Electric pumping equipment									
326	Diesel pumping equipment									
327	Hydraulic pumping equipment									
328	Other pumping equipment									
	Subtotal									

ESTIMATED DEPRECIATION  
(LE 1,000's)

Account Number		Fully Depreciated			Not Fully Depreciated			New This Year		Total Depreciation
		Value	Rate	Depreciation	Value	Rate	Depreciation	Value	Depreciation	
	<u>Water Treatment Plant</u>									
330	Land and land rights									
331	Structures and improvements									
332	Water treatment equipment									
	<u>Transmission and Distribution Plant</u>									
340	Land and land rights									
341	Structures and improvements									
342	Distribution reservoirs and standpipes'									
343	Transmission and distribution mains.									
344	Fire mains									
345	Services									
346	Meters									
347	Meter installations									
348	Hydrants									
349	Other transmission and distribution plant									
	<u>General Plant</u>									
389	Land and land rights									
390	Structures and improvements									
391	Office furniture and equipment									
392	Transportation equipment									
393	Stores equipment									
394	Tools, shop and garage equipment									
395	Laboratory equipment									
396	Power operated equipment									
397	Communication equipment									
398	Miscellaneous equipment									
399	Other tangible property									
	Subtotal this page									
	Subtotal from page 1									
	Total									

DEBT SERVICE EXPENDITURES  
(LE 1,000's)

Date of Loan	Original Principal	Principal Jan 1, Budget Year	Description	Principal payments in budget year	Budgeted Interest	Total Debt Service
Total						

ANALYSIS OF ACCOUNTS RECEIVABLE  
(LE 1,000's)

Customer Service Center: \_\_\_\_\_ Manager: \_\_\_\_\_  
Code: \_\_\_\_\_ Date: \_\_\_\_\_

	GENERAL CUSTOMERS	INDUSTRIAL CUSTOMERS	GOVERNMENT OFFICES	OTHERS
BALANCE DEC. 31, 1978 <sup>(1)</sup>				
<u>CURRENT YEAR 1979</u> <sup>(2)</sup>				
EST. COLLECTION OF PAST YEARS' DEBTS				
EST. WRITE-OFF OF PAST YEARS' DEBTS				
ESTIMATED NEW RECEIVABLES				
BALANCE DEC. 31, 1979				
<u>BUDGET YEAR - 1980</u> <sup>(3)</sup>				
EST. COLLECTION OF PAST YEARS' DEBTS				
EST. WRITE-OFF OF PAST YEARS' DEBTS				
ESTIMATED NEW RECEIVABLES'				
BALANCE DEC. 31, 1980				

Notes: (1) Last year.  
(2) Current year projections.  
(3) Budget year estimates.

ESTIMATED VALUE OF INVENTORIES  
(LE 1,000's)

Store Name: \_\_\_\_\_

Manager: \_\_\_\_\_

Code: \_\_\_\_\_

Date: \_\_\_\_\_

	Pipes	Gates and Valves	Engine Parts	Other Mechanical Parts	Chemicals	Fuels	Other Raw Materials	Office Supplies	Scrap	Other
Balance Dec. 31 1978 <sup>(1)</sup>										
1979 <sup>(2)</sup> Additions Issues - Usage - Scrap										
Balance Dec. 31										
1980 <sup>(3)</sup> Additions Issues - Usage - Scrap										
Balance Dec. 31										
<u>Net Change</u> 1979 1980										
Months on Hand Jan. 1, 1979 Jan. 1, 1980 Jan. 1, 1981										

Notes: (1) Prior year actual  
(2) Current year projected  
(3) Budget year estimate

LONG-RANGE FINANCIAL PLANNING

PURPOSE

A long-range financial plan is essential to a large and growing utility. It helps management:

- Plan capital and revenue needs. A financial plan enables management to estimate when and how much money will be required for both operations and capital expenditures.
- Obtain capital. A financial plan can be used to demonstrate the utility's ability to repay loans to prospective lenders.
- Improve the use of existing assets. Management can use the financial plan to set goals for more efficient use of assets.
- Make better decisions. A financial plan should enable managers to avoid making decisions that are detrimental to the utility's future financial position.

COMPONENTS OF A FINANCIAL PLAN

The primary components of the long-range financial plan are shown in Table A4.1 and discussed on the following page.

TABLE A4.1

COMPONENTS OF A LONG-RANGE FINANCIAL PLAN

<u>Component</u>	<u>Exhibi</u>
Sources and Uses of Funds	A4.1
Profit and Loss Estimates	A4.2
Pro Forma Balance Sheet	A4.3
Debt Service Estimates	A4.4
Estimated Capital Expenditures	A4.5

- Sources and Uses of Funds. This statement shows whether:
  - . Sufficient funds are available to meet estimated and planned needs.
  - . Funds are to be raised internally or externally.
  - . Funds are to be invested, used for current operations or paid to others.

The other components of the plan provide additional detail to support this statement.

- Profit and Loss Estimate These estimates are required to ensure that detailed consideration is given to operating revenues and expenses. The bottom line (net profit or loss) is a primary input to the Sources and Uses of Funds statement.
- Balance Sheet. A pro forma balance sheet enables management to evaluate trends in the financial health of the utility. It shows how the acquisition and expenditure of funds shown in the Sources and Uses of Funds statement affects the value of assets and liabilities at year end.
- Debt Service Estimates. These estimates enable management to evaluate the impact of debt service requirements on the utility. This analysis is needed because the utilities are preparing to incur substantial debts. Debt service is represented in the Sources and Uses of Funds statement explicitly as debt repayments and implicitly as interest in the net profit figure.
- Estimated Capital Expenditures. These estimates present the major capital expenditures expected by the utility. They are represented in the Sources and Uses of Funds as Increase in Fixed Capital.

Other analyses may be required to support these components of the plan.

#### TIME SPAN

As shown in Exhibits A4.1 - A4.5 detailed plans should only be prepared for five years beyond the current year. Only debt requirements should be estimated for later years.

PROCEDURE

The long-range financial plan cannot be prepared until priorities have been placed on proposed capital projects. At that point, the Manager, Budget and Cost, should prepare a preliminary draft of each of the components and circulate them to the Management Committee. The Committee should revise and approve a final draft of each component of the plan. The approved plan will then be the base for the next budget cycle.

The proposed schedule for preparing the long-range plan is shown in Table A4.2:

TABLE A4.2

SCHEDULE FOR LONG-RANGE FINANCIAL PLANNING

<u>Activity</u>	<u>Completion Date</u>	<u>Responsibility</u>
Prepare list of projects with approximate timing and costs.	March 1	Technical Sector
Prepare preliminary version of the components described in Table A4.1	April 1	Manager, Budget and Cost
Review, revise and approve a Long-Range Financial Plan	May 1	Management Committee

The timing of activities described in Table A4.2 is dictated by the State budgeting process. Because of the large cuts often made by the State, long-range planning can only begin after the capital budget for the current year has been approved.

SOURCES AND USES OF FUNDS  
(LE 1,000's)

Item	Year (1)					
	1979	1980	1981	1982	1983	1984
<u>SELF FINANCING</u>						
<u>From Net Profits</u>						
<u>Decrease in Fixed Assets</u>						
Provision for depreciation						
Proceeds from sale of assets(2)						
Subtotal						
<u>Decrease in Working Capital</u>						
Decrease in cash balances						
Decrease in bank balances						
Decrease in inventories						
Increase in provision for bad debts						
Decrease in letters of credit						
Decrease in accounts receivable						
. Customer accounts						
. Loans to employees						
Decrease in other debit balances						
Subtotal						
<u>EXTERNAL FINANCING</u>						
<u>Contributions to capital:</u>						
Capital stock sold						
Government subsidies						
Subtotal						
<u>Loans</u>						
Long-term loans:						
. Local						
. Foreign						
Bank loans						
Subtotal						

Notes: (1) The years shown here are for illustration only. This example is for planning during 1979.

(2) Excluding sales attributed to current operations.

SOURCES AND USES OF FUNDS  
(LE 1,000's)

Item	Year					
	1979	1980	1981	1982	1983	1984
<u>Creditor accounts</u>						
Increase in bank overdrafts						
Increase in accounts payable						
Increase in other credit accounts						
Subtotal						
<b>TOTAL SOURCES</b>						

<u>CAPITAL FORMATION</u>						
<u>Increase in Fixed Capital</u>						
Additions to fixed assets						
Additions to projects under construction						
Advance payments for fixed assets:						
. To contractors						
. Letters of Credit						
Subtotal						
<u>Increase in Working Capital</u>						
Increase in cash balances						
Increase in bank balances						
Increase in inventories						
Increase in letters of credit for inventories						
Increase in securities						
Increase in accounts receivable						
. Customer accounts						
. Loans to employees						
Increase in other debit balances						
Subtotal						

SOURCES AND USES OF FUNDS  
(LE 1,000's)

Item	Year					
	1979	1980	1981	1982	1983	1984
<u>TRANSFERS</u>						
Transfer of net profits to Ministry of Finance						
Payment of dividends						
Payment of profit share to employees fund						
Additions to funded reserves						
Subtotal						
<u>DEBT REPAYMENT</u>						
Repayment of loans						
. Local						
. Foreign						
Repayment of bank loans						
Subtotal						
<u>NET DEFICIT</u>						
<u>TOTAL USES</u>						

PROFIT AND LOSS ESTIMATES  
(LE 1,000's)

Item	Year (1)					
	1979	1980	1981	1982	1983	1984
<u>OPERATING REVENUES</u>						
General Customers		-				
Industrial Customers						
Government						
Harbor						
All Other						
Total Water Sales						
Connections						
All Other Revenues						
Total Revenues						
<u>OPERATING EXPENSES</u>						
Wages						
Permanent Posts						
Overtime						
Other						
Commodities						
Chemicals						
Fuels						
Electricity						
Other Utilities						
Spare Parts						
Other						
Services						
Maintenance						
Transportation						
Other						
Depreciation						
Interest						
Other Operating Expenses						
Operating Profit (Loss)						
Other Expenses						
Imputed Rent						
Imputed Interest						
Other Transfers						
Net Profit (Loss)						

Note: (1) The years shown here are for illustration only.  
This example is for planning during 1979.

PRO FORMA BALANCE SHEET  
(LE 1,000'S)

ASSETS	1979 <sup>(1)</sup>	1980	1981	1982	1983	1984
<u>FIXED ASSETS</u>						
Intangible Plant						
Source of Supply Plant						
Pumping Plant						
Water Treatment Plant						
Transmission and Distribution Plant						
General Plant						
Projects in Progress						
Subtotal						
Less Accumulated Depreciation						
Net Fixed Assets						
<u>CURRENT ASSETS</u>						
Cash						
Securities						
Inventories						
Accounts Receivable						
Less than 1 year old						
More than 1 year old						
Miscellaneous Debit Accounts						
Total Current Assets						
<u>TOTAL ASSETS</u>						

Note: (1) Years are provided as an example for 1979 planning.

PRO FORMA BALANCE SHEET  
(LE 1,000's)

LIABILITIES AND CAPITAL	1979	1980	1981	1982	1983	1984
<u>CAPITAL AND RESERVES</u>						
Contributed Capital						
Forwarded Supplies						
Reserves for:						
Financial projects						
Inflation						
Obsolete inventory						
Other						
<b>Total Capital and Reserves</b>						
<u>LONG TERM LOANS</u>						
Domestic						
Foreign						
<b>Total Long Term Loans</b>						
<u>CURRENT LIABILITIES</u>						
Bank overdrafts						
Notes payable						
Accounts payable						
Provisions for:						
Bad Debts						
Accident claims						
Staff indemnity						
Others						
Other Credit Balances						
<b>Total Current Liabilities</b>						
<b>TOTAL CAPITAL AND LIABILITIES</b>						

DEBT SERVICE ESTIMATES

Year(1)	Debt Service Estimates (2)	
	Total Expenditure (LE 1,000's)	Cost Per Cubic Meter(3) (Milliemes)
1979		
1980		
1981		
1982		
1983		
1984		
1985		
1986		
1987		
1988		
1989		
1990		
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		

- Notes: (1) The years shown here are for illustration only. This example is for planning during 1979.  
 (2) Debt Service = Interest plus principal payments  
 (3) Estimated cost per cubic meter of billed water or per cubic meter of collected sewage.

DEBT SERVICE ESTIMATES  
(LE 1,000's)

Debtor	Original Principal	Interest Rate	DEBT SERVICE (1)											
			Year (2)											
			1979	1980	1981	1982	1983	1984	1985	1986	1987	1988		
Total Debt Service														
Cost per Cubic Meter (3)														

- Notes:
- (1) Debt Service = Interest plus principal payments
  - (2) The years shown here are for illustration only. This example is for planning during 1979.
  - (3) Estimated cost (in millimes) per cubic meter of billed water or per cubic meter of collected sewage.

ESTIMATED CAPITAL EXPENDITURES (1)  
(LE 1000's)

CAPITAL EXPENDITURE	Year (2)						Remaining Costs
	1979	1980	1981	1982	1983	1984	
<u>INCREASED CAPACITY</u> (3)							
<u>MAJOR MAINTENANCE</u> (3)							
<u>NEW CAPABILITY</u> (3)							
<u>OTHER</u> (3)							
<u>TOTAL ESTIMATED COSTS</u>							

- Notes: (1) This form has been condensed to one page. In practice, one or more pages may be required for each type of expenditure.  
 (2) The years shown here are for illustration only. This example is for planning during 1979.  
 (3) Description of expenditures.

GOSSD AND SCA FINANCIAL STATEMENTS

INTRODUCTION

Formal financial statements have not been prepared in the past for GOSSD or for the water operations of SCA. According to the terms of recent loans, GOSSD must begin preparing such statements. SCA should begin producing these statements to ease the eventual separation of water operations from SCA. Management of both organizations should find them useful for planning and control.

The SAS recommends six different financial statements:

- Balance Sheet
- Statement of Sources and Uses of Capital Funds
- Current Operations Account
- Production and Trading Account
- Profit and Loss Account
- Cash Statement

Because these utilities do not have an inventory of finished goods, the information normally found in the Current Operations Account and the Production and Trading Account can be easily shown in the Profit and Loss Statement or the Statement of Sources and Uses of Capital Funds. The utilities need a cash statement for internal control (See Paragraph 3.3.3.3) but the Statement of Sources and Uses of Funds should provide sufficient detail for external analysts. Therefore, only three financial statements are recommended:

- Balance Sheet
- Profit and Loss Statement
- Sources and Uses of Capital Funds

GOSSD AND SCA FINANCIAL STATEMENTS

BALANCE SHEET

The purpose of the balance sheet is to:

- Show the financial status of the business at a defined point in time.
- Show how the business is financed (debt versus equity).
- Enable analyses of the financial health of the organization.
- Provide the basis for control of asset and liability accounts.

The recommended format for the Sewerage and Sanitary Drainage Organizations is shown in Exhibit A5.1. See Exhibit A5.2 for the format for Suez Canal Zone Water Operations.

With two possible exceptions, these balance sheets may be developed from existing accounting records. GOSSD does not have adequate cost records for fixed assets and should therefore rely on the estimates provided in the accompanying Sewage Utility - Inventory and Valuation Report. SCA cannot attribute individual loans to water operations. It may elect to either assign no loans to water operations or assign the same ratio of loans/fixed assets as is true for the entire SCA.

PROFIT AND LOSS STATEMENT

The purpose of the Profit and Loss Statement is to:

- Enable evaluation of whether the utility is self-sustaining.
- Indicate the general level of operations.
- Permit a rough analysis of managerial efficiency.

GOSSD AND SCA FINANCIAL STATEMENTS

The utilities should be able to develop this statement from their existing accounting data. GOSSD must again rely on the Inventory Valuation Report for developing estimates of depreciation and SCA should assign interest expense consistently with the assignment of loan values. The recommended formats are shown in Exhibits A5.3 and A5.4.

STATEMENTS OF SOURCES  
AND USES OF FUNDS

The purpose of the Statement of Sources and Uses of Funds is to:

- Present a clear picture of operating and capital expenditures.
- Show changes in the funding of the utility.
- Indicate how management is applying the available capital (e.g. allocation to operating expenses, to assets, or to transfers to others.)

The utilities should be able to prepare this statement from data in the existing and proposed accounts. The format shown in Exhibit A3.24 of Appendix 3 can be used if only two columns (one for each of the last two years) are used.

GENERAL ORGANIZATION FOR GREATER CAIRO  
SEWERAGE AND SANITARY DRAINAGE(1)  
- BALANCE SHEET

Asset	Value on December 31	
	1978 <sup>(2)</sup>	1979
<b>FIXED ASSETS</b>		
Intangible Plant		
Collection Plant		
Pumping Plant		
Treatment and Disposal Plant		
General Plant		
Projects in Progress		
Subtotal		
Less Accumulated Depreciation		
Net Fixed Assets		
<b>CURRENT ASSETS</b>		
Cash		
Securities		
Inventories		
Chemicals and raw materials		
Fuel, Oil, and Lubricants		
Spare Parts		
Pipes		
Office Supplies and Stationery		
Subtotal		
Accounts Receivable		
Less Allowance for Doubtful Accounts		
Subtotal		
Miscellaneous Debit Accounts		
Net Current Assets		
<b>OTHER DEBIT BALANCES</b>		
Deficit Carried Forward		
<b>TOTAL ASSETS</b>		

Notes: (1) A similar title should be used by Alexandria.  
(2) See Inventory and Valuation Study for values of



GENERAL ORGANIZATION FOR SUEZ CANAL REGION  
WATER SERVICE  
-BALANCE SHEET(1)

Assets	Value on December 31st	
	1978	1979
<u>FIXED ASSETS</u>		
Intangible Plant		
Source of Supply Plant		
Pumping Plant		
Water Treatment Plant		
Transmission and Distribution Plant		
General Plant		
Project in Progress		
Subtotal		
Less Accumulated Depreciation		
Net Fixed Assets		
<u>CURRENT ASSETS</u>		
Cash		
Securities		
Inventories		
Chemicals		
Other Raw Materials		
Fuel, Oil, and Lubricants		
Spare parts		
Pipes		
Accounts Receivable		
Less than one year old(2)		
More than one year old		
Less Allowance for Doubtful Accounts		
Net Accounts Receivable		
Miscellaneous Debit Accounts		
Total Current Assets		
<u>OTHER DEBIT BALANCES</u>		
Deficit Carried Forward		
<b>TOTAL ASSETS</b>		

- Notes: (1) Capital and Reserves, Long-Term Loans, and Current Liabilities should be shown in the same manner as for sewerage utilities.
- (2) This analysis is usually not made but the water companies have been reluctant to write-off old receivables.

GENERAL ORGANIZATION FOR GREATER CAIRO  
SEWERAGE AND SANITARY DRAINAGE  
- PROFIT AND LOSS STATEMENT

Item	Year Ending December 31	
	1978	1979
<b>OPERATING REVENUES</b>		
Sewer User Charges		
Permits		
Connection Fees		
Total Operating Revenues		
<b>OPERATING EXPENSES</b>		
Personnel		
Wages		
Overtime		
Allowances and Incentives		
Benefits		
Other Personnel Expenses		
Total Personnel Expenses		
Commodities		
Chemicals		
Fuel		
Oil and Lubricants		
Other Materials		
Electricity		
Spare Parts		
Pipes		
Office Supplies and Stationery		
Total Commodities		
Services		
Maintenance		
Transportation		
Training		
Other Services		
Total Services		
Transfers		
Interest		
Depreciation		
Others		
Total Transfers		
<b>OPERATING PROFIT (LOSS)</b>		
<b>NON-OPERATING REVENUES</b>		
Subsidies		
Sale of Scrap		
Other		
Total		
<b>NON-OPERATING EXPENSES</b>		
<b>NET PROFIT (LOSS)</b>		

GENERAL ORGANIZATION FOR SUEZ CANAL REGION  
WATER SERVICE  
- PROFIT AND LOSS STATEMENT

Item	Year Ending December 31	
	1978	1979
<u>OPERATING REVENUES</u>		
Potable Water		
General Customers		
Industrial Customers		
Government		
Suez Canal Authority		
Harbour		
Others		
Subtotal		
Other Water Revenues		
Meter Rentals		
Connections		
Other Services		
Total Operating Revenues		
<u>OPERATING EXPENSES</u>		
Water Treatment		
Personnel		
Chemicals		
Fuel and Oil		
Electricity		
Other Materials		
Spare Parts		
Services		
Depreciation		
Subtotal		
Distribution		
Personnel		
Materials		
Spare Parts		
Services		
Depreciation		
Other		
Subtotal		
Technical (Projects)		
Personnel		
Office Supplies		
Services		
Other		
Subtotal		

GENERAL ORGANIZATION FOR SUEZ CANAL REGION  
WATER SERVICE  
PROFIT AND LOSS STATEMENT

	Year Ending December 31	
	1978	1979
Administration Personnel Office Supplies Services Other Expenses Subtotal		
Finance Personnel Office Supplies Other Expenses Subtotal		
Customer Service Personnel Office Supplies Other Expenses Subtotal		
General Utility Personnel Commodities Services Interest Depreciation Bad Debts Others Subtotal		
OPERATING PROFIT (LOSS)		
NON-OPERATING REVENUES Subsidies Sale of Scrap Others Total		
NON-OPERATING EXPENSES		
NET PROFIT (LOSS)		

DESCRIPTION OF ACCOUNTING BOOKS

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Notes:(1) Not described in detail either because present practice is adequate or an accountant familiar with the SAS could easily develop the book.

(2) Format is similar to Water Sales.

DESCRIPTION OF ACCOUNTING BOOKS

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Notes: (1) Not described in detail either because present practice is adequate or an accountant familiar with the SAS could easily develop the book.  
(2) Format is similar to Water Sales.

## DESCRIPTION OF ACCOUNTING BOOKS

### CATEGORIES OF BOOKS

This Appendix provides a brief descriptions of some of the accounting books that the utilities should keep. These books may be classified into five categories:

- General Ledger. Contains the accounts that summarize all of the financial activities of the utility. Generally these accounts are limited to those appearing on the Balance Sheet or Profit and Loss Statement although additional supporting accounts may be included.
- General Journal. Records in date order all transactions posted to the General Ledger. These entries may be either original entries (i.e., not appearing elsewhere) or entries derived from the subsidiary journals.
- Subsidiary Journals. Present in date order and classifies by account the financial transactions of the utilities.
- Subsidiary Ledgers. Bring together all transactions affecting a single account regardless of the date of the transactions.
- Analysis Books. Collect and classify the data required for cost accounting.

### FORM OF BOOKS

These books may take four forms:

- Traditional bound book in which transactions are manually recorded.
- A file with a card or sheet for each separate account. Entries may be made manually, by accounting machine or, if properly prepared, by a simple computer.
- A tape or disc which requires a computer to alter or read the contents.
- A file consisting of the original documents arranged in a logical order.

DESCRIPTION OF ACCOUNTING BOOKS

All four types can be used by the utilities. Because of the variety of data processing equipment available at the utilities, general recommendations as to form to be used are not made in the following descriptions of books. Instead, the conventions described in Table A6.1 are used:

TABLE A6.1

DEFINITION OF PAGE AND ACCOUNT

<u>Form of Book</u>	<u>Type of Book</u>		
	<u>Journal</u>	<u>Ledger</u>	<u>Analysis Book</u>
Page in a bound book	Page	Account	Account
Card or sheet in a file	Page	Account	Account
Logical set of records in a computer	Page	Account	Account
Defined group of original documents in a file	Page	Not used	Account

BOOK DESCRIPTIONS

New books or books that require improvement are described on the following pages.

DESCRIPTION OF ACCOUNTING BOOKS

Name of Book:	Water Sales Journal
Maintained by:	Customer Accounts
Purpose:	To classify billings for water by Ledger account
Organization:	One page or more for each month
Columns:	<p><u>Description:</u> Date, Service Center, Summary Collection List Number, Number of Bills, First and Last Bill Number</p> <p><u>Debits:</u> (161) Water customers classified by type of customer</p> <p><u>Credits:</u> (411) Water sales classified by Water, Meter Rent, Meter Maintenance and Stamp Duty</p>
Data Source:	Analysis of Summary Collection List.
Posting:	Once a month debits and credits are totaled and posted to the General Journal
<hr/>	
Name of Book:	Connections Journal
Maintained by:	Customer Accounts
Purpose:	To serve as an original entry journal for connections transactions
Organization:	One page or more each month
Columns:	<p><u>Description:</u> Date, Document Number, Description of Transaction, Customer Name</p> <p><u>Debits:</u> (161) Customer Accounts - Services classified by type of customer</p> <p><u>Credit:</u> (417) Sales of Services classified by connections sales and other services</p>
Data Sources:	Sales of Services from Job Accounting Statement or Customer Service Center estimate
Posting:	Once a month the columns should be totaled and posted to the General Journal. Individual transactions are posted to the Customer Accounts - Service Sales ledger daily.

DESCRIPTION OF ACCOUNTING BOOKS

**Name of Book:** Domestic Commodities Purchase Journal

**Maintained by:** Materials Control

**Purpose:** To classify materials entering inventories by the appropriate General Ledger Account

To provide a comprehensive record of commodities purchased (except commodities purchased for cash which are used immediately)

**Organization:** A separate page(s) for each month.

**Columns:** Description: Supplier, Invoice (number and Date), Commodity, Code, Unit, Quantity, Value Classified by Public vs. Private Sector Origin

Debits: (131) Commodities classified by General Ledger Commodities Accounts

Credits: (216) Suppliers classified by invoice, freight and insurance, miscellaneous and by public vs. private sector

**Data Source:** Accounting Entry Statement prepared by Purchasing

**Posting:** The totals of the debits and credits are posted to the General Journal at the end of the month.

DESCRIPTION OF ACCOUNTING BOOKS

Name of Book: Foreign Commodities Purchases Journal  
Maintained by: Materials Control  
Purpose: Same as for Domestic Commodities Purchases  
Organization: A separate page or more each month  
Columns: Description: Supplier, Country of Origin, Commodity Description and Code, Quantity, Invoice (Number and Date)  
Debits: (131) Commodities classified by General Ledger commodity accounts  
Credits: (261) and (263) Suppliers classified by invoice, freight and insurance, customs duty, bank charges and commissions.  
Data Source: Accounting Entry Statement prepared by Purchasing  
Posting: The totals of the debits and credits are posted to the General Journal at the end of the month.

---

Name of Book: Commodities Usage Journal  
Maintained by: Materials Control  
Purpose: To classify materials used by General Ledger account  
Organization: At least one page for each month  
Columns: Description: Date, Description, Document Number  
Debits: (32) Commodity inputs classified by General Ledger accounts and subaccounts  
Credits: (131) Commodity inventories classified by General Ledger accounts and subaccounts  
Posting: Once a month the columns are totaled and posted to the General Journal.

DESCRIPTION OF ACCOUNTING BOOKS

**Name of Book:** Capital Expenditures Journal

**Maintained by:** Asset Accounts

**Purpose:** To classify capital expenditures by General Ledger Account

**Organization:** At least one page for each month

**Columns:** Description: Date, Document Number, Project Number, Description  
Debits: (121) Fixed Assets Under Construction, (1221) Advance payments, (11) Fixed Assets classified by General Ledger Account  
Credits: (121) Fixed Assets Under Construction, (1221) Advance Payments, (1222) Documentary Credits, Suppliers, (26331) Customs Duties, and (415) Internal Production

**Posting:** Each day the individual transactions are posted to Fixed Assets, Fixed Assets Under Construction and Investment Expenditures subsidiary ledgers. Each month the columns are totaled and posted to the General Journal.

DESCRIPTION OF ACCOUNTING BOOKS

Name of Book: Asset Retirements Journal

Maintained by: Asset Accounts

Purpose: To classify asset retirements by General Ledger account

Organization: At least one page for each month

Columns: Description: Date, Retirement Authorization Number, Asset Number, Description of Asset, Responsibility Center, Locations Code  
Debits: (252) Provision for Depreciation, (364) Capital Losses, (1711) Misc. Debtors, (1315) Scrap Stores  
Credits: (11) Fixed Assets classified by General Ledger Accounts, (443) Capital Gains

Posting: Each transaction is posted to the Fixed Asset Subsidiary Ledger as it occurs.  
  
The columns should be totaled and posted to the General Journal monthly.

---

Name of Book: Customer Accounts - Water Sales Ledger

Maintained by: Customer Accounts

Purpose: To control individual customer accounts

Organization: A separate account for each customer

Title Information: Name, Subscription Number, Meter Serial Number, Address, Branch, Zone and Code Number

Columns: Date, Document Reference Number, Quantity of Water Billed, Amount Billed (itemized), Collection, Balance

Data Sources: Bills, Collections Summary Lists, Past Due Bill Collection List

DESCRIPTION OF ACCOUNTING BOOKS

**Name of Book:** Personnel Payroll Accounts Ledger

**Purpose:** To maintain a record of each employee's earnings, by wage item.  
To permit annual settlement of social security contributions and taxes for each employee

**Maintained by:** Payroll Accounting

**Organization:** A separate account is set up annually for each employee

**Title information:** Name and Code Number, Responsibility Center, Occupation

**Columns:** Date, Earnings by Wage Item, Total Earnings, Deductions (Taxes, Social Security Contributions, Loan Repayments, Other Deductions, Total), Net Pay, Loan Balance

**Data Source:** Time Sheets, Employee Master Record, Notices from Treasury

---

**Name of Book:** Value of Inventory Items Ledger

**Maintained by:** Material Control

**Purpose:** To determine the value of each inventory item at the utility level.  
To provide a check on the item value as determined by end-of-year physical inventory  
To serve as a Master Store Ledger Card for each Item

**Organization:** A separate account for each item in the stores. This ledger is maintained at Materials Management headquarters. It is a summary of the total quantity and value of individual items in all stores.

DESCRIPTION OF ACCOUNTING BOOKS

Title Information:	Item Name and Code, Maximum, Minimum, and Reorder Quantities
Columns:	Date, Document Reference, Received (Quantity and Value), Issued (Quantity and Value), Balance (Quantity, Price and Total Value)
Data Sources:	Commodities Purchases Journal and Materials Requisitions

---

Name of Book:	Fixed Assets Ledger
Maintained by:	Asset Accounts
Purpose:	To establish accountability for fixed assets  To provide information about original cost, depreciation charges and reserves, gain or loss on disposal or retirement  To determine investment in plant by type of equipment, location and process
Organization:	A separate Plant Ledger Card for each identifiable asset  A sheet for small equipment items, one line for each  Plant Ledger Cards and Sheets are grouped by Responsibility Center and then by each of the following categories for water utilities: <ul style="list-style-type: none"><li>- Plant Ledger/Sources of Supply</li><li>- Plant Ledger/Pumping</li><li>- Plant Ledger/Water Treatment</li><li>- Plant Ledger/Transmission and Distribution</li><li>- Plant Ledger/General</li></ul> A similar classification should be used by sewerage utilities.
Title Information:	Description of Asset, Asset Number, Acquisition Date, Date Put in Use, Original Cost

DESCRIPTION OF ACCOUNTING BOOKS

Columns: Date, Remarks, Additions, Retirements,  
Total Book Value, Depreciation, Net  
Book Value

Data Sources: Capital Expenditures Journal,  
Accounting Entry Statements from  
Treasury, Asset Retirements Journal.

Note: The General Ledger Fixed Asset accounts should contain  
the same columns.

---

Name of Book: Fixed Assets Under Construction Ledger

Maintained by: Asset Accounts

Purpose: To control capital expenditures by  
project

Organization: One account for each project

Title Information: Project Number, Description, Type  
(Replacement, Expansion, New), Budget  
Appropriation Number, Estimated Cost,  
Project Number, Date Started,  
Estimated Completion Date

Columns:

- (1) Internal Construction:  
Work Order Number, Date, Cost  
of Materials, Labor, Overhead,  
Total.
- (2) Purchases and Contractors Payments:  
Voucher Number, Date, Amount
- (3) Advance Payments:  
Contract Number, Voucher Number,  
Date, Amount
- (4) Documentary Credit:  
Number, Date, Bank, Amount, Date  
Goods Received

DESCRIPTION OF ACCOUNTING BOOKS

**Name of Book:** Water Sales and Collections by Service Center (Analysis Book)

**Maintained by:** Customer Accounts

**Purpose:** To provide accounting control of bills held by Service Centers  
To measure efficiency of Service Centers in collections

**Organization:** A separate account for each Service Center

**Title Information:** Service Center name

**Columns:** Summary Collection List Number; Bill Date; Collection Date; General Customers classified by amount billed, amount prepaid, branch collection, unpaid bills; Industrial, Government, and Other Customers and Total classified the same as General Customers.

**Date Sources:** Summary Collection Lists

**Note:** Each list is posted twice to the same line. The first posting is done before the list is sent to the Service Center and the second posting is done when it is returned. See the Billing and Collections Procedures in Appendix 7 for details.

---

**Name of Book:** Connection Sales by Service Center (Analysis book)

**Maintained by:** Customer Accounts

**Purpose:** To permit analysis of growth of service by customer area

**Organization:** A separate account for each Service Center

**Title Information:** Service Center Name and Code Number

DESCRIPTION OF ACCOUNTING BOOKS

Columns: Date, Customer's Name and Address, Contract Number, Invoice or Bill Number, Amount Billed Classified by Type of Customer (Public, Industrial, Governmental, Special), Size of Connection, Estimated Annual Quantity of Water

Data Sources: Bills or Invoices Issued, Volume Estimates by Connections Personnel

---

Name of Book: Past Due Bills (Analysis Book)

Maintained by: Customer Accounts

Purpose: To maintain control of past due bills held by Service Centers

Organization: A separate account for each Service Center

Title: Service Center name

Columns: Date Entered, Summary Collection List Number, Bill Number, Customer Name, Amount Due, Amount Paid, Date Paid

Data Source: Summary Collection List returned by Service Center, Past Due Bills Paid Weekly List

---

Name of Book: Wages by Responsibility Center (Analysis Book)

Maintained by: Payroll Accounting

Purpose: To enable reporting of personnel wages by Responsibility Center

Organization: One account for each Responsibility Center

Title: Name of Responsibility Center

DESCRIPTION OF ACCOUNTING BOOKS

Columns: Date, Work Period, Hours Worked, Permanent Wages, Comprehensive Wages, Overtime, Allowance and Incentives, Benefits, Other Expenses

Data Sources: Payroll List (after amendments by Treasury), Accounting Entry Statements correcting errors or adding miscellaneous payments

Note: The account should be summarized each month and used to prepare the Wages by Responsibility Center report.

---

Name of Book: Wages by Job Number (Analysis Book)

Maintained by: Payroll Accounting

Purpose: To determine direct labor cost for each job

To permit evaluation of efficiency of maintenance crews

To provide information for maintenance planning

Organization: A separate job card for each job

Title Information: Originating Department, Code, Description of Work, Date Started, Date Completed

Columns: Week Ending, Employee Number, Hourly Rate, Hours Worked, Labor Cost (Regular and overtime for each)

Data Sources: Work Orders, Employees' Time Reports

DESCRIPTION OF ACCOUNTING BOOKS

Name of Book: Inventories by Store  
(Analysis Book)

Maintained by: Materials Control

Purpose: To provide adequate but not excess inventories throughout the system.

To permit immediate response to requests for items not in a local store

To permit reconciliation with:

- Local Store Bin Cards, and
- Ledger Cards in the Value of Inventory Items Ledger

Organization: A separate account for each inventory item.

Title Information: Item Name and Code Number

Columns: Date, Document Reference Number, Total Quantity Received and Issued, a column for each local store, Ending Balance.

Data Sources: Receiving Reports, Materials Requisitions

Note: Receipts are indicated by a "+" and issues by a "-" in the individual store columns.

---

Name of Book: Commodities Usage by Responsibility Center (Analysis Book)

Maintained by: Materials Control

Purpose: To permit reporting of commodities usage by Responsibility Center

Organization: A separate account for each Responsibility Center

Title Information: Responsibility Center Name and Code Number

DESCRIPTION OF ACCOUNTING BOOKS

Columns: Date, Document Reference Number, Materials, Fuel, Spare Parts, Office Equipment, Total (Each subdivided to show details of major items)

Data Sources: Materials Requisitions

Notes: (1) The columns should be totaled at the end of month and used to prepare the Commodities Usage by Responsibility Center Report.  
(2) Does not include water, electricity or gas, all of which are considered as commodities by the SAS.

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Name of Book: Commodities Usage by Job Number (Analysis Book)

Maintained by: Materials Control

Purpose: To determine direct material cost for each job  
To permit evaluation of efficiency in using materials  
To provide information for materials planning

Organization: A separate account for each job.

Title Information: Job Number, Originating Department Name and Code, Description of Work, Date Started, Date Completed

Columns: Date, Material Requisition Number, Description of Materials and Code Number, Quantity, Units, Cost per Unit, Total Cost

Data Sources: Materials Requisitions

DESCRIPTION OF ACCOUNTING BOOKS

Name of Book:	Purchase Order Expenses
Maintained by:	Purchasing Department
Purpose:	To permit allocation of purchasing costs to the individual commodity inventory cost.
Organization:	One account for each purchase order
Title:	Purchase Order Number
Columns:	Date, Document Reference Number, Insurance, Freight (Foreign and Domestic), Loading and Unloading, Testing by Specialized Bureaus, Travelling Expenses, Bank Charges, Customs, Duty, Total
Data Sources:	Invoices and bills received by Purchasing Department and authorized for payment.

ACCOUNTING PROCEDURES

INTRODUCTION

Six basic accounting procedures are presented in this Appendix:

<u>Procedures</u>	<u>Page</u>
Payroll	2
Purchase of Commodities	5
Use of Commodities	9
Purchase of Services	11
Purchase of Contracted Fixed Assets	14
Billing and Collections	18

This Appendix provides a basic outline of some of the procedures required in an improved accounting system. The procedures are not comprehensive and many details remain to be worked out during implementation. The purpose of the outline is to illustrate the concept of using analysis books and subsidiary journals and ledgers. Each utility must adapt these procedures to meet its own circumstances.

Two questions were asked of every step in each procedure;

- Is the information recorded in this step worth the cost of recording it?
- Is this step essential to ensure control of the utility's assets?

If neither question could be answered positively, the step was eliminated.

The data processing capabilities of the utilities vary from purely manual methods at GOSSD to a modern computer at SCA. In view of the recommendations in the Data Processing Report and the time required to implement them, the following assumptions were made:

## ACCOUNTING PROCEDURES

- Customer billing and accounts, payroll and central inventory accounts will be processed by a computer.
- All other accounting procedures will be performed manually.

These procedures do not define precisely the steps or formats to be used in the computer systems - that is left for later systems design. Rather the procedures focus on what information must be recorded and reported.

## PAYROLL PROCEDURES

### Departments Involved

Timekeepers, Personnel, Payroll Unit, Data Processing, Treasury, Central Accounts, Budget and Cost

### Time Reporting

1. Employee fills out a Time Report (Exhibit 3.1) daily and turns it in to the Timekeeper weekly. Illiterate employees may require the assistance of their foreman or the Time Clerk.
2. Responsibility Center Time clerk (member of personnel department) reviews the time reports for appropriate job accounts, overtime authorization, accuracy and completeness. He then submits them to the Payroll Unit.

### Payroll Preparation

1. The Personnel Department provides the Payroll Unit with the following information as soon as it becomes available:
  - Notice of employment and rate card for new employees.
  - Notice of status changes indicating transfers, leaves of absence, promotions, raises, allowances, penalties, retirements and dismissals.

ACCOUNTING PROCEDURES

- Notice of authorized deductions approved by the employee for loan repayment, insurance premiums and other voluntary deductions
- 2. The Payroll unit prepares an update to the payroll master (which contains employee name, number, salary rate, loans and other data needed to calculate his net pay).
- 3. The payroll master is updated by data processing within two days before the payroll is prepared.
- 4. The Payroll Unit consolidates all Time Reports and prepares them for data entry. At a minimum, Time Reports should be batched by Responsibility Center, by location and the total number of Reports in each batch noted as a control total.
- 5. Time Reports are prepared for computer processing and run on the computer by Data Processing. Output of the run consists of:
  - A Payroll List (4 copies) which provides detailed payroll information for each individual. The first copy is perforated so that the cashier can tear off a slip for each employee. This slip contains the name of the employee, analysis of earnings, detail of deductions, and net pay. The last line of the Payroll List is the sum of all preceding entries.
  - Updated Personnel Payroll Accounts.
  - Payroll Analysis Report (1 copy) which summarizes number of personnel, hours worked, salaries, overtime and other payments and deductions by Responsibility Center. The last Responsibility Center is a summary for the entire utility.
  - Job Analysis Report (2 copies) which lists the personnel (by employee number), time charged and cost by job number.

All of these reports are returned to the Payroll Unit.

- 6. The Payroll Unit:
  - Checks the original control totals against the output from Data Processing. No further checks will be routinely performed by other departments.
  - Prepares a voucher(s) for the amount of cash and checks required.

ACCOUNTING PROCEDURES

- Sends two copies of the Payroll list and the voucher(s) to Treasury.
- Retains the reports for later revision and distribution.

Payment of Payroll

1. Treasury checks that the total cash payment listed on the payroll voucher matches the total of the Payroll List. A check is then written to obtain the necessary cash. Entries are made in the Cash Payments and Bank Payments Journals debiting Net Payroll and crediting Cash.
2. Cashiers stuff the pay envelopes with cash and hand them over to the employees accompanied by the perforated slips. The employee must sign Copy 2 of the Payroll List to indicate he received the money.
3. After a designated time (at least ten working days) the cashier prepares a list of unclaimed wages and reconciles it with the payments noted on the Payroll List. He returns the Payroll List, List of Unclaimed Wages, and the wage envelopes to the Treasury Department.
4. Treasury checks the two lists against the cash received. The cash is deposited and the Payroll List returned to the Payroll unit. An entry is made in the Cash Receipts Journal debiting cash and crediting Unclaimed Wages (a subaccount of Account 273, Other Credit Balances).
5. The Payroll unit checks Copy 2 of the Payroll List against Copy 3, reconciles any differences, discards Copy 3 and files Copy 2. This file becomes the Payroll Journal. Once a month an Accounting Entry Statement is prepared that summarizes the Journal and is sent to Central Accounts for posting to the General Journal. Typical debits would be Salaries, Overtime, Incentive and Benefits expenses. Typical credits would be Net Payroll, Taxes, Insurance and Employee Loans. The Unclaimed Wages List is filed for later reference.
6. Employees may claim unclaimed wages by filling out a Wage Claim Form, obtaining the approval of their supervisor and submitting the form to the Payroll unit. The Payroll unit should review the claim and, if approved:
  - Prepare a voucher for the appropriate amount.
  - Attach the Wage Claim Form to the Unclaimed Wages List.
  - Give the voucher to the employee so that he may claim the money from the cashier.

ACCOUNTING PROCEDURES

7. The Cashier/Treasury should pay the employee and then debit Unclaimed Wages and credit Cash in the Cash Payments Journal.
8. After the Unclaimed Wages List is returned to the Payroll unit, the unit annotates the Payroll Analysis Report to correct any errors (Unpaid wages are not noted) found during payment. The Job Analysis Report is similarly annotated. Finally, both of the annotated reports are sent to Budget and Cost.

PURCHASE OF COMMODITIES

Departments Involved

Stores, Purchasing, Receiving and Inspection, Materials Control, Accounts Payable, Central Accounts, Treasury

Determination of Need

1. Storekeeper determines potential need when:
  - A requisition for an item not previously carried by the store is submitted.
  - A requisition is submitted that reduces the quantity on hand below the reorder point.
2. In either case, the storekeeper submits a Purchase Requisition to Materials Control. If the item is new, the request should be accompanied by a technical specification and an estimate of volume of use prepared by the user department.
3. Materials Control should then:
  - Determine if an excess quantity of the item is available at another store (using the Inventory Quantity by Stores File). If so, a transfer notice is prepared and sent to the storekeeper of both the requesting and supplying store.
  - Consolidate actual and potential near-term orders for the item from all stores if an excess quantity is not available and prepare an appropriate Purchase Requisition.

ACCOUNTING PROCEDURES

Purchasing and Receiving

1. The Purchasing Department should follow existing rules in making the purchase. The following additions or modifications should be made to the rules:

- Budget commitments should be made by Materials Control.
- Approval by the Vice-Chairman or Chairman should be required for all purchases exceeding a predetermined amount.
- A Commodities Purchase Order should be issued for each purchase. These orders should be prenumbered and issued sequentially.
- Copies of the Commodities Purchase Order will have the following distribution:

Copy 1	Supplier
Copy 2	Supplier (Acknowledgement copy)
Copy 3	Receiving and Inspection
Copy 4	Materials Control
Copy 5	Purchasing Files

2. When the order arrives, the Receiving and Inspection unit should:

- Compare items received with the Commodities Purchase Order and Shippers Packing Statement.
- Prepare a Return Shipping Order for excess, damaged or unsatisfactory items unless decided otherwise by the Purchasing Department.
- Prepare a Receiving Report indicating types and quantities of commodities that conform to the Commodities Purchase Order. The Report should have the following distribution:

<u>Copy</u>	<u>Distributed To:</u>
1	Purchasing
2	Storekeeper of final destination

- Arrange for the goods to be forwarded to the store of final destination.

ACCOUNTING PROCEDURES

3. The storekeeper at the final destination shall recheck the quantity received, sign the Receiving Report and pass it on to the Bin Clerk.

Accounting Process

1. In the case of foreign purchases, the Purchasing Department shall simultaneously prepare a voucher for a documentary credit and the Purchase Order. The voucher is sent to Treasury.
2. Treasury opens the documentary credit and makes an entry in the Bank Payments Journal debiting Documentary Credits and crediting Cash in Bank. (This is actually a two-stage process that involves a debit and an offsetting credit to Accounts Payable.)
4. After the commodities arrive, the bin clerk in the receiving store shall record the amount received on the proper bin card and forward the Receiving Report to Materials Control.
5. The Stores Ledger Clerk shall immediately enter the quantity received in the Inventory by Stores book. (This may require processing by the computer.) The Receiving Report shall then be held in a suspense file until Purchasing informs Materials Control of the total and itemized costs of the purchase.
6. When the Invoice arrives, the Purchasing Agent shall:
  - Compare the Invoice with the Receiving Report.
  - Make any amendments required.
  - Write the Purchase Order number and his signature on the Invoice.
  - Hold the invoice until all related expenses are known. This period shall not exceed 14 days.
7. When all expenses related to a Purchase Order are known, Purchasing shall:
  - Prepare a voucher to cover any outstanding expenses (e.g., invoices of domestic suppliers, shipping charges, additional amounts due to foreign suppliers. Generally the full amount of a foreign purchase will already have been paid through documentary credits by the time a product arrives).

ACCOUNTING PROCEDURES

- Prepare an Accounting Entry Statement debiting Materials Received with the full value and crediting Accounts Payable, Documentary Credits or other appropriate expense accounts.
  - Send the Voucher and Accounting Entry Statement to Accounts Payable.
  - Send the Receiving Report, Invoice and Accounting Entry Statement to Materials Control.
8. Accounts Payable should update the Accounts Payable Ledger, and then sign and forward the Accounting Entry Statement to Materials Control (thus ensuring that the Accounts Payable Ledger is reconciled with the Commodities Purchase Journals).
  9. At a suitable time, Accounts Payable shall forward the voucher and an Accounting Entry Statement debiting Accounts Payable and crediting cash to Treasury for payment. Treasury will pay the amount indicated, file the voucher and make the appropriate entries in the Bank Payments Journal.
  10. After receiving the Accounting Entry Statement from Purchasing, Materials Control shall enter the number of items and the total cost in the Value of Inventory Items Ledger. A new average price for the item should be calculated and entered at the same time.
  11. Materials Control shall file in one place and in Commodity Purchase Order sequence a copy of the Purchase Order, Invoice, Store Receiving Report, Return Shipping Order (if any) and the Accounting Entry Statement.
  12. Materials Control shall periodically review Commodity Purchase Orders that have not been filed to ensure that the above process is completed for all goods received.
  13. At the end of each day, Materials Control should enter the data from Accounting Entry Statements received from Purchasing that day in either the Domestic or Foreign Purchases Journal.
  14. At the end of the month, Materials Control should total the Domestic and Foreign Purchases Journals and prepare an Accounting Entry Statement debiting the appropriate type of store accounts (e.g., materials, fuel or stationery supplies) and crediting (261) Accounts Payable classified by sector. This statement shall be forwarded to Central Accounts for posting to the General Journal and General Ledger.

ACCOUNTING PROCEDURES

USE OF COMMODITIES

Departments Involved

User departments, Stores, Materials Control, Central  
Accounts, Budget and Cost

Issue of Materials

1. User department prepares a Materials Requisition (Exhibit 3.2). This statement must be signed by an authorized member of the department.
2. User department submits the Materials Requisition to the Storekeeper who:
  - Issues the item requested.
  - Indicates how much was issued on the Materials Requisition.
  - Prepares a Purchase Requisition for any deficiencies.
  - Distributes copies of the Materials Requisition as indicated:

<u>Copy</u>	<u>Distributed To:</u>
1	Store Bin Clerk
2	Store Bin Clerk
3	User

If the user cannot obtain all of the items required, the user must prepare another requisition to cover the items not received. The local store may hold this new requisition until additional items are received.

ACCOUNTING PROCEDURES

Accounting for Issue

1. Store Bin Clerk updates the Bin Card, sends copy 1 of the Materials Requisition to Materials Control and files copy 2.
2. Materials Control updates ledgers (computer files) in the following order:
  - Inventories by Stores
  - Value of Inventory Items
  - Commodities Usage by Responsibility Center
  - Commodities Usage by Job

These entries may be made simultaneously by the computers.

3. At the end of each day, the materials posted during the day should be summarized in the Commodities Usage Journal. (This journal could be maintained as a computer file.)
4. At the end of the month, the columns in the Commodities Usage Journal should be totaled and an Accounting Entry Statement prepared. The Statement should list the General Ledger material expenses accounts as debits and the General Ledger inventory accounts as credits. The statement should be sent to Central Accounts for posting.
5. The following two reports should also be prepared at the end of the month and sent to Budget and Cost:
  - Commodity Usage by Responsibility Center
  - Commodity Usage by Job Number
6. At least once each year the physical quantity on hand in each of the stores should be compared against:
  - Store Bin Card.
  - Inventory Quantity by Stores.
  - Value of Inventory Items.

ACCOUNTING PROCEDURES

PURCHASE OF SERVICES

Departments Involved

Originating departments, Purchasing, Accounts Payable,  
Central Accounts, Budget and Cost, Treasury

Acquisition of Service

1. The Originating Department:
  - Issues Request for Service giving detailed description of service required, completion date and estimated cost.
  - Forwards original to Purchasing Department and files duplicate.
2. The Purchasing Department then:
  - Reviews request for conformity with operating policies.
  - Secures cost information through reviewing recorded data of similar services, limited or competitive bidding and negotiations with service agencies.
  - Selects service bureau, agency or contractor, depending on the nature of service in question. Reasons for selection must be indicated.
3. The originating department approves prices and total cost within the limits of departmental authorization and budget or secures approval of the proper authority for prices beyond such limits.

ACCOUNTING PROCEDURES

4. The Purchasing Department:

- Issues copies of the Service Order to:

<u>Copy</u>	<u>Distributed To</u>
1	Service Agency
2	Service Agency (Acknowledgement copy)
3	Originating Department
4	Accounts Payable

- Issues a letter of engagement indicating the terms agreed upon when professional services are required.
- Receives acknowledgement copy and advises originating department.
- Follows-up service procurement.

Accounting and Payment for the Service

1. The Purchasing Department:

- Receives bills submitted by service agency.
- Requests originating department to certify the service by signing the invoice.
- Makes a copy of the signed invoice for its own files.
- Forwards the invoice to Accounts Payable.
- Advises Accounts Payable about any adjustments subsequent to the invoice.

2. Accounts Payable then:

- Identifies the service order and attaches the invoice.
- Prepares a voucher and an Accounting Entry Statement debiting Service Expense and crediting Accounts Payable and forwards them to Treasury.

ACCOUNTING PROCEDURES

3. Treasury:
  - Pays the vendor according to the voucher.
  - Enters the transaction in the Cash or Bank Payments Journal.
  - Enters the transaction in the Services Ledger.
  - Files the voucher.
  - Prepares an Accounting Entry Statement debiting Accounts Payable and crediting Cash and sends it to Accounts Payable.
  - Prepares a monthly report summarizing services by Responsibility Center by type of service and forwards the report to the Budget and Cost Department.
4. On the basis of the Accounting Entry Statement prepared by Treasury, Accounts Payable debits the appropriate suppliers account.
5. Budget and Cost incorporates the monthly service report into the monthly Budget vs. Actual Report.

ACCOUNTING PROCEDURES

PURCHASE OF CONTRACTED FIXED ASSETS

Departments Involved

Projects Department, Purchasing Department, Committee on Project Implementation, Legal Department, Board of Directors and Chairman, Asset Accounts, Accounts Payable, Treasury, Central Accounts

Selection of Vendor

1. The Projects Department:

- Reviews the long-range plan and the capital budget and selects projects authorized for implementation during the current fiscal year.
- Prepares a detailed tender document specifying the work to be done.

2. The Purchasing Department then:

- Issues a tender for the supply or construction of the assets in question.
- Submits the bids received to the Committee on Project Implementation to select the most suitable offer, in accordance with competitive bidding regulations.
- Forwards selected offer together with the tender document to Legal Department.

3. The Legal Department prepares a contract indicating specifications, total cost, advance and interim payments, time schedule and date of completion.

4. The Projects Department:

- Secures approval of the contract from the Board of Directors and the Chairman or other designated authority.
- Distributes copies of the signed contract to Asset Accounting and the Legal Department.
- Assigns responsibility for supervision of the project.

## ACCOUNTING PROCEDURES

### Prepayments and Advances

1. Contractors in Egypt often require advances before beginning work. When notified by Purchasing or the Technical Department that this is the case, Asset Accounts should:
  - Review the contract with the supplier.
  - Prepare a voucher and an Accounting Entry Statement crediting Accounts Payable.
  - Make an entry in the Capital Expenditures Journal debiting Investment Expenditures and crediting (2721) Accounts Payable.
  - Forward the voucher and Accounting Entry Statement to Accounts Payable.

Accounts Payable should enter the transaction in the Accounts Payable Ledger, initial the Accounting Entry Statements and return it to Asset Accounts. The voucher should be forwarded to Treasury for payment.

2. When establishing a Documentary Credit for foreign suppliers, Asset Accounts should:
  - Review the request against the contract.
  - Prepare a voucher and an Accounting Entry Statement debiting Documentary Credits (Account Number 1222) and crediting (2721) Foreign Suppliers (a subaccount of Accounts Payable).
  - Send the Accounting Entry Statement to Accounts Payable.

Accounts Payable makes the appropriate entry in the ledger and forwards the Accounting Entry Statement to Treasury.

Treasury should enter the transaction in the Bank Payments Journal as a debit to Documentary Credits and a credit to account 2721, Foreign Suppliers. Treasury should then request the bank to establish the documentary credit.

After the bank notifies Treasury that the Documentary Credit has been opened, Treasury should make an entry in the Bank Payments Journal debiting account 2721 and crediting (1822) Cash in Bank. An Accounting Entry Statement should then be sent to Accounts Payable to clear the ledger.

### Interim Payments and Reporting

1. The Project Engineer should prepare a monthly report for management review, showing the status of each project in process. (See Exhibit 2.4, Project Task Analysis.)

ACCOUNTING PROCEDURES

2. When contractors submit bills, the Engineer should review the claim, settle differences with the contractor, prepare an Engineers Approval Report noting any exceptions to the bill, and submit both the bill and the approval report to Asset Accounts.
3. Assets Accounts:
  - For each project, establishes an account in the Fixed Assets Under Construction Ledger to receive entries of actual expenditures on the project.
  - Reviews each request for payment against the contract.
  - For approved requests, prepares a voucher and an Accounting Entry Statement crediting (2721) Accounts Payable.
  - Posts the entry to the Capital Expenditures Journal and from there to the Fixed Assets Under Construction Ledger.
  - Forwards Accounting Entry Statement to Accounts Payable and informs the Projects Department.
  - Files the Engineers Approval Report, invoice and a copy of the Accounting Entry Statement.
  - Occasionally reviews the Investment Expenditures column in Fixed Assets Under Construction Ledger. If work has been completed, Asset Accounts should make an entry in the Capital Expenditures Journal debiting Fixed Assets Under Construction and crediting Investment Expenditures.
4. Accounts Payable:
  - Reviews the Accounting Entry Statement.
  - Updates the Accounts Payable ledger.
  - Initials the Accounting Entry Statement and returns it to Asset Accounts.
  - When appropriate, Accounts Payable prepares a voucher and another Accounting Entry Statement debiting Accounts Payable and crediting (1822) Cash in Bank and sends both on to Treasury for payment.
5. Each month, Asset Accounts prepares and distributes a monthly summary of all projects. (See Exhibit 2.3, Top Management Project Summary.)

ACCOUNTING PROCEDURES

Completion of a Project

1. The Projects Department:

- Arranges for an overall technical audit.
- If the audit is satisfactory, issues a Certificate of Acceptance and authorizes payment of the balance due to the contractor.

2. The Asset Accounts Department:

- Receives authorization for final payment and makes an entry in the Capital Expenditures Journal debiting the amount owed to the contractor to Fixed Assets Under Construction and crediting (2771) Accounts Payable.
- Prepares an Accounting Entry Statement crediting Accounts Payable and forwards it to Accounts Payable per the usual vendor payment process.
- Makes an entry in the Capital Expenditures Journal debiting Fixed Assets and crediting Fixed Assets Under Construction for the entire balance of the account.
- Updates and closes out the Project in Progress Card.
- Prepares a subsidiary ledger card for each asset forming a part of the completed project.

Monthly Posting

At the end of each month, Asset Accounts should total the columns in the Capital Expenditures Journal, prepare an Accounting Entry Statement recording the totals and send it to Central Accounts for posting to the General Journal.

ACCOUNTING PROCEDURES

BILLING AND COLLECTIONS

Definition

This Procedure is concerned only with billing and collecting water bills and associated costs (e.g., meter rents).

Departments Involved

Customer Accounts, Data Processing, Customer Service Centers, Treasury, Central Accounts, Budget and Cost.

Billing Process

1. Customer Accounts receives a record of meter reading from the Customer Service Center.
2. Customer Accounts enters meter reading information on machine readable media.
3. Data Processing calculates the bill and updates the customer account. For each pre-determined block of bills (the number a collector might be expected to collect in one or two days) a Summary Collection List (See Exhibit A7.1.) is prepared.
4. When an account with a negative balance is encountered, a summary of bills and collections on the account since it first became overdue is prepared. (See Exhibit A7.2.)
5. At the end of the run, Data Processing prepares accounting and control information and then returns all documents and information to Customer Accounts for checking.

ACCOUNTING PROCEDURES

6. Customer Accounts checks the documents and distributes them as follows:

<u>Distributed to</u>	<u>Documents</u>
Customer Service Center	- Bills - Summary Collection List (two copies) - Past Due Bill Summaries (only copy) - Exception reports that deal with meter reading problems
Customer Accounts files	- Third copy of the Summary Collections List

Customer Accounts maintains a log showing the date and serial number of the Summary Collection Lists sent to branches.

Collection of Current Bills

1. When bills arrive at the Customer Service Centers from Customer Accounts, they are immediately entered in the Branch Collection log. The messenger delivering the bills must initial the log.
2. Chief Collector assigns a block of current bills (one Collection list) to each Collector. The Chief Collector retains the original copy of the Summary Collection List. The first copy of the Summary Collection List and the bills are given to the Collector.
3. The Collector delivers the bill to the customer. If the customer is home he collects the cash. If the customer is not home, he leaves the stub. (He may visit the customer's premises more than once before leaving the stub.)
4. The Collector prepares a Collector's Reconciliation Statement (Exhibit A7.3)
5. The Collector takes the cash collected to the Cashier. The Cashier provides a receipt (to be kept by the collector) and signs the Reconciliation Statement.

ACCOUNTING PROCEDURES

6. The Collector returns the uncollected bills, the Collection List and the Reconciliation Statement to the Chief Collector who verifies the bills remaining and the cash collected and then signs the Reconciliation Statement.
7. The Chief Collector posts the bills collected to the original Summary Collection List.
8. The Chief Collector prepares a Cashier's Collection List (Exhibit A7.4) listing unpaid bills and gives the unpaid bills and the original of the list to the Cashier.
9. When customers come in to pay, the cashier gives them the bill and posts the payment to the Cashier's Collection List.
10. At the end of the grace period for a list of bills, the Cashier returns the Cashier's Collection List together with any uncollected bills to the Chief Collector.
11. The Chief Collector posts the bills paid to the Summary Collection List and totals the columns on the List.
12. The Chief Collector should then prepare shut-off orders for subscribers who have not paid their bills.
13. The Chief Collector enters the bills for which an accounting has been made in the Branch Collection Log and returns the Summary Collection List to the Customer Accounts Department. He files the uncollected bills by customer account number.
14. Customer Accounts enters the Summary Collection Sheet serial numbers in the log. The Summary Collection List is then checked for completeness and accuracy and prepared for processing.
15. Data Processing processes the Summary Collection List to update the individual customer accounts.

## ACCOUNTING PROCEDURES

### Past Due Accounts

1. At the time bills are prepared, a summary statement is also made for each past due account. This statement summarizes activity in the account since the date it became overdue. These statements should be sent to the responsible Service Center Manager.
2. The Service Center Manager should assign his best collectors the responsibility of following up the past due accounts. Greatest attention should be given to the largest debtors but all should be personally contacted at least once in each billing period.
3. When money is collected the Collector should give the money to the Cashier (and obtain a receipt) and deliver the stub of the bill to the Chief Collector.
4. The Chief Collector should prepare a weekly list of overdue bills collected and send it to Customer Accounts.

### Accounting - Current Bills

1. Each day, Customer Accounts should:
  - Prepare the table shown in Exhibit A7.5 for each Summary Collection List. (This could be done by the computer if it is large enough.)
  - Post the required data (water quantity and value, meter rent and maintenance, stamp duty and pre-payment separately by customer class) from each Analysis of Summary Collections List to the Water Sales Journal
  - Post the required data (Column (a) of Exhibit A7.5) to the Water Sales and Collections by Service Center Book.
2. As bills are paid in the Service Centers, the Cashier should prepare a Daily Cash Receipts Statement (Exhibit A7.6) each day and send it to Treasury. There the data are posted to the Cash Receipts Journal. Water bills collected will be debited to Cash and credited to Customer Accounts (classified by Customer Class).
3. When the Summary Collection List is returned to Customer Accounts from the Service Center it is analyzed using the form shown in Exhibit A7.7. This data is then posted to the Water Sales and Collections by Service Center Book.

ACCOUNTING PROCEDURES

4. The unpaid bills as identified on the Summary Collection List are then posted individually to the Past Due Bills book.

Accounting - Past Due Bills

1. When past due bills are collected the money is given to the Service Center Cashier who accounts for it in the same way as for current bills.
2. At the end of each week, the Chief Collector prepares a list of all past due bills collected that week and sends the list to Customer Accounts.
3. Customer Accounts posts them to the individual customer accounts.
4. Customer Accounts enters the amount collected for each bill in the Past Due Bills Book.

End of the Month Accounting

At the end of the month, Customer Accounts should:

- Total the columns in the Water Sales Journal.
- Prepare an Accounting Entry Statement for each customer type that:
  - . Debits Customer Accounts for the total amount billed.
  - . Credits the revenue accounts for water value, meter rent and maintenance and stamp duty.
  - . Credits Customer Accounts for the amount deducted from deposits.
- Send the Accounting Entry Statement to Central Accounts for posting in the General Journal.
- Prepare a reconciliation of the Department's accounts with those of the Central Accounts. (Each Service Center Manager must submit an accounting of bills collected but not yet submitted to Customer Accounts at the end of the month in order to develop this reconciliation.)
- Prepare a report of water sales and collections by Service Center by type of customer and send it to Budget and Cost for inclusion in the Budget vs. Actual reports.



PAST DUE ACCOUNT SUMMARY

Retained by Customer

Customer Name _____		Date _____		
Address _____				
Account Number _____		Meter Number _____		
Class Code _____		Branch _____	Zone _____	
Date	Billing Data		Receipts	Balance Due
	Bill Number	Amount		

-----perforated line-----

Retained by Authority

Customer Name _____	
Account Number _____	Meter Number _____
Total Due	_____
Amount Paid	_____
Date Paid	_____
Customer Initial	_____
Collected by _____	
Cash Received by _____	

COLLECTOR'S RECONCILIATION STATEMENT

To be completed by Collector

Collection List Number \_\_\_\_\_ Number of Pages \_\_\_\_\_

Current Bills

Past Due Bills

	<u>Number of Bills</u>	<u>Value</u>
Collected		
General	_____	_____
Industrial	_____	_____
Government	_____	_____
Other	_____	_____
Total	_____	_____
Uncollected Bills	_____	_____
Total	_____	_____
List Value	_____	_____

Signature \_\_\_\_\_ Date \_\_\_\_\_

To be completed by Cashier

Cash Received \_\_\_\_\_

Receipt No. \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

To be completed by Chief Collector

Date Received: \_\_\_\_\_ Date Posted \_\_\_\_\_

Missing Bills: \_\_\_\_\_

(Attach explanation)

Uncollected bills recorded on Cashier's  
Collection List Number \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



ANALYSIS OF SUMMARY COLLECTION LIST

Summary Collection List Number \_\_\_\_\_

Date \_\_\_\_\_

Type of Customer	Quantity of Water	Water Value	Meter Rent	Stamp Duty	Total Bill (a)	Net Due (b)	Pre-payment (a-b)
General							
Industrial							
Government							
Others							
TOTAL							

DAILY CASH RECEIPTS

Cashier \_\_\_\_\_ Date \_\_\_\_\_

Location \_\_\_\_\_

Beginning Cash Balance \_\_\_\_\_

Water Bill Receipts:

	<u>Current</u>	<u>Past Due</u>	
General	_____	_____	
Industrial	_____	_____	
Government	_____	_____	
Other	_____	_____	
Total	_____	_____	_____

Customers' Deposits Against:

Future Water Bills	_____	
Connections	_____	
Meter Maintenance	_____	
Other Service	_____	
Total	_____	_____

Other Cash Receipts:

_____	_____	
_____	_____	
_____	_____	
Total	_____	_____

Total Cash Receipts \_\_\_\_\_

Total Disbursements \_\_\_\_\_

Ending Balance \_\_\_\_\_

ANALYSIS OF RETURNED  
SUMMARY COLLECTION SHEET

Service Center \_\_\_\_\_

Type of Customer	Net Due	Collected	Not Collected
General			
Industrial			
Government			
Others			
_____			
_____			
_____			

REPORT DESCRIPTIONS

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REPORT DESCRIPTIONS

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## REPORT DESCRIPTIONS

### CONTENTS

The management reports that should be routinely prepared by the utilities are described in this Appendix. These reports are designed to help managers to make decisions. Reports or forms that merely transfer data from one group to another are not described here (e.g., various accounting reports).

Each report is preceded by a page describing the purpose, scope, preparing responsibility, distribution, frequency, retention and source of data for each report. Whenever possible a draft copy of the report is presented.

### FORMATS

In most cases, the formats presented here are drawn full scale. With translation they can be used directly. When making translations, an effort should be made to use a standard size of paper (A4 is suggested).

No space is provided for signatures. The responsibility for preparing each report should be clearly assigned. No other person should have to review the report before it is distributed.

### DISTRIBUTION

Careful thought has been given to who should receive each report. Requests for additional routine copies should be carefully considered before being granted.

REPORT DESCRIPTIONS

FREQUENCY

Reports must be timely to be useful. Important or exceptional decisions or events usually do not wait for a daily report. A subordinate manager who requires supervision on a daily basis should be terminated or transferred to a post more suitable to his talents. Therefore few daily or weekly reports are recommended.

Very few quarterly or annual reports are recommended because they:

- Are often too late. Most managers are content to produce a report any time within the following time period regardless of formal deadlines.
- Are too infrequent to allow managers to take corrective action.
- Make it difficult to relate irregularities to specific situations.

The utilities are presently spending too much time on bulky annual reports that are not used by them or by other organizations.

A deadline for distributing each report is recommended. The utility will be better served if reports are distributed well ahead of these deadlines.

## REPORT DESCRIPTIONS

### RETENTION

Reports should be stored for the recommended time period by the person who prepares them. The few exceptions are explicitly stated. A data bank or a central MIS group responsible for storing and retrieving data is not recommended for the following reasons:

- To be effective, reports must be the responsibility of the preparing manager. The existence of an MIS group tends to cause managers to transfer that responsibility to the MIS group.
- Properly defined reports are designed for the end user. No third party is required to review them. If another party requires information on a subject, he is more likely to go to the original source of data rather than to a data bank.
- Data banks and MIS functions have been very rarely successful in the U.S. except in very large, sophisticated organizations.

### IMPLEMENTATION

The Management Services Department in each utility should be responsible for overseeing the implementation of these reports. Nevertheless, the managers responsible for preparing and using them must make the final decisions on format and timing. During the first six months a copy of each report should routinely be sent to Management Services. Missed deadlines should be investigated. During the review recommended at the end of six months, the Management Services Department should decide whether it wishes to continue to receive the report.

DAILY OPERATIONS REPORT  
(Water Utilities)

PURPOSE: To ensure that top management is aware of any important incidents affecting customers of the utility.

SCOPE: One report for the entire utility

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Chairman  
All Vice-Chairmen  
General Supervisor, Public Relations

FREQUENCY: Daily by 11 A.M.

RETENTION: Destroy after two months.

DATA SOURCES: Daily Plant Reports



DAILY OPERATIONS REPORT

Date: \_\_\_\_\_

CLASS I LEAKS(1)		
Leak Location	Date First Reported	Estimated Repair Date

Note: (1) Class I leaks are those that cause major inconvenience to the public.

MONTHLY PRODUCTION REPORT  
(Water Utilities)

PURPOSE: To provide information for planning  
To alert management to long-term adverse trends in customer service  
To encourage production of high quality water

SCOPE: One report for the entire utility  
One report for each plant

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Total Utility Report: Management Committee;  
General Manager, Production; Plant managers  
Plant Reports: General Manager, Production;  
Plant Manager

FREQUENCY: Monthly. Deliver by 15th of following month.

RETENTION: Retain till end of year.  
Save December report for ten years.

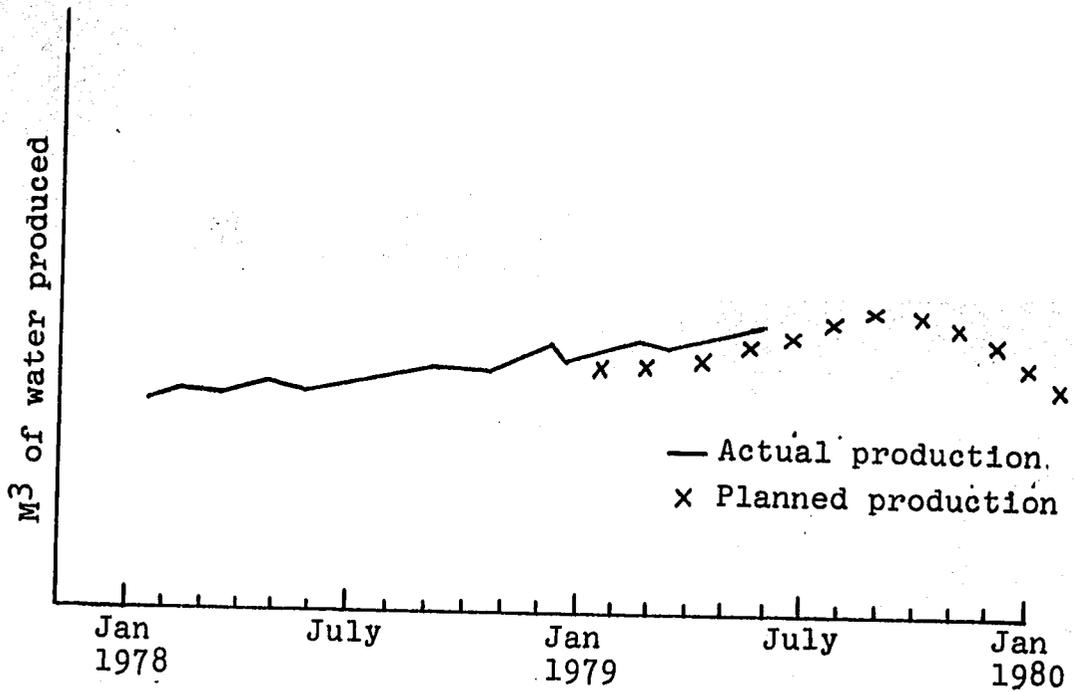
DATA SOURCES: Headquarters Daily Plant Report

REMARKS: Plant reports should include a chart of  
actual vs. design production only for that plant.

MONTHLY PRODUCTION REPORT  
(Water Utilities)

Month of \_\_\_\_\_  
Responsible Manager \_\_\_\_\_ Report Date \_\_\_\_\_  
Plant Name \_\_\_\_\_ Code \_\_\_\_\_

QUANTITY OF POTABLE WATER PRODUCED



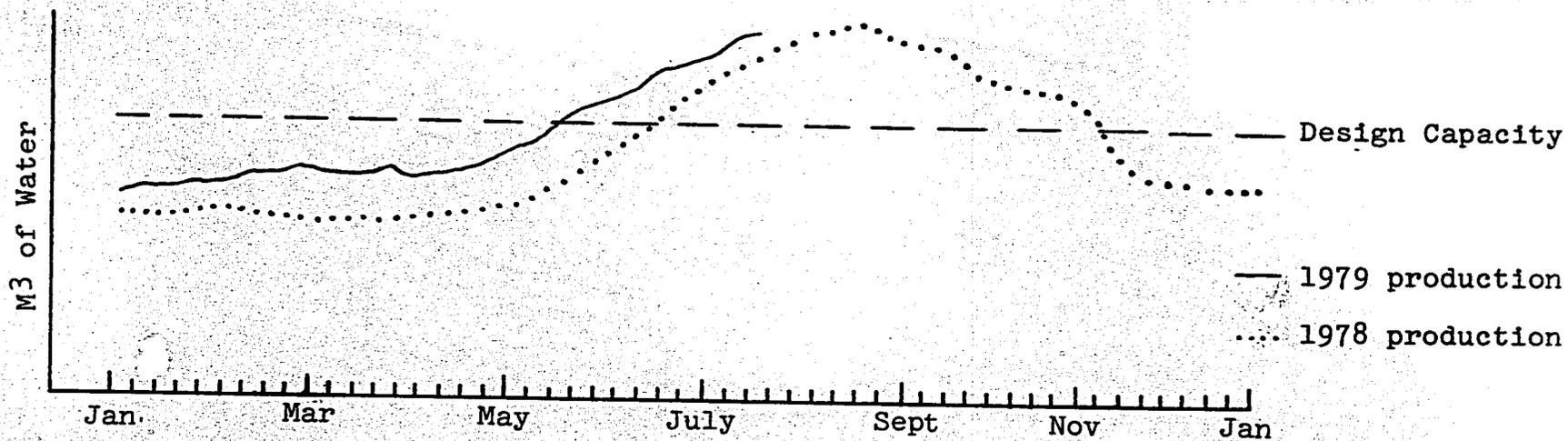
Period	Quantity of Water Pumped			
	By End Use		By Source	
	Potable	Irrigation	Nile	Wells
This month				
- Planned				
- Actual				
- Actual last year				
Year to Date				
- Planned				
- Actual				
- Actual last year				



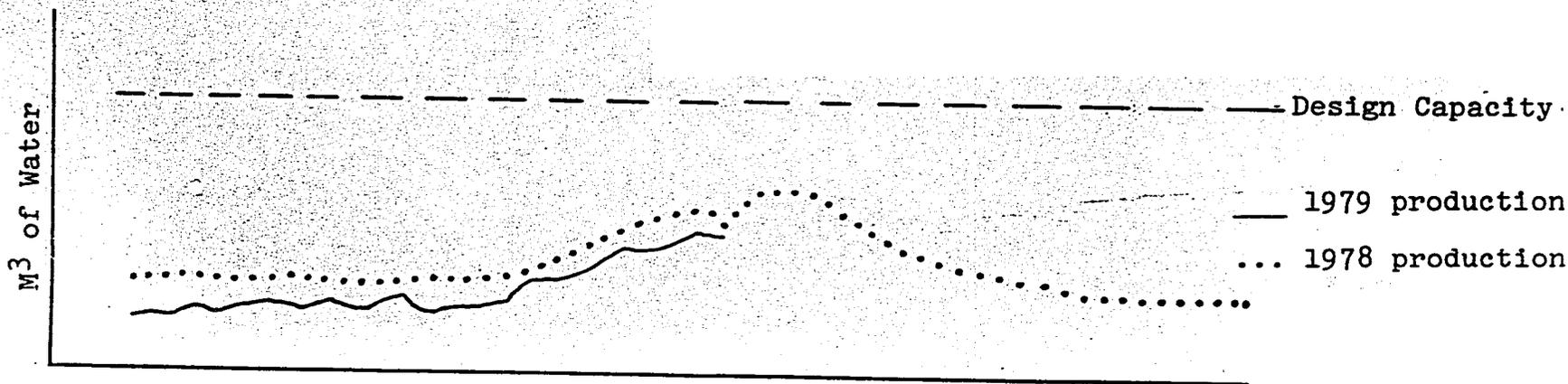
DESIGN VS. MAXIMUM 24 HOUR PRODUCTION OF EACH WEEK

Plant Name \_\_\_\_\_

Month of \_\_\_\_\_



Plant Name \_\_\_\_\_



MONTHLY PRODUCTION REPORT  
(Water Utilities)

EXHIBIT A8.2  
Page 4 of 4

MONTHLY TREATMENT REPORT

PURPOSE: To inform top management of the level of operations  
To provide information for long-range planning

SCOPE: One report for the utility

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Management Committee;  
General Manager, Treatment;  
Plant Managers

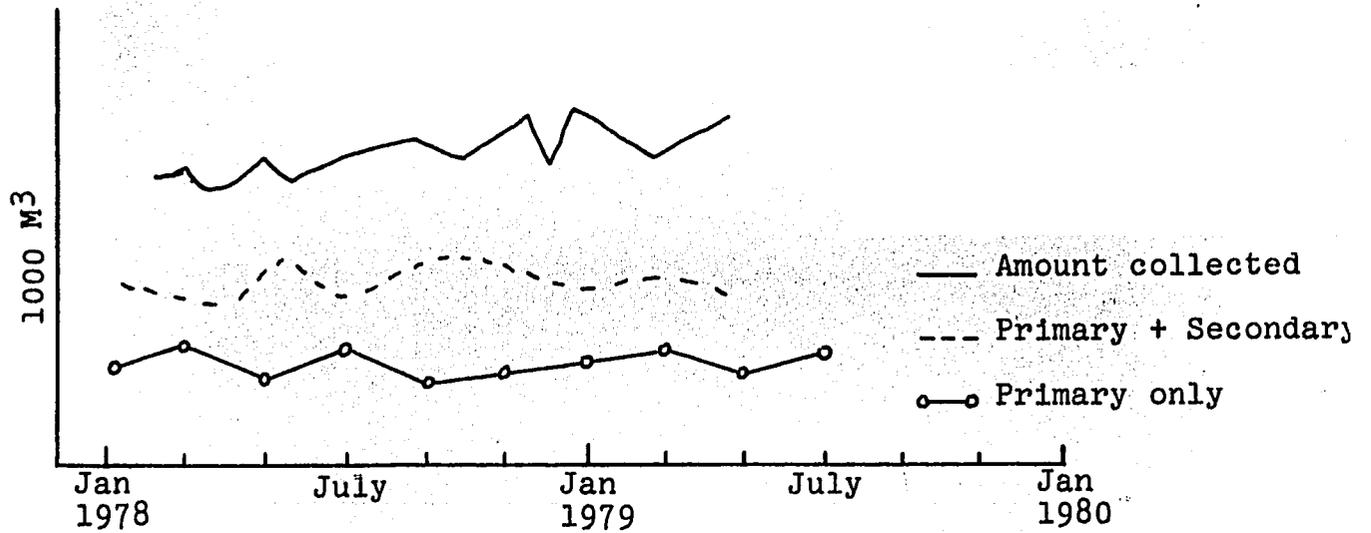
FREQUENCY: Monthly. Deliver by the 20th of the following month.

RETENTION: Five years

DATA SOURCES: Daily Plant Report

MONTHLY TREATMENT REPORT

TOTAL QUANTITY COLLECTED AND TREATED



QUANTITY TREATED (1000 Cubic Meters)

	Actual			Plan This Month	Maximum Day Flow	
	One Year Ago	Last Month	This Month		Actual	Capacity
Plant A Primary Only						
Plant B Primary Only Primary + Secondary						
Plant C Primary Only Primary +Secondary						
Quantity Not Treated						

MATERIALS AND ENERGY EFFICIENCY REPORT  
(Water and Sewerage Utilities)

PURPOSE: To encourage efficient use of power and materials  
To provide information for planning

SCOPE: One report for the utility

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Chairman; Vice Chairman, Operations;  
General Manager, Production or Treatment;  
Plant Managers;  
General Manager, Laboratories

FREQUENCY: Monthly. Deliver by 20th of following month.

RETENTION: Two months. Retain December report for five years.

DATA SOURCES: Material Usage Report prepared by Materials Control

REMARKS: The sample format provides space only for chlorine. Similar reports should be prepared that summarize planned, actual and last year's values for:

<u>Item</u>	<u>Measure</u>
Alum	Parts per million
Nalco	Parts per million
Electricity	Kwh/M <sup>3</sup> pumped
Diesel fuel for pumping	Liters/M <sup>3</sup> pumped
Diesel fuel for electricity	Kwh/Liter of diesel fuel
Solar for pumping	Liters/M <sup>3</sup> pumped

MATERIALS AND ENERGY EFFICIENCY REPORT

Report Date \_\_\_\_\_

Period Ending \_\_\_\_\_

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pre-treatment Chlorine (1)												
Plant 1												
Plant 2												
⋮												
Plant N (2)												
Post-treatment chlorine (3)												
Plant 1												
⋮												
Plant N (2)												
Total Chlorine (3)												
Plant 1												
Plan												
Actual												
⋮												
Plant N (2)												
Plan												
Actual												

Notes: (1) Grams/cubic meter of treated water.  
 (2) Each plant should be listed.  
 (3) Grams/cubic meter of potable water.

HOURS OF NON-FUNCTIONING CLASS A EQUIPMENT

PURPOSE: To enable top management evaluation of plant maintenance performance  
To focus maintenance effort on the goal of providing a high level of service

SCOPE: One report for the utility

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Management Committee; General Manager, Treatment; General Manager, Facilities and Maintenance; Manager, Maintenance; Plant managers

FREQUENCY: Monthly. Deliver by 20th of following month.

RETENTION: December report - Five years  
Other months - Two months

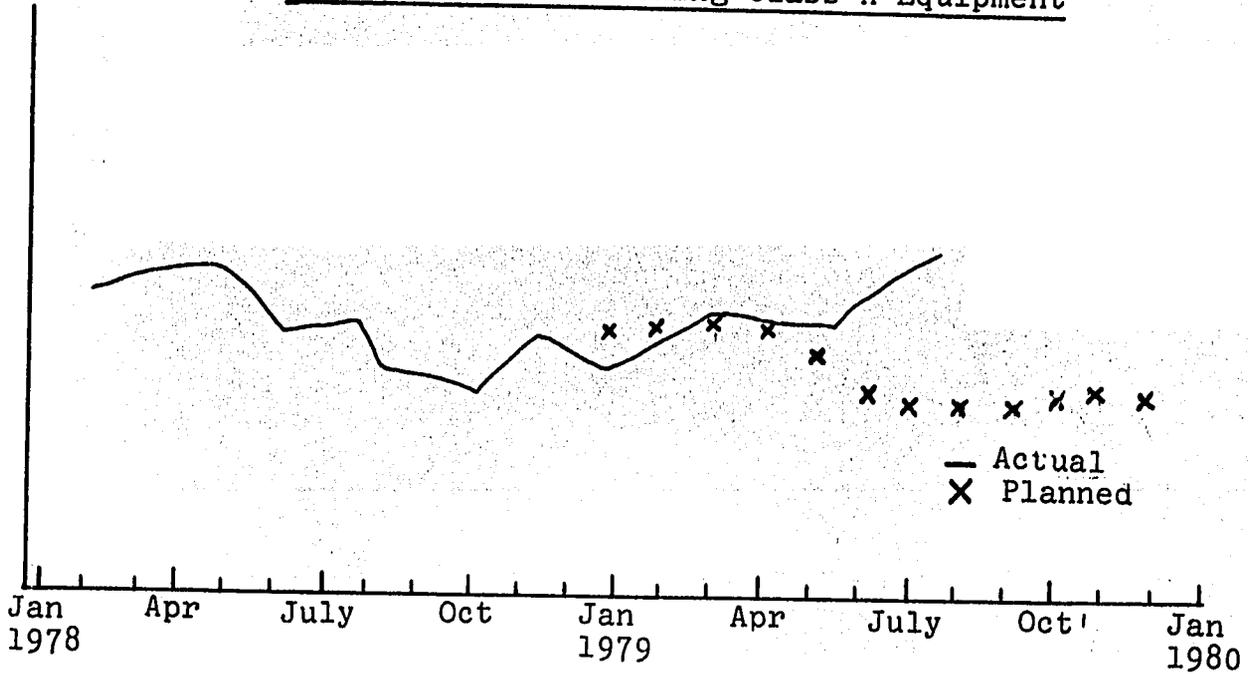
DATA SOURCES: Plant monthly maintenance reports

HOURS OF NON-FUNCTIONING CLASS A EQUIPMENT

Month \_\_\_\_\_

Report Date \_\_\_\_\_

Hours of Non-Functioning Class A Equipment



Name of Plant or Branch	Days Non-Functioning	Percent of Total Days	Planned Percent of Total Days

MONTHLY BOOSTER STATION ANALYSIS

PURPOSE: To encourage efficient operation of booster stations.

SCOPE: One report summarizing the operations of all stations

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: General Manager, Production; Manager, Booster Stations; Booster Station Supervisor

FREQUENCY: Monthly, to be delivered by the 20th of the following month

RETENTION: Two years by Supervisor, Operations Statistics

DATA SOURCE: Daily Booster Station Report

MONTHLY BOOSTER STATION ANALYSIS

Station	Total Quantity Pumped (1,000 M <sup>3</sup> )		Pumping Efficiency			Hours Below Target Pressure(1)	Hours Without Electricity	Percent Machine Hours Available
	Month	Maximum Day	Kilowatt Hours per 1000 M <sup>3</sup>	Liters/1000 M <sup>3</sup>				
				Diesel	Solar			
Booster No.1								
Last Month - Actual								
This Month - Actual								
This Month - Plan								
1 Year Ago - Actual								
Booster No. 2 and others								

Note: (1) May be omitted by sewerage utilities.

MONTHLY WELLFIELD REPORT

PURPOSE: To ensure each well is checked each month for performance  
To monitor trends in wellfield production

SCOPE: One report covering all wellfields in the utility

PREPARED BY: Supervisor, Operations Statistics

DISTRIBUTED TO: Vice Chairman, Operations;  
General Manager, Treatment;  
General Manager, Facilities and Maintenance;  
Wellfield managers

FREQUENCY: Monthly. Deliver by the 15th of the following month.

RETENTION: Retain one copy for five years.

DATA SOURCES: Laboratory logbooks  
Inspection logbooks

REMARKS: This report assumes a monthly inspection of motor performance, drawdown and water quality of each well. More frequent inspections of individual wells are required if any of the above factors are near specification limits. Water quality specification limits should be closer for wells than for water treatment plants since wellwater quality is not closely monitored



DAILY PLANT REPORT  
(Water Utilities)

PURPOSE: To alert headquarters operations personnel to significant changes in the level of service provided to the plants

To provide detailed data for evaluating performance

SCOPE: At least one report should be prepared for each plant. Additional reports may be prepared for large plants with physically separate treatment flows.

PREPARED BY: Plant Manager

DISTRIBUTED TO: General Manager, Production (or Treatment)  
General Manager, Laboratories  
Supervisor, Operations Statistics  
Plant Supervisors  
Plant Laboratory Supervisor

FREQUENCY: Delivered to headquarters by 9:30 A.M. each day  
(May be telephoned in to headquarters)

RETENTION: One year

DATA SOURCES Plant log books  
Laboratory log books

REMARKS: Headquarters should measure plant managers on the basis of level of service provided to customers. Therefore, this report provides information only on input and output water. If trouble develops, headquarters personnel may request additional operating data.

DAILY PLANT REPORT - WATER

Responsible Manager \_\_\_\_\_ Date \_\_\_\_\_

Plant Name \_\_\_\_\_ Code \_\_\_\_\_

<p><u>QUANTITY OF PRODUCTION</u></p> <p>Daily Output:</p> <p style="padding-left: 20px;">Potable Water _____ M<sup>3</sup></p> <p style="padding-left: 20px;">Irrigation Water _____ M<sup>3</sup></p> <p>Maximum Hourly Output:</p> <p style="padding-left: 20px;">Quantity _____ M<sup>3</sup></p> <p style="padding-left: 20px;">Time _____</p> <p>Quantity Raw Water _____ M<sup>3</sup></p> <p>Quantity Well Water _____ M<sup>3</sup></p>	<p><u>PRESSURE</u></p> <p>Low Pressure Times:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Total hours low pressure _____</p> <p>Reasons _____</p> <p>_____</p>
---	--

OUTPUT WATER QUALITY

Limit	Turbidity	Residual Chlorine
Maximum		
Time		
Minimum		
Time		
Hours above Target		
Hours below Target		

Other Out-of-Specification Results:

Test	Value	Time
_____	_____	_____
_____	_____	_____
_____	_____	_____

INPUT WATER LEVEL

Minimum \_\_\_\_\_ cm

Hours below XX cm \_\_\_\_\_

POWER OUTAGES: (List times)

\_\_\_\_\_

\_\_\_\_\_

Total Number of Interruptions \_\_\_\_\_

Total Minutes Off \_\_\_\_\_

CLASS A EQUIPMENT OUT OF SERVICE

Item of Equipment	Reason	Expected Return to Service
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

DAILY PLANT REPORT - SEWAGE

Responsible Manager \_\_\_\_\_ Date \_\_\_\_\_

Plant Name \_\_\_\_\_ Code \_\_\_\_\_

<u>WEATHER</u>			
Temperature:	Maximum _____ °C	Minimum _____ °C	
Precipitation _____ cm		Dust _____	
<u>PLANT INFLUENT</u>			
Total Quantity _____			
Maximum Flow _____ M <sup>3</sup> /hour	Time _____		
Minimum Flow _____ M <sup>3</sup> /hour	Time _____		
<u>TREATMENT</u>			
	<u>Primary</u>	<u>Secondary</u>	
Quantity Treated	_____ M <sup>3</sup>	_____ M <sup>3</sup>	
Suspended Solids(SS)	_____ mg/l	_____ mg/l	
Percent Reduction SS	_____ %	_____ %	
Amount of Sludge Wasted	_____ M <sup>3</sup>	_____ M <sup>3</sup>	
Amount of Sludge Returned to Aeration Basins		_____ M <sup>3</sup>	
<u>PERSONNEL</u>			
Shift personnel: First _____	Second _____	Third _____	
Maintenance _____	Other _____	Total _____	
<u>EQUIPMENT OUT OF SERVICE</u>			
Equipment Item	Time		Reason
	From	To	
Power Outages (List Times): _____			

PLANT MANAGER'S DAILY SUMMARY  
(Water Utilities)

PURPOSE: To alert the plant manager to any operating problems  
To provide data for Headquarters Daily Plant Report

SCOPE: One report for each plant

PREPARED BY: The supervisor of each area of the plant prepares a page describing activities in his area

DISTRIBUTED TO: Plant Manager, Plant Maintenance Supervisor;  
Plant Laboratory Supervisor

FREQUENCY: Daily. Deliver by 9 A.M. of following day.

RETENTION: Five days

DATA SOURCES: Logbooks and observations of operating personnel

REMARKS: These reports are not a substitute for good operating logs. They are designed only to indicate the level of operations and exceptional circumstances requiring the attention of the plant managers  
The tables may be rearranged to fit plant physical arrangements

PLANT MANAGER'S DAILY SUMMARY  
- RAW WATER PUMPS

Quantity of Water Pumped: \_\_\_\_\_ M<sup>3</sup>

Input Water Level: 1st shift \_\_\_\_\_ 2nd shift \_\_\_\_\_ 3rd shift \_\_\_\_\_

Power Consumed:

Electricity: \_\_\_\_\_ Kwh

Diesel: \_\_\_\_\_ liters

Solar: \_\_\_\_\_ liters

Chlorine Used \_\_\_\_\_ Kgs

Water Temperature

Minimum \_\_\_\_\_ °C

Maximum \_\_\_\_\_ °C

Equipment Failures \_\_\_\_\_

Remarks: \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY  
- CLARIFIERS

Chemicals Used:

Alum	_____ Kgs	<u>Desired Dosage</u>
		_____ gms/liter

Coagulent Aid	_____ Kgs	_____ gms/liter
---------------	-----------	-----------------

Other	_____ Kgs	_____ gms/liter
-------	-----------	-----------------

Average Detention Time \_\_\_\_\_ hours

Output Turbidity

Minimum: \_\_\_\_\_ ITU      Time \_\_\_\_\_

Maximum: \_\_\_\_\_ ITU      Time \_\_\_\_\_

Equipment Failures \_\_\_\_\_

Equipment Not Available \_\_\_\_\_

Remarks \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY

PLANT MANAGER'S DAILY SUMMARY  
- FILTERS

Total Filter Hours \_\_\_\_\_ Hours

Maximum Output Turbidity \_\_\_\_\_ ITU

Minimum Run Period \_\_\_\_\_ Filter Number \_\_\_\_\_  
Period \_\_\_\_\_ hr.

Equipment Failures \_\_\_\_\_

Equipment Not in Use \_\_\_\_\_

Remarks: \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY  
- FINAL CHLORINATION

Chlorinator Number	Kilograms of Chlorine Used	Kilograms of Chlorine on Hand
1		
2		
3		
4		
5		
6		
Total		

Equipment Failures: \_\_\_\_\_

Equipment Not Available: \_\_\_\_\_

Remarks: \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY

PLANT MANAGER'S DAILY SUMMARY  
- POWER PLANT

Source	Fuel Used (Liters)	Electricity Used (Kwh)	Fuel to Power Ratio
External			
Diesel			
Solar			
Total			

Diesel Fuel on Hand \_\_\_\_\_ Liters

Solar Fuel on Hand \_\_\_\_\_ Liters

Hours without external power \_\_\_\_\_ hours

Details \_\_\_\_\_

Equipment Failures \_\_\_\_\_

Equipment Not Available \_\_\_\_\_

Remarks \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY  
- WELLFIELD

Well Hours Pumped \_\_\_\_\_ hours

Volume Pumped \_\_\_\_\_ M3

Electricity Used \_\_\_\_\_ Kwh

Wells in field \_\_\_\_\_ Wells pumped this day \_\_\_\_\_

Wells or Equipment Failure \_\_\_\_\_

Remarks: \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY  
-HIGH LIFT PUMPS

Power Source	Amount Consumed	Pump Hours	Power per 1000 M <sup>3</sup>
Electricity			
Diesel(liters)			
Solar (liters)			
Total			

Potable Water Temperature : Min. \_\_\_\_\_ °C Max. \_\_\_\_\_ °C

Quantity of Water Pumped: Potable: \_\_\_\_\_ M<sup>3</sup>  
 Irrigation: \_\_\_\_\_ M<sup>3</sup>  
 Other: \_\_\_\_\_ M<sup>3</sup>  
 Total: \_\_\_\_\_ M<sup>3</sup>

Minimum Clear Well Level: \_\_\_\_\_ Time: \_\_\_\_\_

Equipment Failures \_\_\_\_\_

Equipment Not Available \_\_\_\_\_

Remarks \_\_\_\_\_

PLANT MANAGER'S DAILY SUMMARY  
- HIGH LIFT PUMPS

Time	Pressure Readings			Calculated Volume of Water Delivered (M3)
	Main 1	Main 2	Main 3	
1:00				
2:00				
3:00				
4:00				
5:00				
6:00				
7:00				
8:00				
9:00				
10:00				
11:00				
12:00				
13:00				
14:00				
15:00				
16:00				
17:00				
18:00				
19:00				
20:00				
22:00				
24:00				
Total				

DAILY BOOSTER STATION REPORT

PURPOSE: To alert management to failures of service  
To provide data for monthly analysis of performance

SCOPE: One report for each booster station

PREPARED BY: Supervisor, Booster Station

DISTRIBUTED TO: Immediate supervisor of the station;  
Supervisor, Operations Statistics

FREQUENCY: Daily, to be delivered to Headquarters  
within two days

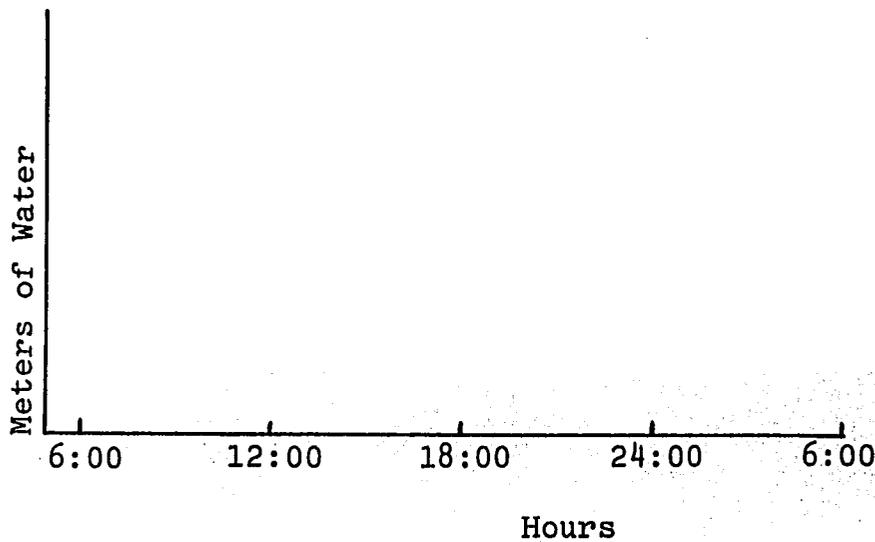
RETENTION: One year by Supervisor, Operations Statistics

DATA SOURCE: Station log

DAILY BOOSTER STATION REPORT

Station: \_\_\_\_\_ Date: \_\_\_\_\_  
Supervisor: \_\_\_\_\_ Report Date: \_\_\_\_\_

OUTPUT PRESSURE



Total Quantity Pumped \_\_\_\_\_ M<sup>3</sup>

MACHINE AVAILABILITY

	<u>Machine Hours</u>	<u>Breakdowns - Comments</u>
Pump 1	_____	_____
Pump 2	_____	_____
Pump 3	_____	_____

POWER CONSUMPTION

<u>Fuel (Liters)</u>	<u>Electricity (Kwh)</u>
On hand - start	Meter Reading - end
Additions	Meter Reading - start
Available	Net Consumption
On hand - end	
Net consumption	

DAILY WATER LABORATORY REPORT

- PURPOSE: To provide a brief review of the principal water quality factors from the previous day
- To recommend chemical dosages for the current day
- To highlight deviations from expected water quality
- SCOPE: One report for each plant
- PREPARED BY: Plant Laboratory Supervisor
- DISTRIBUTED TO: Plant Manager and any other plant personnel as directed by the Plant Manager
- FREQUENCY: Daily. Deliver by 8:30 A.M.
- RETENTION: Two months
- DATA SOURCES: Laboratory logbooks

DAILY WATER LABORATORY REPORT

Plant Name: \_\_\_\_\_ Date: \_\_\_\_\_

Laboratory Supervisor: \_\_\_\_\_ Report Date \_\_\_\_\_

Time	Raw Water Turbidity	Treated Water (2)			
		Main 1		Main 2	
		Turbidity	Residual(1)	Turbidity	Residual(1)
8 a.m.					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
1					
2					
3					
4					
5					
6					
7					

Notes: (1) Residual Chlorine  
(2) Add additional columns if more than two mains.

DAILY WATER LABORATORY REPORT (1)

DOSAGE RECOMMENDATIONS

MOST RECENT RAW WATER ANALYSES			
Test	Time	Number of Samples	Results
pH			
Color			
Alkalinity			
Conductivity			
Temperature			
Algae Species Count			
1			
2			
3			
4			
Free Ammonia			
Oxygen Consumed			
Chlorides			
Oil			
Jar Test Results			

RECOMMENDED DOSAGE RATES				Plant Manager's Decision(1)
Chemical	Units	Report Date	Today	
Pre Treatment Chlorine				
Alum				
Post Treatment Chlorine				
Coagulant Aid				
Other				

Note: (1) To be entered by the plant manager.

DAILY WATER LABORATORY REPORT

LABORATORY TESTS OUTSIDE SPECIFICATIONS(1)

Test	Time	Number of Samples	Location	Result

Note: (1) Test results that are not within limits determined jointly by plant manager and laboratory supervisors. These limits should be closer than those specified as the utility's goal and should cover all areas of laboratory work in the plant.

MONTHLY LABORATORY ANALYSIS

PURPOSE: To permit analysis of long-term trends  
in water quality  
To provide data for setting goals and  
budgeting

SCOPE: One report for each plant

PREPARED BY: Plant Laboratory Supervisor

DISTRIBUTED TO: General Manager, Production;  
General Manager, Laboratories;  
Supervisor, Operations Statistics;  
Plant Manager

FREQUENCY: Monthly. Deliver by 20th of following month.

RETENTION: Supervisor, Operations Statistics should  
retain his copy permanently.

DATA SOURCES: Plant laboratory logbooks

MONTHLY LABORATORY ANALYSIS<sup>(1)</sup>

DAILY POTABLE WATER ANALYSIS <sup>(2)</sup>									
Date	Main 1				Main 2	Main 3	Total Dissolved Salts		
	Turbidity	Temperature	pH	Conductivity	Residual Chlorine	Same as for Main 1			
1									
2									
3									
4									
5									
31									
Daily Average									
Minimum									
Maximum									

Additional Columns for Total Alkalinity, Total Hardness, Permanent Hardness, Total Nitrogen, Free Ammonia, Nitrate-Nitrite, Confirmed Bacteria, Bacteria Plate Count, Oxygen Consumed, and Algae Count

Note: (1) Report worst case for the day

(2) The following page of this report should present a similar analysis of raw water. The headings Main 1, Main 2 and Main 3 should then be replaced by Intake 1, Intake 2 and Intake 3. Only one intake need be reported if the results are always nearly the same. In addition to the analysis listed above, there should be a column for oil (ppm) and water level.

MONTHLY LABORATORY ANALYSIS

Analysis	Weekly Potable Water Analysis <sup>(1)</sup>									
	Week 1		Week 2		Week 3		Week 4		Week 5	
	Date	Value	Date	Value	Date	Value	Date	Value	Date	Value
Calcium										
Magnesium										
Iron										
Manganese										
Sodium										
Potassium										
Lead										
Copper										
Cadmium										
Zinc										
Aluminum										
Silica										
Sulfate										
Phosphate										
Fluoride										

Note: (1) The following page of this report should contain a similar analysis of raw water quality. In addition to the analyses listed above, the raw water report should list surfactants, total solids, suspended solids, BOD and COD.

MONTHLY LABORATORY ANALYSIS

AVERAGE DAILY DOSAGE RATE					
Date	Alum	Chlorination		Nalco	Other Chemicals (list)
		Pre	Post		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
Average					

MONTHLY PLANT REPORT - SEWAGE

PURPOSE: To ensure adequate monitoring of plant operation  
To permit evaluation of trends in plant efficiency

SCOPE: One report for each treatment plant

PREPARED BY: Plant Laboratory Manager

DISTRIBUTED TO: General Manager, Treatment;  
Plant Manager;  
Supervisor Operations Statistics

FREQUENCY: Monthly. Deliver by the 10th of the month.

RETENTION: Operation Statistics should retain a copy for five years.

DATA SOURCES: Plant and laboratory logbooks

REMARKS: If plant personnel are diligent in maintaining logs this report could be restricted to the Section labeled Weather, Plant Influent, Plant Effluent, and Plant Efficiency.

MONTHLY PLANT REPORT - SEWAGE

Month of \_\_\_\_\_

Plant Name: \_\_\_\_\_ Responsible Manager: \_\_\_\_\_ Date: \_\_\_\_\_

Date	Weather			Plant Influent(1)						
	Temperature		Rain (cm)	Quantity (1000M3)	BOD (mg/l)	Suspended Solids(SS) (mg/l)	Volatile SS (mg/l)	Oil and Grease	Temp- erature	Fecal Coliforms (MPN/100)
	Max.	Min.								
1										
2										
3										
30										
31										
Average										
Maximum										
Minimum										

Note: (1) Abbreviations include: mg/l=milligrams per liter  
 MPN= most probable number per 100 milliliters

MONTHLY PLANT REPORT - SEWAGE

PRIMARY TREATMENT (1)

1. Grit Removed (M<sup>3</sup>)

2. Primary Influent

Suspended Solids (mg/l)  
Settleable Solids (mg/l)  
Five-Day BOD (mg/l)  
Oil and Grease (mg/l)

3. Primary Effluent

BOD (mg/l) for each basin  
Settleable Solids (mg/l) for each basin  
Oil and Grease (mg/l) for each basin

4. Percent Removal

Settleable Solids (mg/l) for each basin  
Five-Day BOD (mg/l) for each basin  
Oil and Grease (mg/l) for each basin

5. Primary Sludge

Quantity Pumped (M<sup>3</sup>)  
Total Suspended Solids (mg/l)

SECONDARY TREATMENT (1)

1. Mixed Liquor (column for each basin)

Suspended Solids (mg/l)  
Volatile Suspended Solids (mg/l)  
Dissolved Oxygen (mg/l)  
Settleability (mg/l)  
Temperature (°C)  
pH

Note: (1) This Section should be set up in a format similar to that shown on Page 2.

MONTHLY PLANT REPORT - SEWAGE

2. Return Sludge (column for each basin)

Flow  
Total Suspended Solids (mg/l)  
Volatile Suspended Solids (mg/l)

3. Waste Sludge (column for each basin)

Flow (M<sup>3</sup>)  
Total Suspended Solids (mg/l)

4. Air Applied

Volume (M<sup>3</sup>)

5. Average Detention time (hours)

PLANT EFFLUENT (column for each outfall)<sup>(1)</sup>

1. Five Day BOD (mg/l)
2. Suspended Solids (mg/l)
3. Settleable Solids (mg/l)
4. pH
5. Fecal Coliforms - MPN (Most probable number)/100 ml
6. Alkalinity (mg/l as CaCO<sub>3</sub>)
7. Chlorides (mg/l)
8. Phosphorus (mg/l)
9. Total Nitrogen (mg/l)
10. Dissolved Oxygen

PLANT EFFICIENCY (Percent Reduction)<sup>(1)</sup>

Five-Day BOD (mg/l)  
Total Suspended Solids (mg/l)  
Settleable Solids (mg/l)  
Fecal Coliforms (MPN/100)

Note: (1) This Section should be set up in a format similar to that shown on Page 2.

MONTHLY PLANT MAINTENANCE REPORT

PURPOSE: To permit headquarters evaluation of maintenance performance  
To encourage efficient and effective maintenance programs

SCOPE: One report for each plant

PREPARED BY: Plant maintenance manager (or by plant manager if there is no maintenance manager)

DISTRIBUTED TO: Vice Chairman, Operations; General Manager, Production (Treatment); General Manager, Facilities and Maintenance (3 copies); Supervisor, Operations Statistics; Plant Manager; Plant supervisory personnel designated by the Plant Manager

FREQUENCY: Monthly. Deliver to headquarters by the 15th of the following month.

RETENTION: Supervisor, Operations Statistics should retain his copy for three years.

DATA SOURCES: Plant logbooks, Time reports, special materials cost report

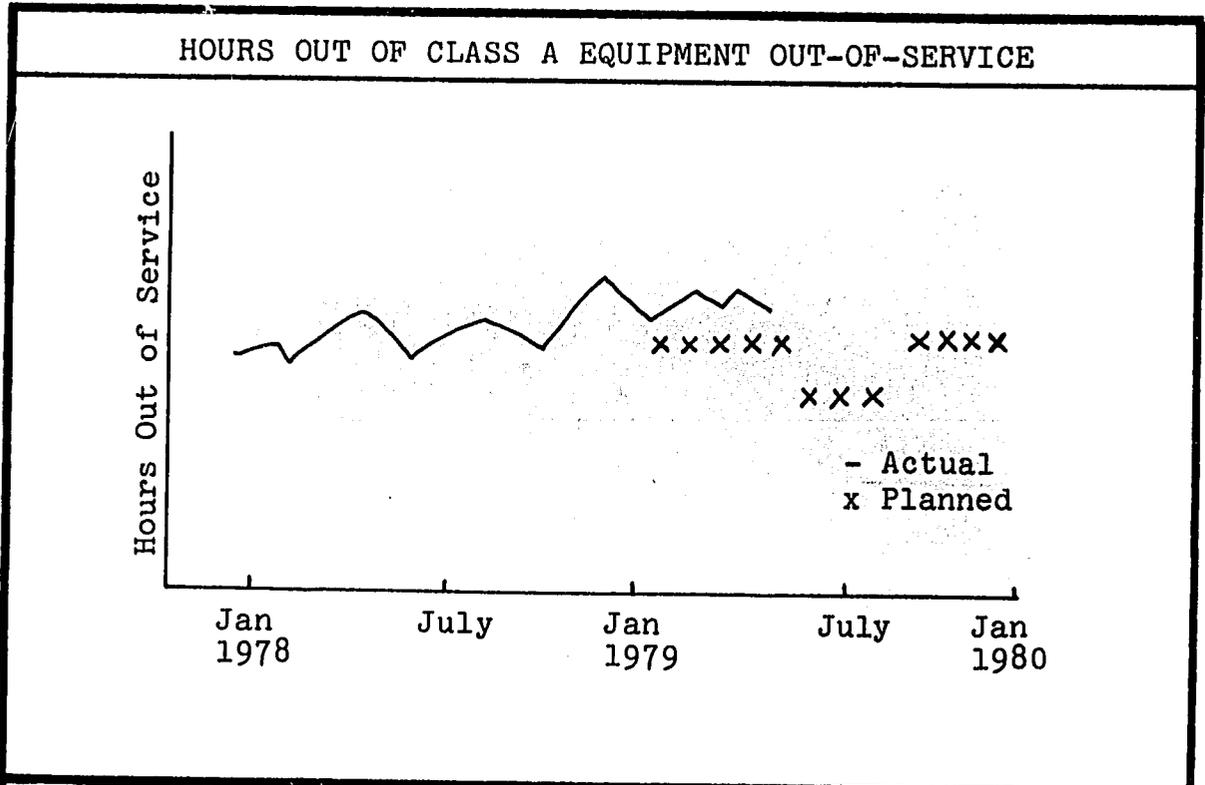
REMARKS: Class A equipment includes items whose failure reduces the efficiency of the collection, treatment and distribution processes. See Exhibits 3.6, 3.9, 3.10 and 3.12 in the Procedures and Methods Report for additional forms to be used.

MONTHLY PLANT MAINTENANCE REPORT

Month of \_\_\_\_\_

Responsible Manager \_\_\_\_\_ Date \_\_\_\_\_

Plant Name \_\_\_\_\_ Code \_\_\_\_\_



CLASS A EQUIPMENT OUT OF SERVICE THIS MONTH		
Item	Hours Out of Service	Reason

MONTHLY PLANT MAINTENANCE REPORT

Month of \_\_\_\_\_

Type of Maintenance	Number of Work-Orders	Man-Hours		Costs (1)						Percent of Total
		Regular	Over-time	Labor		Materials		Total		
				Budget	Actual	Budget	Actual	Budget	Actual	
Preventive (1)										
Planned Overhaul (1)										
Emergency (1)										
Others (2)										
Total										
Year to Date										

PLANNED WORK FOR NEXT MONTH (3)			
Job Description	Estimated Dates		Reason for Delay (if any)
	Start	Complete	

- Notes: (1) Man hours and costs based on job accounting system results.  
 (2) Balance of costs reported by responsibility accounting system.  
 (3) This form should be placed on a separate page.

OVERHAUL SCHEDULE

PURPOSE: To encourage efficient and regular maintenance of all large pieces of equipment

SCOPE: One report for each plant

PREPARED BY: Plant Maintenance Manager (or Plant Manager if there is no maintenance manager)

DISTRIBUTED TO: Vice Chairman, Operations;  
General Manager, Production (Treatment);  
Supervisor, Operations Statistics;  
General Manager, Materials Management;  
Plant Manager, Plant Stores Manager

FREQUENCY: Annually. Delivery date to be determined by the budget schedule.

RETENTION: Five years

DATA SOURCES: Machine hour logbooks

OVERHAUL SCHEDULE(1)

Year \_\_\_\_\_

Responsible Manager \_\_\_\_\_ Date Prepared \_\_\_\_\_

Plant Name \_\_\_\_\_ Code \_\_\_\_\_

Department/Equipment Item	Week Beginning																
	Jan				Feb				March				April				
	6	13	20	27	3	10	17	24	2	9	16	23	30	6	13	20	27
Clarifier Number 1(2) Clean Overhaul sludge remover		—								—							

- Notes: (1) Similar pages for the remaining months of the year should be prepared simultaneously.  
 (2) Example. Each piece of class A equipment to be overhauled or undergo major maintenance during the year should be so listed.

FLEET USE

PURPOSE: To encourage efficient use of the fleet  
To encourage regular maintenance of the fleet

SCOPE: One report for the utility

PREPARED BY: Manager, Fleet Control

DISTRIBUTED TO: Management Committee;  
General Manager, Facilities and Maintenance,  
General Supervisor, Maintenance

FREQUENCY: Monthly, Deliver by 15th of following month.

RETENTION: Retain for two years.

DATA SOURCES: Shop log, Vehicle logbooks

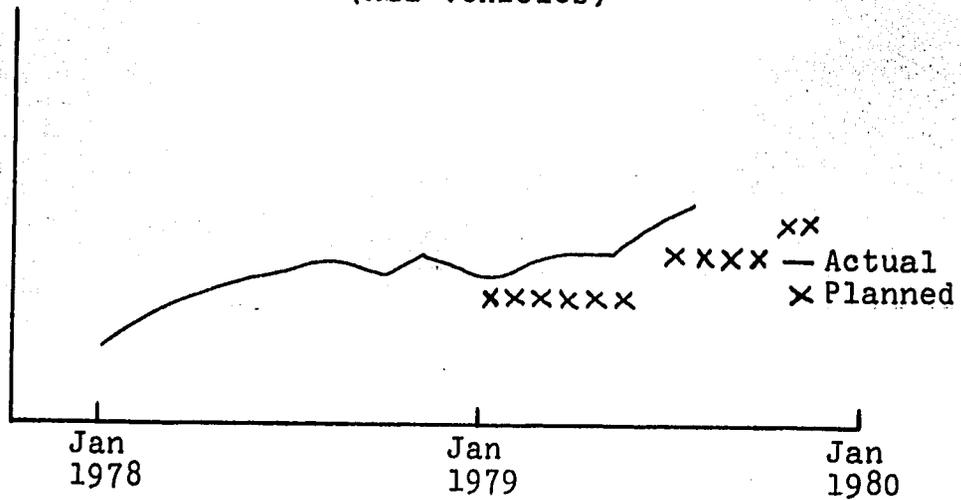
FLEET USE

Shop Manager \_\_\_\_\_ Period Ending / \_\_\_\_\_

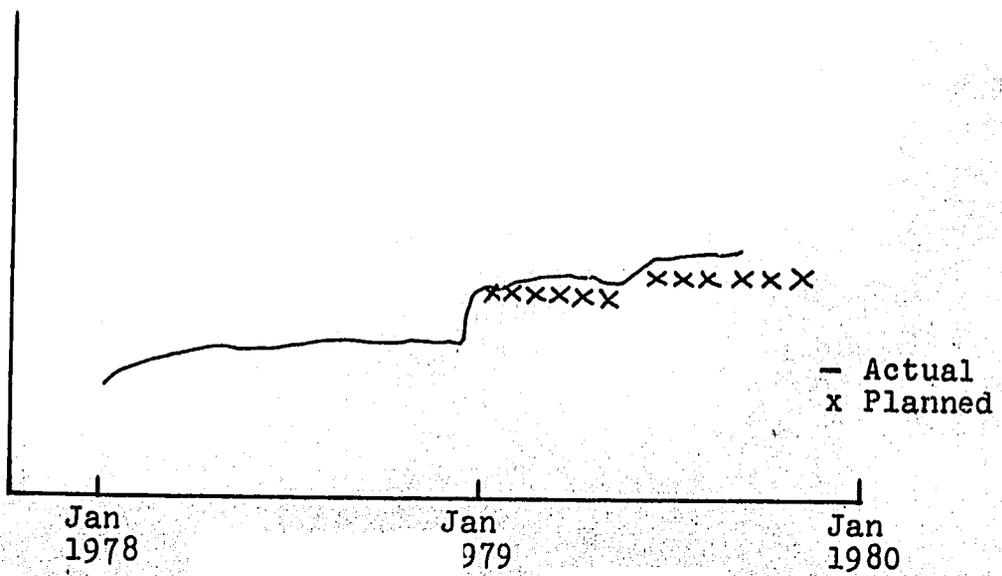
Report Date \_\_\_\_\_

VEHICLE KILOMETERS DRIVEN

(All vehicles)



COST PER KILOMETER  
(Cars, Pickups and Trucks)



FLEET USE

Shop Manager \_\_\_\_\_ Period Ending \_\_\_\_\_  
Report Date \_\_\_\_\_

AVAILABILITY

Vehicle Type	Number of Vehicles		Vehicle Days Available	Kilometers Traveled
	Beginning	End		
Motorcycles				
Cars				
Pick-ups				
Trucks				
Other				

MAINTENANCE RECORD

Vehicle Type	Number Serviced	Vehicle Days Not Available	Breakdowns Per 1000 km
Motorcycles			
Cars			
Pick-Ups			
Trucks			
Other			

EFFICIENCY

Vehicle Type	Kilometers/liter of Fuel	Operation Cost Per Kilometer
Motorcycles		
Cars		
Pick-ups		
Trucks		
Other		

MONTHLY BRANCH REPORT

PURPOSE: To provide data for planning network activities  
To encourage regular maintenance of mains, valves, hydrants and manholes  
To encourage prompt attention to leaks and blockages

SCOPE: One report for each networks branch

PREPARED BY: Distribution or Sewage Collection Branch Manager

DISTRIBUTED TO: First Page: Management Committee;  
Total Report: Vice Chairman, Operations;  
General Manager, Distribution or Sewage Collection  
General Manager, Facilities and Maintenance;  
General Supervisor, Maintenance;  
Supervisor, Complaints;  
Service Center Manager;  
Supervisor, Operations Statistics

FREQUENCY: Monthly. Deliver by the 10th of the following month.

RETENTION: Supervisor, Operations Statistics should retain for three years.

DATA SOURCES: Job cards, log books, complaint forms

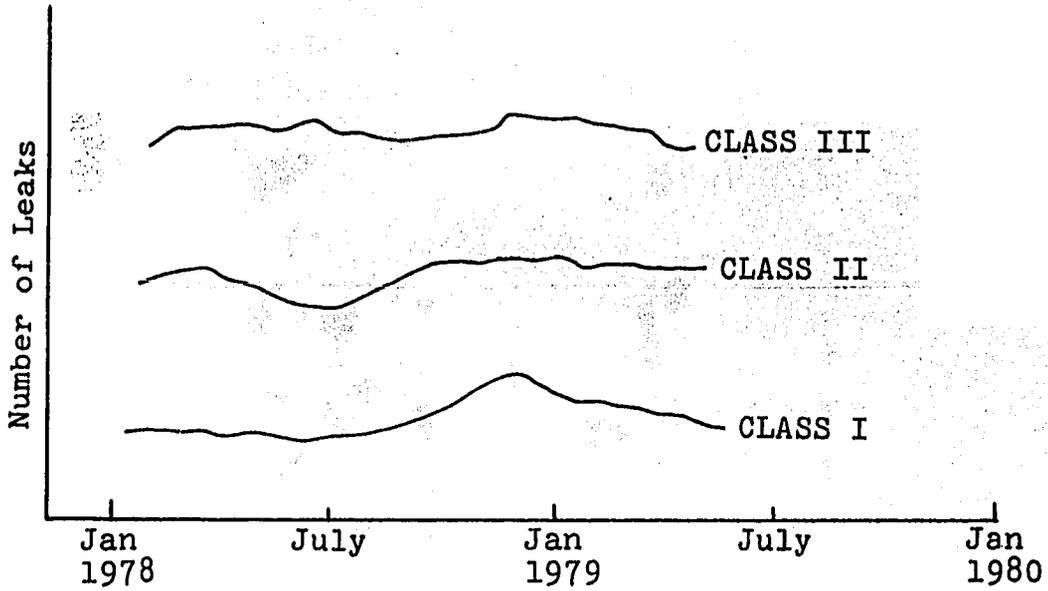
REMARKS: Pipe installed does not include connections or work by projects department.

MONTHLY BRANCH REPORT - WATER

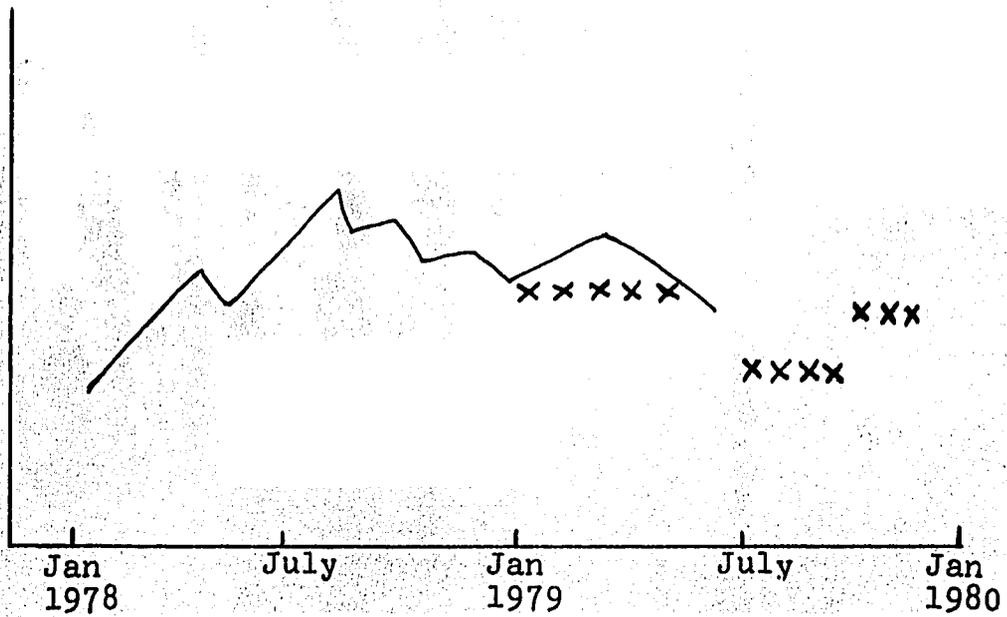
Branch \_\_\_\_\_ Month of \_\_\_\_\_ Date \_\_\_\_\_

Responsible Manager \_\_\_\_\_

NUMBER OF LEAKS



METERS OF PIPE INSTALLED



MONTHLY BRANCH REPORT - WATER

Month of \_\_\_\_\_

Branch \_\_\_\_\_

Item	Units	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Personnel</u>														
Plan	Number													
Actual	Number													
<u>Installations</u>														
Connections	Number													
Mains	Meters													
Hydrants	Number													
Valves	Number													
Manholes	Number													
<u>Hydrants</u>														
Total in System	Number													
Inspected														
Plan	Number													
Actual	Number													
Replaced														
Plan	Number													
Actual	Number													

The following items should be reported in a format similar to that on the preceeding pages.

<u>Item</u>	<u>Units</u>	<u>Information Reported</u> <sup>(1)</sup>	
		<u>Plan</u>	<u>Actual</u>
<b>Valves</b>			
Total in System	Number		X
Inspected			
Number	Number	X	X
Percent of Total	Percent	X	X
Repaired	Number	X	X
Replaced	Number	X	X
<b>Manholes and Covers</b>			
Cleaned	Number	X	X
Covers reset	Number	X	X
Covers replaced	Number	X	X
<b>Street Cuts</b>			
Cuts made	Meters	X	X
Paved	Meters	X	X
<b>Inspections</b>			
Residences	Number		X
Industrial	Number		X
Manholes	Number		X
Water in street	Number		X
<b>Leaks all classes</b>			
Reported	Number		X
Repaired	Number	X	X
Backlog	Number	X	X
Mains flushed	Meters	X	X

Note: (1) X donates items to be reported

MONTHLY BRANCH REPORT - WATER

Branch \_\_\_\_\_

Month of \_\_\_\_\_

LEAK REPORT

Leak Location	Leak Class(1)	Date First Reported	Date Repaired(2)	Elapsed Days(2)	Pipe Size and Type(2)	Estimated Cost(2)	
						Labor	Materials
			Total				

- Notes: (1) Class I: Blocks major street. Causes major inconvenience to public.  
 Class II: Blocks secondary street. Inconveniences public.  
 Class III: Minor leak. Causes little inconvenience. Do not report these here.  
 (2) Complete this column at the end of the month in which the repair was completed.

MONTHLY BRANCH REPORT - SEWERS

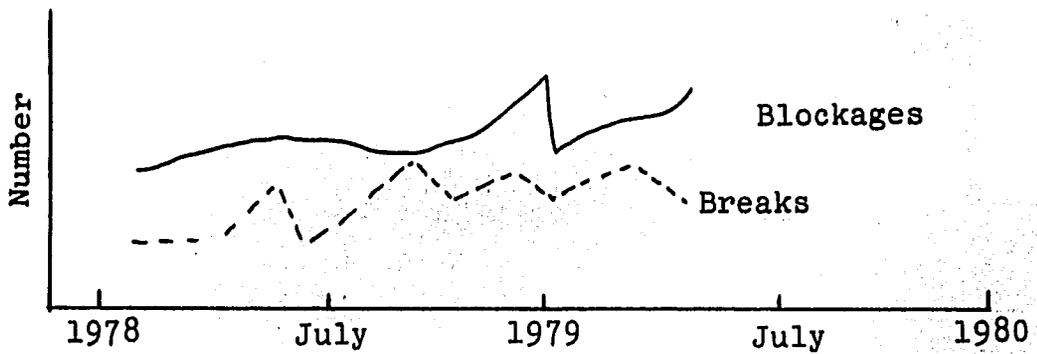
Month of \_\_\_\_\_

Branch \_\_\_\_\_

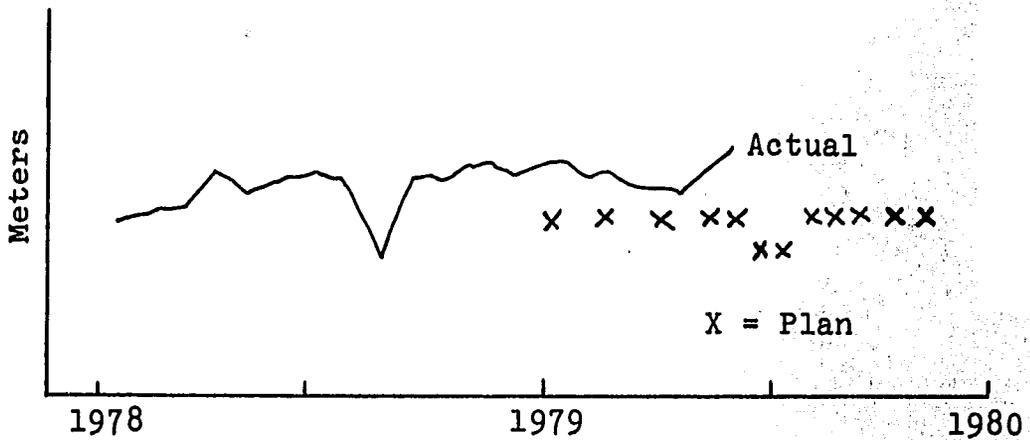
Date \_\_\_\_\_

Responsible Manager \_\_\_\_\_

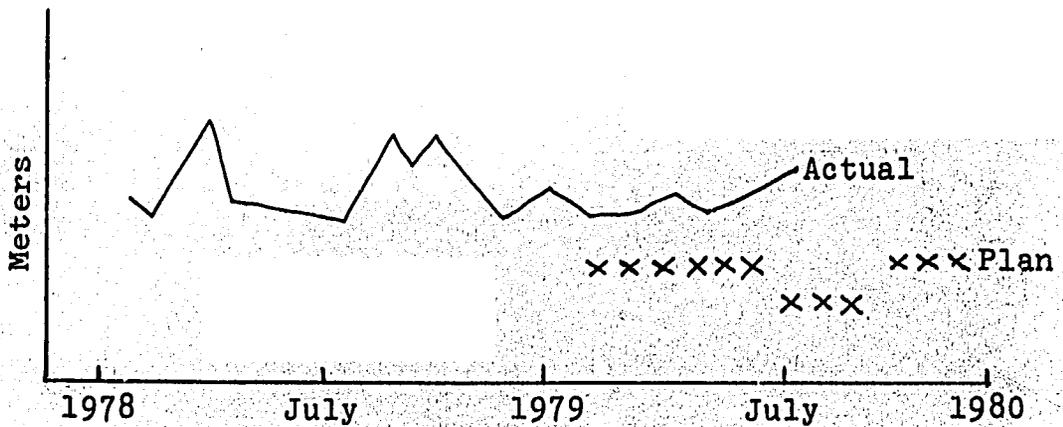
NUMBER OF BLOCKAGES AND BREAKS



METERS OF SEWERS CLEANED



METERS OF SEWER LAID



MONTHLY BRANCH REPORT - SEWERS

Month of \_\_\_\_\_

Branch \_\_\_\_\_

Item	Units	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Personnel</u>														
Plan	Number													
Actual	Number													
<u>Sewers Cleaned</u>														
Flushed	Meters													
Plan														
Actual														
Rodded	Meters													
Plan														
Actual														
Bucketed	Meters													
Plan														
Actual														
Jet Rodded	Meters													
Plan														
Actual														
<u>Septic Tanks Pumped</u>														
Number	Number													
Plan														
Actual														
Volume	Liters													

The following items should be reported in a format similar to that on the preceeding pages.

<u>Item</u>	<u>Units</u>	<u>Information Reported</u>	
		<u>Plan</u>	<u>Actual</u>
<b>Manholes</b>			
Cleaned	Number	X	X
Installed	Number	X	X
Reset	Number	X	X
Covers Replaced	Number	X	X
<b>Blockages</b>			
Reported	Number		X
Unblocked	Number	X	X
Backlog	Number		X
<b>Breaks</b>			
Force Mains	Number		X
Interceptors	Number		X
Others	Number		X
<b>Valves</b>			
Number in System	Number		X
Inspected	Number	X	X
Repaired on Site	Number	X	X
<b>Street Cuts</b>			
Cuts made	Meters		X
Paved	Meters		X
<b>Installations</b>			
Customer Connections	Number	X	X
Sewer Lines	Meters	X	X
Valves	Number	X	X
Tees	Number	X	X
Wyes	Number	X	X
<b>Inspections</b>			
Industrial	Number		X
Septic Tanks	Number		X
Suspected Illegal Taps	Number		X
Odor Complaints	Number		X
Manholes	Number		X
Water in Street	Number		X

DISTRIBUTION SYSTEM WATER QUALITY

PURPOSE: To ensure that the water reaching customers is of adequate quality

SCOPE: One report for the entire utility

PREPARED BY: General Manager, Laboratories

DISTRIBUTED TO: Management Committee

FREQUENCY: Monthly. Deliver by the 10th of the following month.

RETENTION: Retain for five years.

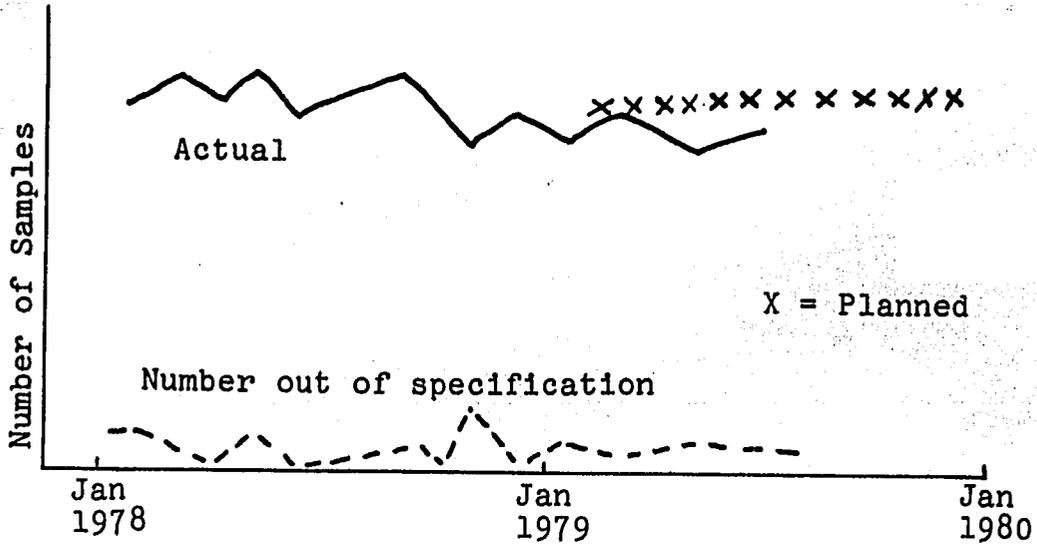
DATA SOURCES: Laboratory logbooks

DISTRIBUTION SYSTEM WATER QUALITY

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

NUMBER OF SAMPLES DRAWN IN DISTRIBUTION SYSTEM



Branch	Total Number Samples Drawn	Number Out Of Specification
Branch A		
Branch B		
Branch C		
Total		

DISTRIBUTION SYSTEM WATER QUALITY

Analysis of out of Specification Samples

Month of \_\_\_\_\_

Location	Number of Samples	Value of Specification(s) Not Met

PROJECT TASK ANALYSIS

PURPOSE: To provide financial and administrative control over individual projects  
To permit forecasting of completion of projects

FORMAT: See Exhibit 2.4.

SCOPE: One report for each active project that has a total budget of LE 5,000 or more

PREPARED BY: Project Manager

DISTRIBUTED TO: Vice Chairman, Technical;  
Manager, Asset Accounting;  
Any managers affected by the work

FREQUENCY: Monthly. Deliver by 15th of following month.

DATA SOURCE: Project plan, annual budget, accounting records, Project Manager's judgement

MONTHLY STATUS REPORT -  
TECHNICAL SECTOR

PURPOSE: To communicate opening and closing of projects to interested managers

SCOPE: One report for the Technical Sector

PREPARED BY: Vice Chairman, Technical Sector or his designee

DISTRIBUTED TO: Summary: Management Committee  
Total Report: Chairman, Purchasing, Asset Account Stores, Technical Sector managers

FREQUENCY: Monthly. Deliver by the 5th of the following month.

RETENTION: One year

DATA SOURCES: Projects log, Technical Sector managers

MONTHLY STATUS REPORT  
-TECHNICAL SECTOR

Month of: \_\_\_\_\_

Report Date: \_\_\_\_\_

SUMMARY

<u>Number of Personnel</u>	<u>Actual</u>	<u>Budget</u>
Engineers		
Others		

<u>Number of Projects Under:</u>	<u>Major</u> (1)	<u>Minor</u>
Design		
Bid		
Construction		

Note: (1) Projects requiring more than four man-months of Technical personnel time.

Projects Completed this Month:

<u>Title</u>	<u>Project Number</u>	<u>Location</u>
--------------	-----------------------	-----------------

(Use as much space as required)

Projects Beginning Next Month

<u>Title</u>	<u>Project Number</u>	<u>Manager</u>	<u>Location</u>
--------------	-----------------------	----------------	-----------------

(Use as much space as required.)

MONTHLY STATUS REPORT  
-TECHNICAL SECTOR

Month of: \_\_\_\_\_

PROJECTS UNDER DESIGN

<u>Title</u>	<u>Project Number</u>	<u>Manager</u>	<u>Percent Complete</u>
--------------	---------------------------	----------------	-----------------------------

(Use as much space as needed)

PROJECTS UNDER BID

<u>Title</u>	<u>Project Number</u>	<u>Manager</u>	<u>Desired Start Date</u>
--------------	---------------------------	----------------	-------------------------------

(Use as much space as needed)

CUSTOMER SERVICE  
SUMMARY REPORT

PURPOSE: To focus attention on collection efficiency  
To encourage attention to backlogs in activities affecting customers

SCOPE: One report for the utility

PREPARED BY: General Manager, Customer Service Centers

DISTRIBUTED TO: Management Committee, Customer Service Center Managers

FREQUENCY: Monthly. Deliver by the 15th of the following month.

RETENTION: Retain for two years.

DATA SOURCE: Service Center Monthly Reports

CUSTOMER SERVICE  
SUMMARY REPORT

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

Item	This Month		Year to Date	
	Actual	Plan	Actual	Plan
Water Revenues				
Service Revenues				
Total Revenues				
Water Collections				
Percent to Water Revenues				
Accounts Receivable				
Value - End of Month				
Number of Accounts Contacted				
Meters				
Number Read				
Number Estimated				
Number Rechecked				
Number Replaced				
Replacement Backlog				
Connections				
Number Completed				
Backlog - End of Month				
Turn-offs				
Number Ordered				
Number Done				
Backlog - End of Month				
Customer Complaints (Number)				
Billing				
Leaks - Private Property				
- Public Property				
Street Repair				
Low Pressure				
Connections				
Others				
Total				

SERVICE CENTER  
COMPARISON REPORT

PURPOSE: To encourage comparative evaluation of Service Centers

SCOPE: One report comparing results of all Service Centers

PREPARED BY: General Manager, Customer Service Centers

DISTRIBUTED TO: Vice Chairman, Customer Service,  
Service Center managers

FREQUENCY: Monthly. Deliver by 20th of following month.

RETENTION: To end of year. Retain December copy for five years.

DATA SOURCE: Service Center Monthly Reports

SERVICE CENTER  
COMPARISON REPORT

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

METERS READ (Does not include estimates)				
Service Center	This Month		This Year	
	Actual	Percent to Plan	Actual	Percent to Plan
Service Center A				
B				
C				
D				
E				
F				
G				

PERCENT OF BILLS COLLECTED (1)				
Service Center	Current Bills		Past Due Bills	
	This Month	Year to Date	This Month	Year to Date
Total				

Note: (1) Percent of Bills Collected =  $\frac{\text{Number of bills collected}}{\text{Bills on hand beginning of period} + \text{Bills received during period}}$

SERVICE CENTER  
COMPARISON REPORT

Month of \_\_\_\_\_

BACKLOG (End of Month)			
Service Center	Connections	Turn-offs	Meter Replacements

ACCOUNTS RECEIVABLE

PURPOSE:

To encourage greater effort to collect  
outstanding accounts

To provide information for capital planning

SCOPE:

One report for the utility

PREPARED BY:

Customer Accounts

DISTRIBUTED TO:

Chairman; Vice Chairman, Finance; General  
Supervisor, Central Accounting; General Manager,  
Branches; Branch Managers

FREQUENCY:

Monthly. Deliver by 15th of following month.

RETENTION:

To end of year. Retain December report for  
five years

DATA SOURCES:

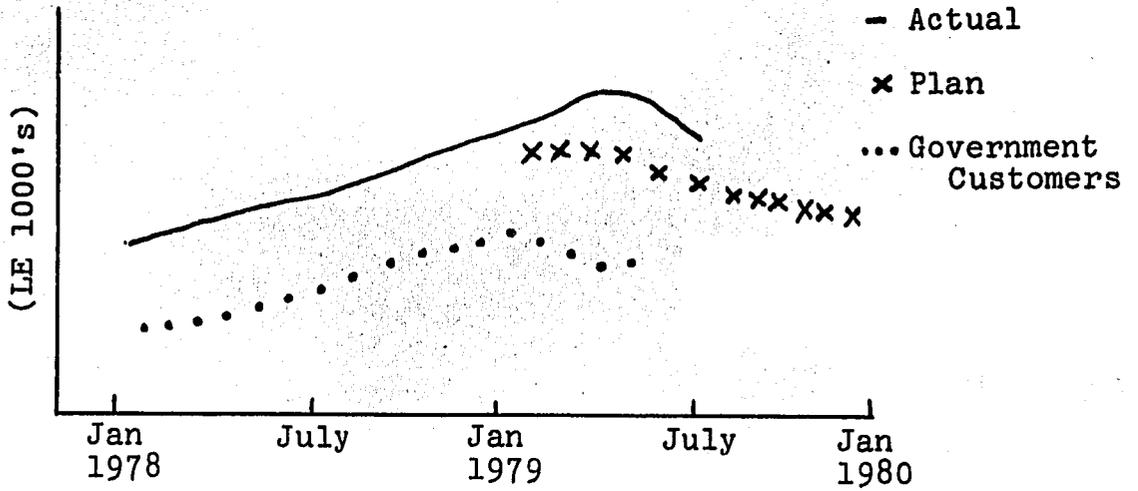
Customer records

ACCOUNTS RECEIVABLE

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

VALUE OF RECEIVABLES



MONTHS RECEIVABLE<sup>(1)</sup>

Type of Customer	Year Ago This Month	End of Last Year	End of This Month
General			
Industrial			
Government			
Other			
Total			

Note: (1) Months Receivable =  $\frac{\text{Value of Receivables at end of month}}{\text{Avg. Monthly Billings-Last three months}}$

AGE OF RECEIVABLES

Month of \_\_\_\_\_

Type of Customer	Value of Receivables at the End of the Month				
	Less than 30 days old	30-60 days old	60 days -One year	More than One year old	Total
General					
Industrial					
Government					
Others					
Total - This month					
Budget - this Month					
Last Month					
End of last year					

ACCOUNTS RECEIVABLE

LARGE RECEIVABLES

Account Name (1)	Value (LE)	Age Range (Months)
1		
2		
3		
4		
5		
6		
100		
Total		
Percent of Total Receivables		

Note: (1) List the 100 accounts having the largest balances receivable.

SERVICE CENTER  
MONTHLY REPORT

PURPOSE: To evaluate the performance of major functions by individual customer service centers

SCOPE: one report for each Customer Service Center

PREPARED BY: Customer Service Center Manager

DISTRIBUTED TO: Vice Chairman, Customer Service;  
General Manager, Customer Service Centers

FREQUENCY: Monthly. Deliver by the 10th of the following month.

RETENTION: Retain for two years.

DATA SOURCE: Summary Collection Lists, Cashier's Reconciliation Sheet, Past due bills, Work orders, Customer complaint forms

SERVICE CENTER  
MONTHLY REPORT

Center \_\_\_\_\_ Month of \_\_\_\_\_

Responsible Manager \_\_\_\_\_ Report Date \_\_\_\_\_

METER READING

Customer Type	System Total	Number of Meters			
		Number Read		Estimated Readings	Rechecked
		Number	Percent Of Total		
General					
Industrial					
Government					
Harbor					
Others					
Total Potable Water					
Irrigation					
Total					

COLLECTIONS - CURRENT BILLS

Customer Type	Value of Bills		Number of Bills	
	Received	Collected	Received	Collected
General				
Industrial				
Government				
Harbor				
Others				
Total Potable Water				
Irrigation				
Total				

SERVICE CENTER  
MONTHLY REPORT

Responsible Manager \_\_\_\_\_ Report Date \_\_\_\_\_  
Center \_\_\_\_\_ Month of \_\_\_\_\_

COLLECTIONS - PAST DUE

Customer Type	Bills on Hand <sup>(1)</sup>		Bills Collected	
	Number	Value	Number	Value
General				
Industrial				
Government				
Harbor				
Others				
Total Potable Water				
Irrigation				
Total				

Note: (1) At beginning of month.

CONNECTIONS

Customer Type	Number of New Applications	Number Completed	Backlog
General			
Industrial			
Government			
Harbor			
Others			
Total Potable Water			
Irrigation			
Total			

SERVICE CENTER  
MONTHLY REPORT

Responsible Manager \_\_\_\_\_  
Center \_\_\_\_\_

Report Date \_\_\_\_\_  
Month of \_\_\_\_\_

METER MAINTENANCE

Type of Customer	Turn-offs			Replacements		
	Orders	Done	Back-log	Orders	Done	Back-log
General						
Industrial						
Government						
Others						
Total						

CUSTOMER COMPLAINTS

Cause of Complaint	Year to Date	This Month	Number Investigated	Back-log
Billing				
Leaks - Private property				
- Public property				
Street repair				
Low pressure				
Water quality				
Connections				
Others				
Total				

SERVICE CENTER  
MONTHLY REPORT

Responsible Manager \_\_\_\_\_

Report Date \_\_\_\_\_

Center \_\_\_\_\_

Month of \_\_\_\_\_

LARGE PAST DUE ACCOUNTS(1)

Name of Customer	Customer Type	Amount Past Due	Age Range (months)	Off/On(2)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Note: (1) List the 20 largest past due accounts.  
(2) Indicate whether connection is off or on.

MATERIALS MANAGEMENT  
MONTHLY REPORT

PURPOSE: To permit determination of the proper level of inventories

SCOPE: One report for the utility

PREPARED BY: Materials Control

DISTRIBUTED TO: Management Committee; General Supervisor, Budget and Cost; General Manager, Materials Management; General Supervisor, Purchasing

FREQUENCY: Monthly. Deliver by the 10th of the following month.

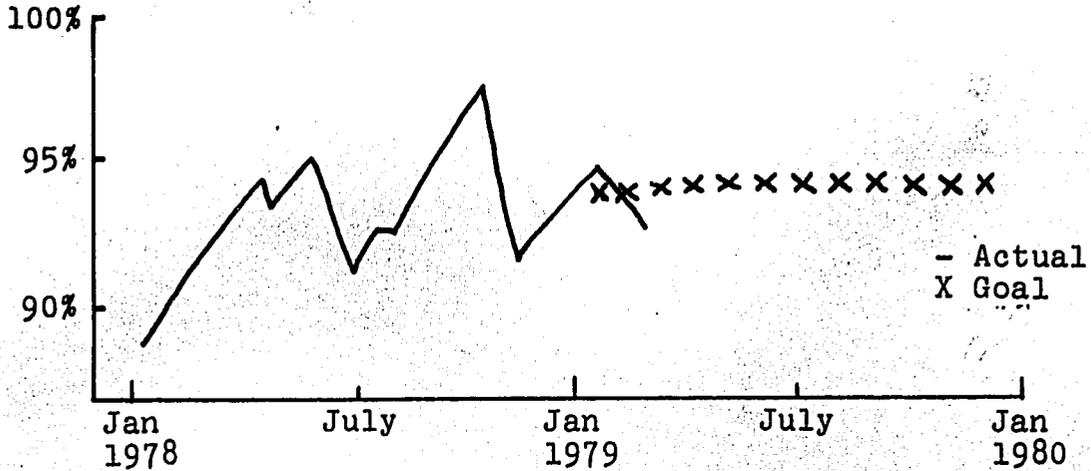
RETENTION: One year

DATA SOURCES: Materials Requisitions, Commodity Usage Report, Purchasing Journals

MATERIALS MANAGEMENT  
MONTHLY REPORT

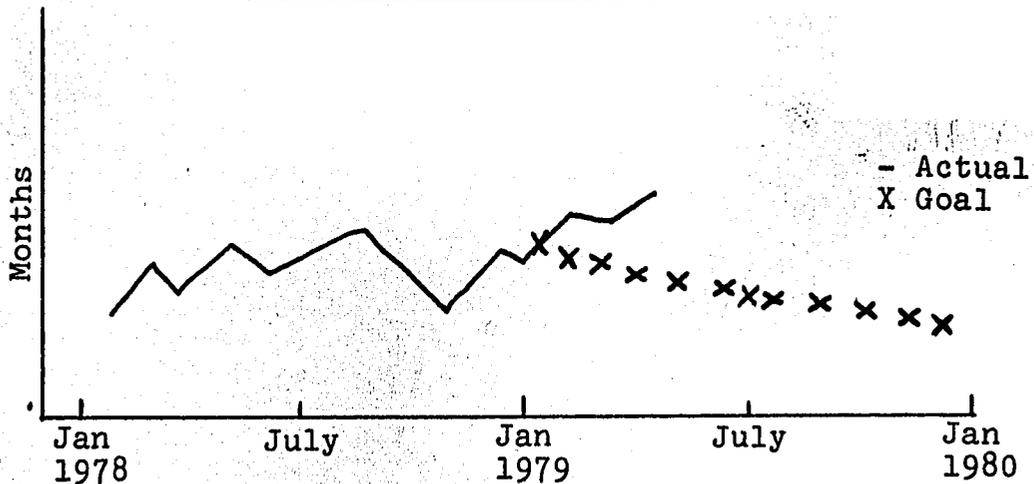
Month of \_\_\_\_\_ Report Date \_\_\_\_\_

PERCENT OF STOCK REQUESTS FILLED(1)



Note: (1) Each item code on a purchase requisition should be regarded as a request.

MONTHS INVENTORY ON HAND(1)



Note: (1) Months Inventory on Hand =  $\left( \frac{\text{Value at end of month}}{\text{Budgeted use for the year}} \right) \times (12 \text{ Months})$

MATERIALS MANAGEMENT  
MONTHLY REPORT

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

<u>PURCHASING</u>				
	Number of Purchase Orders		Estimated Value of P.O's	
	Domestic	Foreign		
Prepared this Month				
Completed this Month				
Open at month's end				
<u>STORES</u>				
	Quantity on Hand at End of Month	Months Inventory on Hand(1)		
		Last Month	This Month	
			Actual	Plan
Chemicals - Total(kgs.)				
Alum (kgs.)				
Chlorine (kgs.)				
Nalco (kgs.)				
Fuels - Total(liters)				
Diesel (liters)				
Solar (liters)				
Office Supplies (LE)				
Other Commodities (LE)				
Spare Parts (LE)				
Engine parts (LE)				
Pump parts (LE)				
Generator parts (LE)				
Pipe ≥ 40 cm (meters)				
< 40 cm (meters)				
Others (LE)				

Note: (1) Months Inventory on Hand = Value on hand at end of month  
Budgeted use next month

CRITICAL STOCKOUTS

PURPOSE: To encourage close attention to critical stockouts

SCOPE: One report for the entire utility

PREPARED BY: General Manager, Materials Management

DISTRIBUTED TO: Management Committee; General Manager, Production; Plant Managers; Branch Managers; Store Managers; Purchasing

FREQUENCY: Weekly

RETENTION: Two weeks

DATA SOURCES: Purchase requisitions

REMARKS: The General Manager, Materials Management should select the items he considers most critical. No more than ten items should be selected.

CRITICAL STOCKOUTS

Week Ending \_\_\_\_\_

Line	Stock Number	Item Description	Quantity Required	Stockout Date	Expected Delivery Date	Remarks
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

PERSONNEL MONTHLY REPORT

PURPOSE: To encourage more efficient use of personnel  
To provide feedback on personnel planning estimates

SCOPE: One report for the total utility

PREPARED BY: General Manager, Personnel or his designee

DISTRIBUTED TO: Management Committee

FREQUENCY: Monthly. To be delivered by the 10th of the following month.

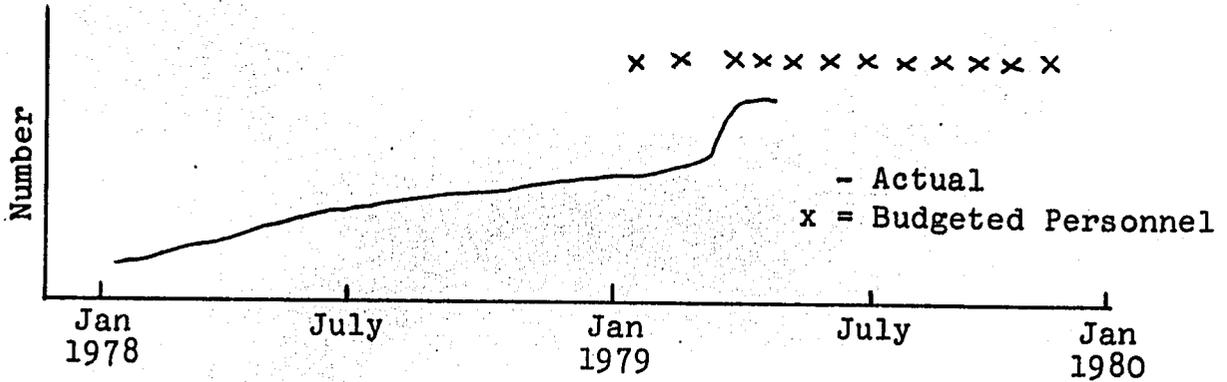
RETENTION: One year. Retain December report for five years.

DATA SOURCES: Payroll records, Budget

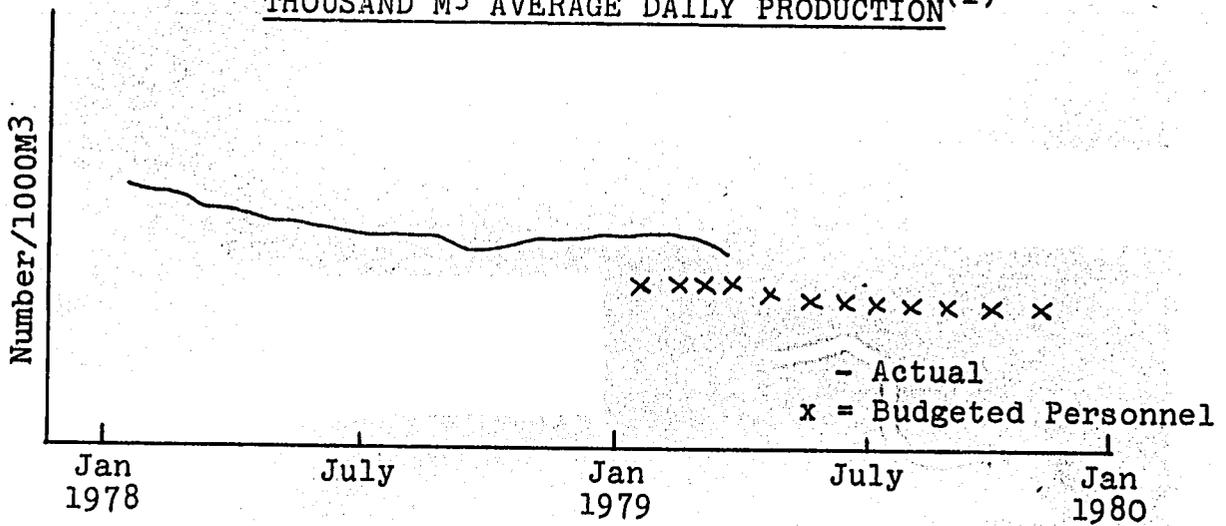
PERSONNEL MONTHLY REPORT

Month of \_\_\_\_\_ Report Date \_\_\_\_\_

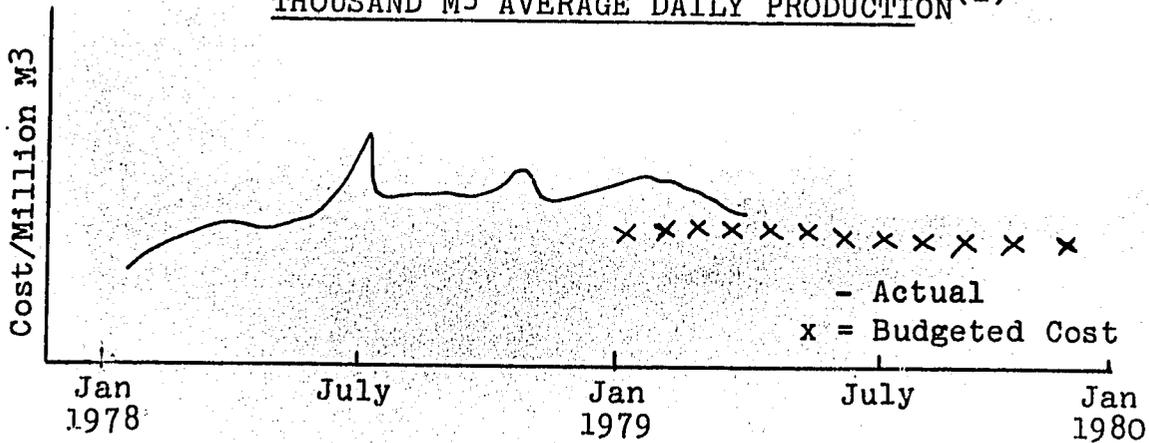
NUMBER OF PERSONNEL IN UTILITY



NUMBER OF PERSONNEL PER THOUSAND M<sup>3</sup> AVERAGE DAILY PRODUCTION (1)



PERSONNEL COST PER THOUSAND M<sup>3</sup> AVERAGE DAILY PRODUCTION (1)



Note: (1) Sewerage utilities should base the calculation on average daily collection.

PERSONNEL MONTHLY REPORT

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

NUMBER OF PERSONNEL BY DEPARTMENT

	Number of Personnel	
	Actual	Budget
Chairman's Office		
Administration		
Finance		
Customer Service		
Operations		
Plants		
Distribution(1)		
Other		
Technical		

Note: (1) Sewage collection in sewerage companies.

PERSONNEL TURNOVER

Department	Last Annual Performance Evaluation						Total	
	Excellent		Satisfactory		Weak		Actual	Rate
	Actual	Rate <sup>(1)</sup>	Actual	Rate <sup>(1)</sup>	Actual	Rate <sup>(1)</sup>		
Chairman's Office								
Administration								
Finance								
Customer Service								
Operations								
Plants (2)								
Distribution								
Others								
Technical								
Total								
Plan								

Note: (1) Annual Rate =  $\left(\frac{\text{Total Separations for last three months}}{\text{Total Personnel}}\right) \times (4)$

(2) Sewage collection in sewerage companies.

PERSONNEL MONTHLY REPORT

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

TRAINING PROGRAMS

Course Title	Number of Participants	Number of Man hours

NUMBER OF PERSONNEL  
BY RESPONSIBILITY CENTER

PURPOSE: To provide the data managers need to develop their Manpower Utilization Reports

SCOPE: One report for each Responsibility Center

PREPARED BY: General Manager, Personnel or his designee

DISTRIBUTED TO: Each Responsibility Center Manager

FREQUENCY: Quarterly. Deliver by the 10th of the following month.

RETENTION: One year

DATA SOURCES: Payroll records, Budgets, Open Position List

NUMBER OF PERSONNEL  
BY RESPONSIBILITY CENTER

Responsibility Center \_\_\_\_\_ Date \_\_\_\_\_

Position	Actual Number of Personnel(1)				
	Managers	Foremen	Others	Total	Budget
<u>Specialists</u> Commercial Treatment Mechanical/ Electrical Civil					
<u>Office/Clerical</u> Secretaries/ Typists Clerks Meter Readers, Collectors and Cashiers					
<u>Skilled Technicians</u> Laboratory Plumbers/Fitters Mechanics Machinists Welders Electricians Master Builders Operators Repairmen Draftsmen Construction Foremen					
<u>Others</u> Drivers Guards Laborers Messengers					

Note: (1) Excludes personnel on military or unpaid leave.

SAFETY REPORT

PURPOSE: To encourage managers to be safety conscious.  
To reduce time lost due to accidents.

SCOPE: One report for the entire utility

PREPARED BY: Supervisor, Safety Program

DISTRIBUTED TO: One copy to each location

FREQUENCY: Monthly. Deliver by the 10th of the following month.

RETENTION: One year. Retain December report for five years.

DATA SOURCES: Accident Reports, Time Cards

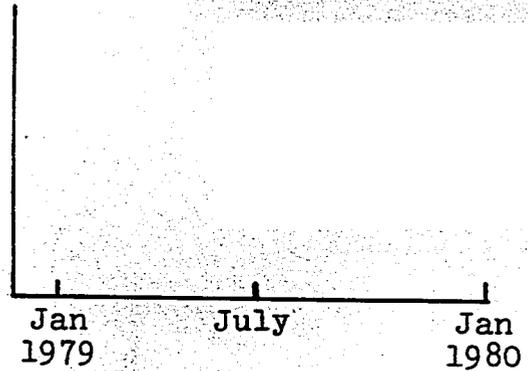
REMARKS: Lost Time Accidents =  
Accidents in which the person was unable to perform his normal work the next day.  
  
Days Lost = Number of working days after the date of the accident during which the person was unable to perform his normal work.  
  
A death = 100 days lost.

SAFETY REPORT

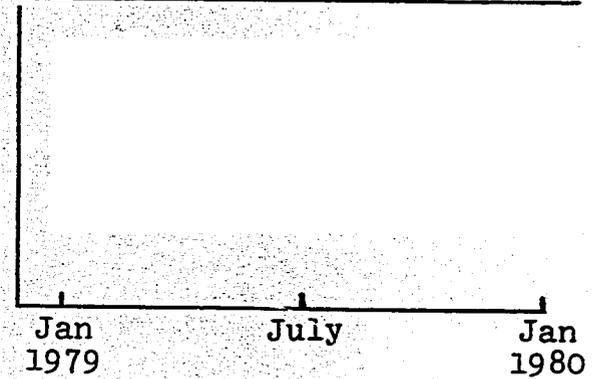
Month of \_\_\_\_\_

Report Date \_\_\_\_\_

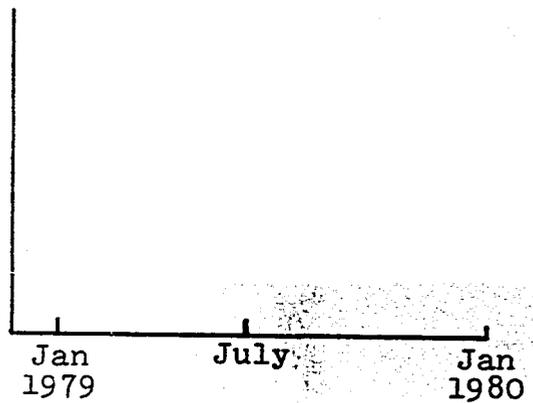
NUMBER OF ACCIDENTS REPORTED



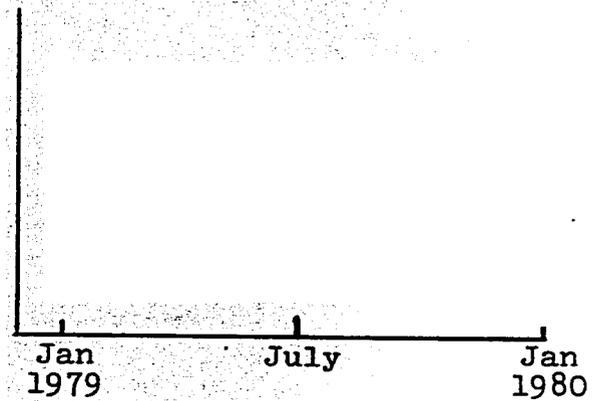
NUMBER OF LOST TIME ACCIDENTS



NUMBER OF MAN DAYS LOST ÷  
TOTAL MAN DAYS WORKED



NUMBER OF MAN HOURS IN SAFETY TRAINING



OPERATIONS CASH FLOW

PURPOSE: To provide information required for planning cash needs  
To encourage top management attention to cash usage

FORMAT: See Exhibit 3.8.

SCOPE: One report for the utility

PREPARED BY: General Supervisor, Treasury Department

DISTRIBUTED TO: Chairman;  
Vice Chairman, Customer Service;  
Vice Chairman, Finance

FREQUENCY: Monthly. Deliver by 5th of following month.

RETENTION: Three months

DATA SOURCES: Cash Receipts Journal  
Non-Cash Receipts Journal  
Bank Payments Journal  
Cash Payments Journal

CAPITAL PROJECTS CASH FLOW -  
LOCAL CURRENCY<sup>(1)</sup>

PURPOSE: To provide information for planning cash needs.  
To encourage top management attention to cash flow

FORMAT: See Exhibit 3.9.

SCOPE: One report for the utility

PREPARED BY: General Supervisor, Treasury Department

DISTRIBUTED TO: Chairman  
Vice Chairman, Technical  
Vice Chairman, Finance

FREQUENCY: Monthly. Deliver by the 5th of the following month.

RETENTION: Three months

DATA SOURCES: Bank Payments Journal  
Cash Payments Journal  
Bank Receipts Journal  
Purchase Order Log

Note: (1) The Capital Projects Cash Flow - Foreign Currency report is identical except it references only foreign currency.

FINANCIAL STATEMENTS

PURPOSE: To provide a financial overview of the utility to the State and to top management of the utility

FORMAT: As specified by the State. See Appendix 5 for discussion of recommended formats.

SCOPE: One report for the entire utility

PREPARED BY: General Supervisor, Central Accounts

DISTRIBUTED TO: State Ministries, Governorate, Utility Board of Directors, Management Committee

FREQUENCY: Quarterly. Deliver by the end of the following month.

RETENTION: Indefinite

DATA SOURCE: General Ledger

TOP MANAGEMENT PROJECT SUMMARY

PURPOSE: To permit top management to evaluate progress on projects

FORMAT: See Exhibit 2.3

SCOPE: One report for the entire utility

PREPARED BY: Asset Account

DISTRIBUTED TO: Management Committee;  
all project managers

FREQUENCY: Monthly. To be delivered by the 20th of the following month.

RETENTION: To end of year. Retain December statement for five years.

DATA SOURCES: Project Task Analysis Reports  
Capital Expenditures Journal  
Fixed Assets Under Construction Ledger

BUDGET VERSUS ACTUAL EXPENSES

PURPOSE: To develop cost conscious managers  
To attain greater control of expenses

FORMAT: See Exhibits 3.5 and 3.6.

SCOPE: One report for each Responsibility Center

PREPARED BY: Budget and Cost Department

DISTRIBUTED TO: Manager of the Responsibility Center and his  
immediate supervisor

FREQUENCY: Monthly. Deliver by the 15th of the  
following month.

RETENTION: To end of year. Retain December statement  
for five years.

DATA SOURCES: Accounting books

BUDGET VERSUS ACTUAL REVENUES AND RECEIPTS

PURPOSE: To provide closer control over revenues and receipts  
To provide information for planning

FORMAT: See Exhibit 3.7.

SCOPE: One report for the utility  
One report for each Customer Service Center

PREPARED BY: Billing and Customer Accounts Department

DISTRIBUTED TO: Utility Report - Management Committee;  
Branch Reports - Vice Chairman, Customer Service;  
General Manager, Service Centers;  
Service Center Managers

FREQUENCY: Monthly. Deliver by the 15th of the following month.

RETENTION: To end of year. Retain December statement to end of year.

DATA SOURCES: Accounting books

JOB ACCOUNTING REPORT

PURPOSE: To communicate job cost results to manager

SCOPE: One report for each open job order

PREPARED BY: Budget and Cost

DISTRIBUTED TO: Manager responsible for the job

FREQUENCY: Monthly. Deliver by the 20th of the following month.

RETENTION: Retain for three months.

DATA SOURCES: Reports from payroll and materials accounting

REMARKS: Job managers must be required to incorporate these results into the final summary of the job.

JOB ACCOUNTING REPORT

Month of \_\_\_\_\_

Responsible Manager \_\_\_\_\_ Date \_\_\_\_\_

Responsibility Center \_\_\_\_\_ Code \_\_\_\_\_

Job Number: \_\_\_\_\_

Job Title: \_\_\_\_\_

Expense Category	This Month	Year to Date	Job to Date	Estimated Job Cost
<u>Personnel (LE)</u>				
Salaries				
Overtime				
Benefits				
Total				
<u>Materials (LE)</u>				
Engine Parts				
Pump Parts				
Generator Parts				
Pipes				
Other				
Total				
<u>Other Expenses (LE)</u>				
<u>Total Expenses (LE)</u>				

DATA PROCESSING  
MONTHLY REPORT

PURPOSE: To encourage efficient use of data processing facilities.  
To monitor equipment performance.

SCOPE: One report covering the major activities of the Data Processing Department

PREPARED BY: Data Processing Manager

DISTRIBUTED TO: Vice Chairman, Finance; Manager, Customer Accounts; Manager, Compensation; Manager, Materials Control

FREQUENCY: Monthly. Deliver by the 10th of the following month.

RETENTION: One year

DATA SOURCES: Log books, work orders

DATA PROCESSING  
MONTHLY REPORT

Month \_\_\_\_\_

Report Date \_\_\_\_\_

Data Preparation

Application	Number of Records		Man-hours Used	Records per Man-hour
	Processed	In error		
Billing <sup>(1)</sup>	20,051	521	200	100.3

Machine Utilization

Machine/Application	Machine Hours	Number of		Remarks
		Runs	Reruns	
NCR 500 A <sup>(1)</sup>				
Billing	150	125	15	
Customer Accounts	140	65	5	
Payroll	15	3	0	
Routine Maintenance	50	-	-	
Unplanned Maintenance	10	-	-	
Idle Time	35	-	-	
NCR 500B	400	193	20	

Note: (1) Example.



COST VERSUS REVENUE PER  
THOUSAND M<sup>3</sup> OF AVERAGE DAILY PRODUCTION<sup>(1)</sup>

PURPOSE: To highlight the difference between cost and revenues of water sold  
To encourage greater cost consciousness among managers

SCOPE: One report for the entire utility

PREPARED BY: Manager, Management Services

DISTRIBUTED TO: All Responsibility Center Managers

FREQUENCY: Monthly. Distribute by the 25th of the following month.

RETENTION: To end of year. Retain December report for five years.

DATA SOURCES: Financial Statements  
Monthly Production Report

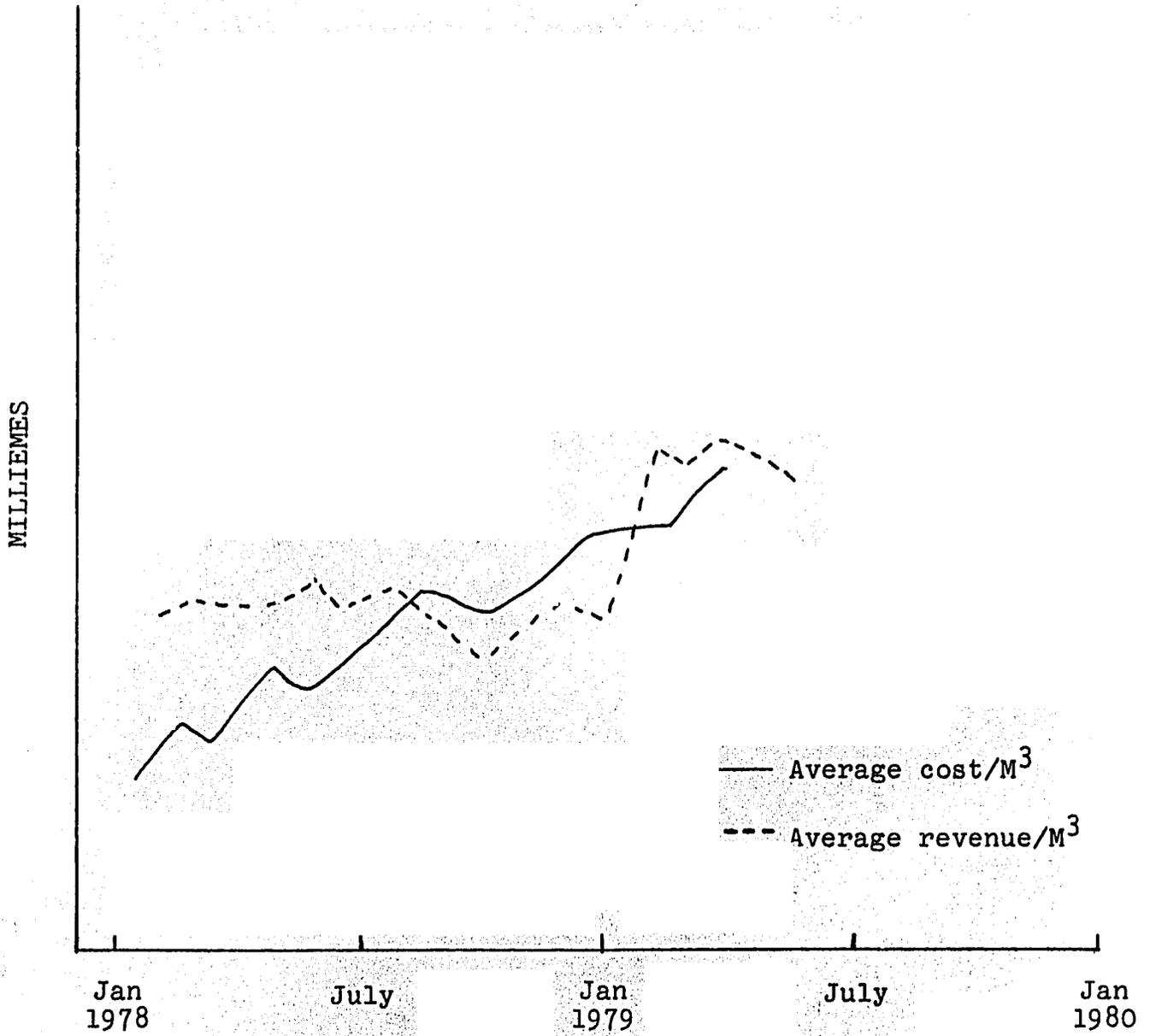
Note: (1) Sewerage utilities should calculate two ratios:

Total expenses of the utility less treatment expenses divided by total volume of sewage collected.

Treatment expenses divided by volume of sewage treated.

COST VERSUS REVENUE PER THOUSAND  
M<sup>3</sup> OF AVERAGE DAILY PRODUCTION

Month of \_\_\_\_\_ Report Date \_\_\_\_\_



WATER BILLED ÷ WATER PRODUCED

PURPOSE: To encourage accurate measurement and correct billing of water and elimination of leaks

SCOPE: One report for the utility

PREPARED BY: General Manager, Management Services

DISTRIBUTED TO: Management Committee;  
General Manager, Plant Operations;  
General Manager, Distribution;  
General Manager, Branch Operations;  
Plant managers; Service Center managers;  
Branch managers

FREQUENCY: Monthly. Deliver by the 20th of the following month

RETENTION: Two months. Retain December report for five years

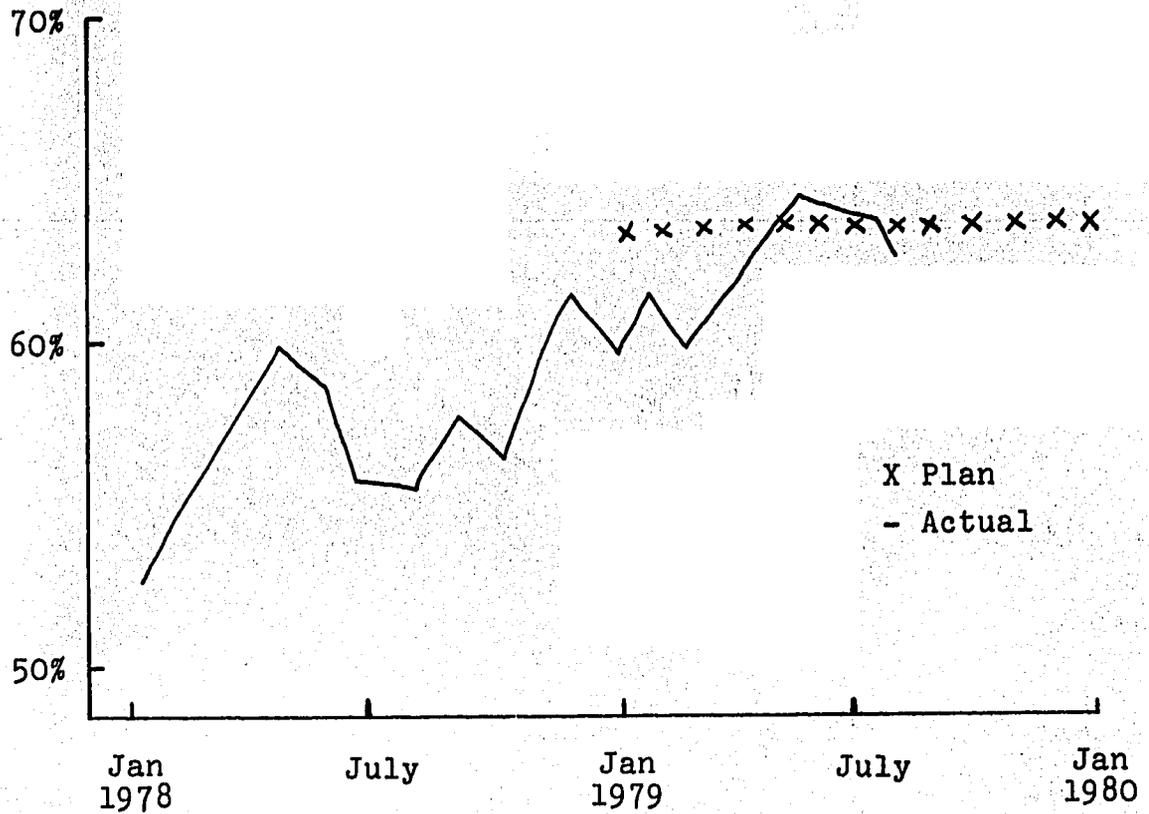
DATA SOURCES: Monthly Production Report  
Customer Service Summary Report

WATER BILLED ÷ WATER PRODUCED

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

WATER BILLED AS A PERCENT  
OF WATER PRODUCED



BOARD OF DIRECTORS' ANNUAL REPORT

PURPOSE: To provide a comprehensive review of the state of affairs of the utility for the year

SCOPE: One report for the utility

PREPARED BY: General Manager, Management Services; approved first by the Chairman and then by the Board of Directors

DISTRIBUTED TO: As determined by the Chairman

FREQUENCY: Annual. To be delivered by March 15th of the following year.

DATA SOURCES: Key Indicator Reports

BOARD OF DIRECTORS' ANNUAL REPORT

RECOMMENDED TABLE OF CONTENTS

1. Chairman's Review of events of the year
2. Operating Highlights (Graphical presentation preferred):
  - Water production (sewage collected) by year for the last five years
  - Revenues by year for the last five years
  - Operating expense by year for the last five years
  - Capital expenditures by year for the last five years
  - Personnel levels by year for the last five years
  - Number of customers by year for the last five years
  - Installed capacity at end of year by year for the last five years
  - Number of days water production exceeded installed capacity last year
  - Cost per cubic meter of water (sewage collected) by year for the last five years
  - Ratio of water produced to water billed<sup>(1)</sup>
  - Water produced by type of water this year<sup>(1)</sup>
  - Water billed by type of customer this year<sup>(1)</sup>  
(Value and Volume)
3. Financial Statements:
  - Profit and Loss Statement (compared to budget)
  - Balance sheet
  - Sources and Uses of Funds
  - Value of inventories by type
  - Accounts receivable by type of customer
  - Statement of loans outstanding and associated debt service expenditures
  - Principal expenses by item (e.g. alum, chlorine, electricity, diesel fuel)

Note: (1) For water utilities only.

BOARD OF DIRECTORS' ANNUAL REPORT  
RECOMMENDED TABLE OF CONTENTS

4. Level of service:

- Number of new connections by year for the last five years
- Kilometers of new mains laid
- Kilometers of replacement mains laid
- Number of water meters replaced<sup>(1)</sup>
- Water produced by quality class<sup>(1)</sup>
- Percent of sewage receiving primary and secondary treatment by year for the last five years<sup>(2)</sup>.
- Volume of water produced above and below minimum pressure<sup>(1)</sup>.

Notes: (1) For water utilities only.  
(2) For sewerage utilities only.

PER CAPITA DEMAND

PURPOSE: To provide an analysis for planning consumption

SCOPE: One report for the utility

PREPARED BY: General Manager, Management Services

DISTRIBUTED TO: Management Committee, Budget and Cost,  
Long-Range Planning Manager

FREQUENCY: Once each year

RETENTION: One year

DATA SOURCES: Central Agency for Mobilization and  
Statistics; Other utility reports

REMARKS: Each year the list of years should be revised  
to show five years of history and projected  
demand for the next ten years.

PER CAPITA DEMAND

Year	Estimated Population (1) (1,000's)	Estimated Consumption	
		Potable Water (1,000M <sup>3</sup> )	Per Capita (M <sup>3</sup> )
1974			
1975			
1976			
1977			
1978			
1979			
1980			
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			

Note: (1) As estimated by Central Agency for Mobilization and Statistics.

ESTIMATED TOTAL CONSUMPTION

Service Area	1978	1979	1980	1981	1982	1983	1984
Area 1							
Area 2							
Area 3							
Area 8							
Total							

MANPOWER UTILIZATION

PURPOSE: To encourage managers to use people efficiently  
To keep managers up-to-date on the number of people working under their supervision

SCOPE: One report for each Responsibility Center

PREPARED BY: Responsibility Center Manager

DISTRIBUTED TO: Next two higher levels of management above the Responsibility Center Manager;  
Personnel Department

FREQUENCY: Monthly. To be completed by the 15th of each month.

DATA SOURCES: Number of Personnel by responsibility Center  
Job Analysis Reports  
Monthly Plant Summary Report  
Hours of Non-Functioning Class A Equipment

REMARKS: The efficiency measures shown on the format are those that would appear on a water treatment plant report. Other departments would use different measures of efficiency.

MANPOWER UTILIZATION

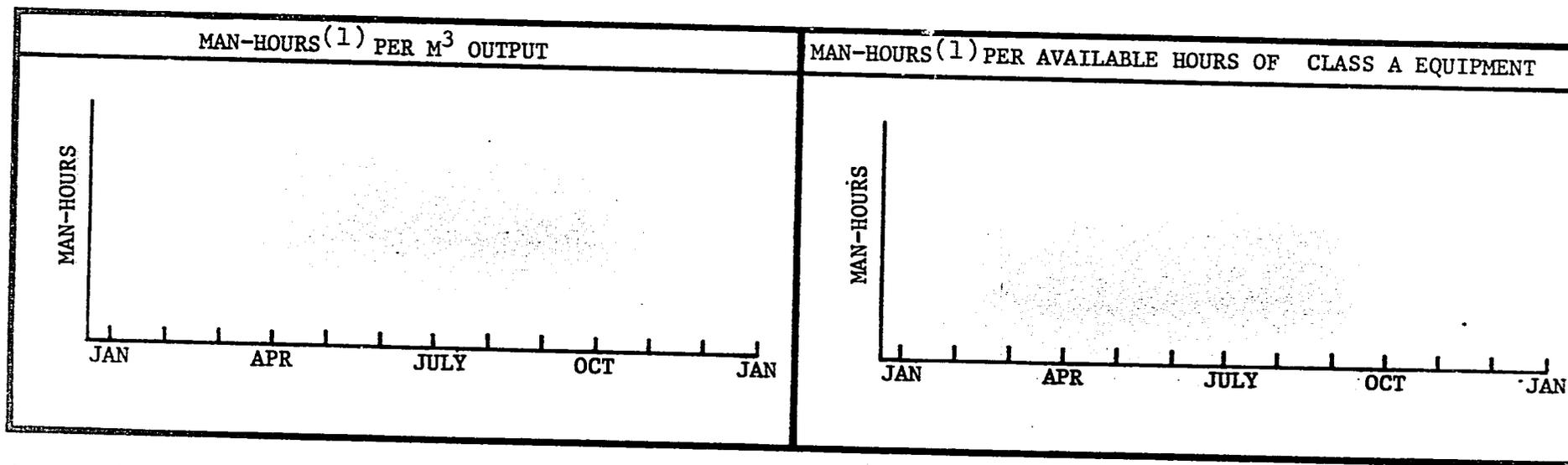
Plant \_\_\_\_\_

Responsible Manager \_\_\_\_\_

Month of \_\_\_\_\_

Report Date \_\_\_\_\_

	END OF MONTH POSITION							
	THIS MONTH				LAST MONTH			
	PERMANENT	TEMPORARY (1)	TOTAL	UNFILLED	PERMANENT	TEMPORARY (1)	TOTAL	UNFILLED
MANAGERIAL AND SUPERVISORY								
EMPLOYEES								
WORKERS								
TOTAL								



Note: (1) Includes contract labor