	Metropolitan Cebu Water District Quality Management System Procedures Manual		Index No.	OP-WQC/WST-001
			Page No.	1 of 2
	Section		Issue No.	1
	Subject	Water Sampling of Reservoirs	Revision No.	0
		Effective Date	Jan 01, 01	

1.0 OBJECTIVE:

To establish and implement the standard procedures in water sampling at reservoirs.

2.0 SCOPE:

This limits to the water sampling activity intended for reservoir only.


3.0 DEFINITION OF TERMS:

Reservoir Sampling Point - this refers to a faucet or a valve connecting from the discharge pipeline of the reservoir, wherein water can be collected for sampling purposes.



Prepared: 
Date: 9/01/01

Reviewed: 
Date: 7/02/01

Approved: 
Date:



Metropolitan Cebu Water District
**Quality Management System
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Index No. OP-WQC / WST - 001

Page No. 2 of 2

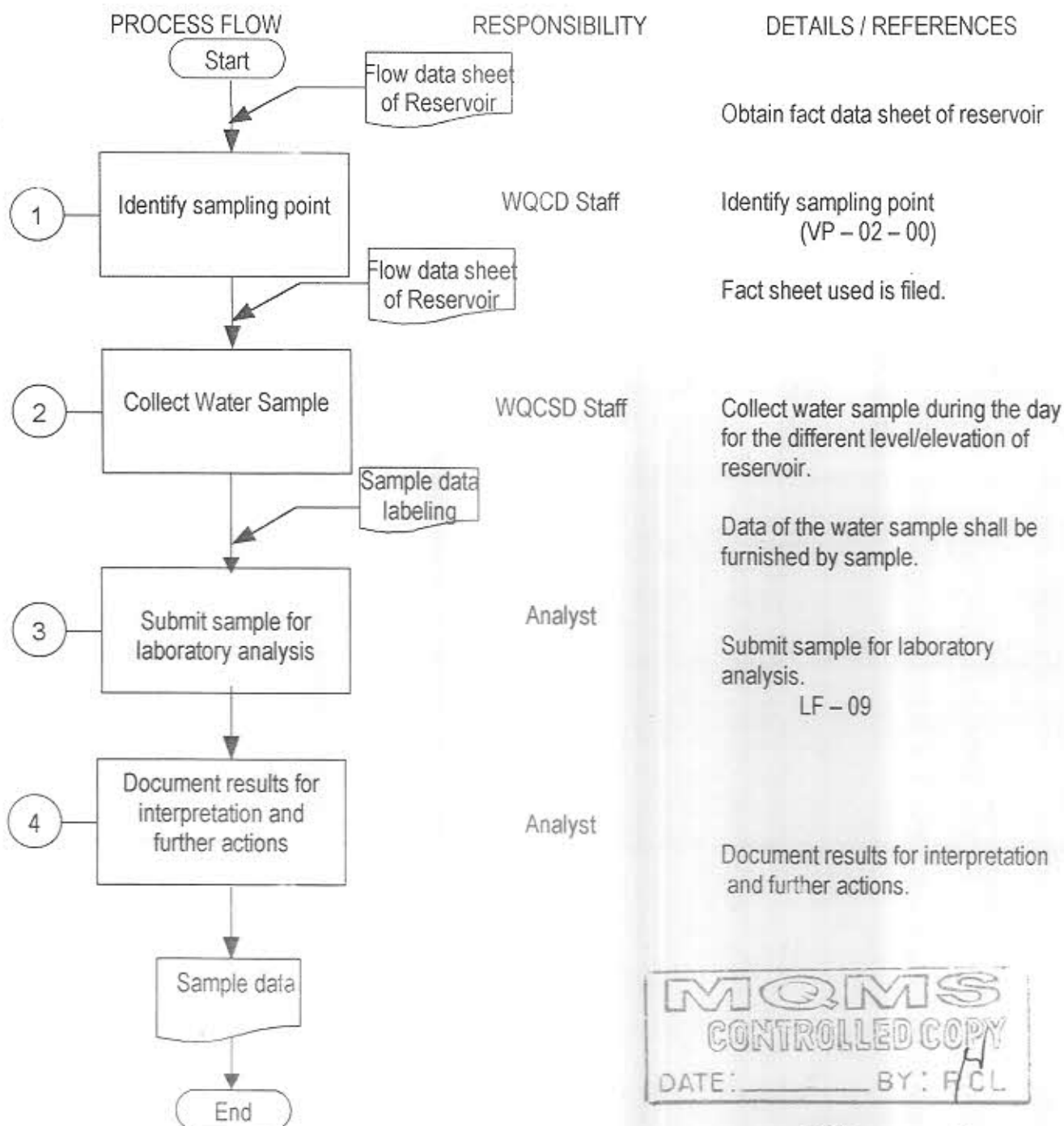
Issue No. 1

Revision No. 0

Effective Date Jan. 01, 01

Section *Water Storage*
 Subject **Water Sampling of Reservoirs**

4.0 PROCEDURE



Prepared: *[Signature]*
 Date: 6/28/01

Reviewed: *[Signature]*
 Date: 7/02/01

Approved: *[Signature]*
 Date:

Disinfecting Reservoirs



Metropolitan Cebu Water District Quality Management System Procedures Manual

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Page No. 1 of 3

Issue No. 1

Revision No. 0

Effective Date Jan 01,01

Section

Subject

Disinfecting Reservoirs

1.0 OBJECTIVE:

To establish and implement standard procedures in disinfecting constructed reservoirs.

2.0 SCOPE:

This applies to disinfection activity in all types of constructed reservoirs and tanks at MCWD.

3.0 DEFINITION OF TERMS:

Constructed Reservoir - refers to all large volume concrete water storages at MCWD

Scrub Solution - refers to a solution of solid chlorine in water that is at least 20 milligrams per liter, which is used in scrubbing the surfaces of concrete reservoir for disinfecting purposes.



Prepared:

Date:

Reviewed:

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Approved:

Date:

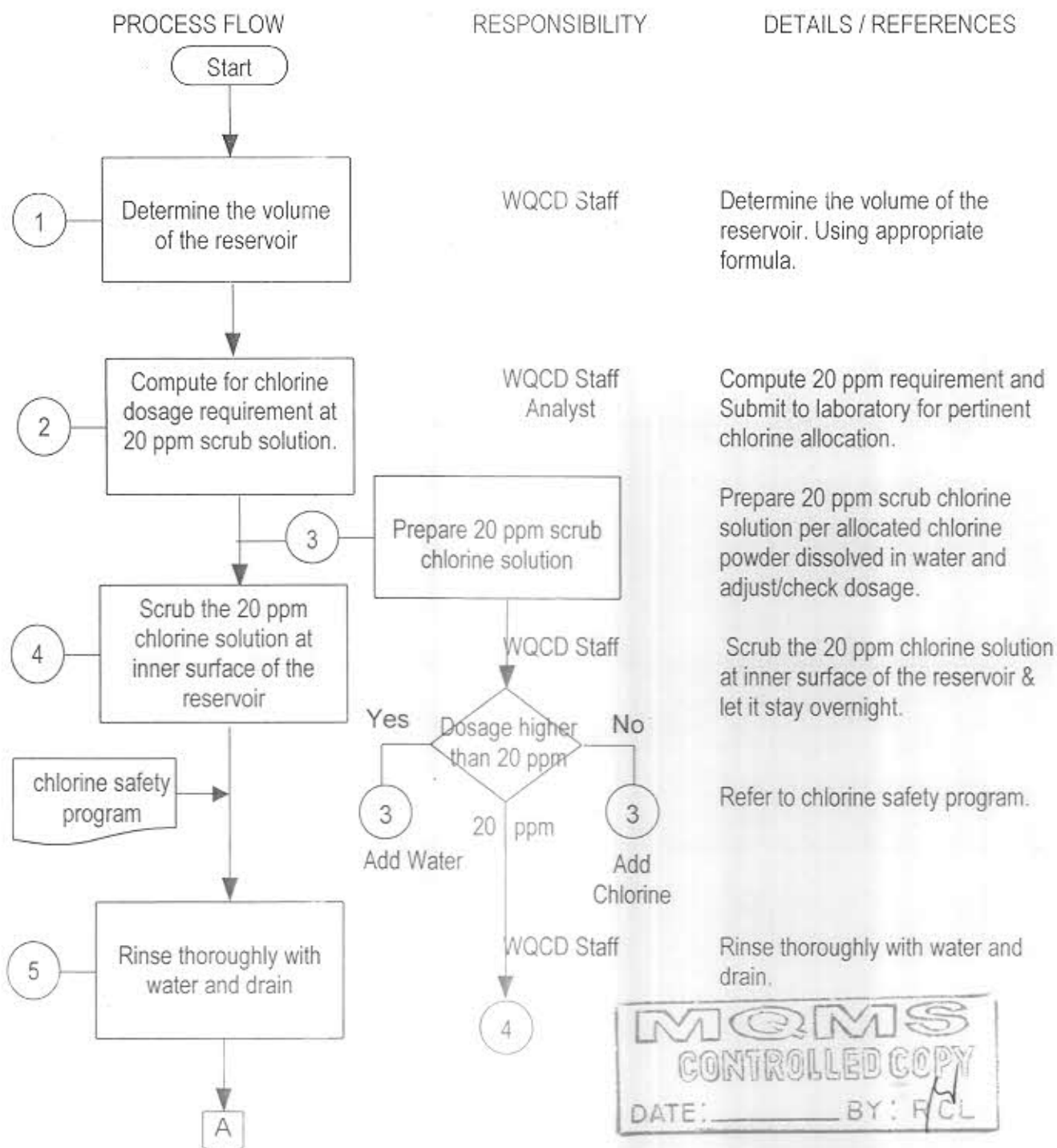
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7/02/01

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		Page No.	2 of 3
	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01,01

4.0 PROCEDURE


 Prepared:
Date:



6/20/01

 Reviewed:
Date:

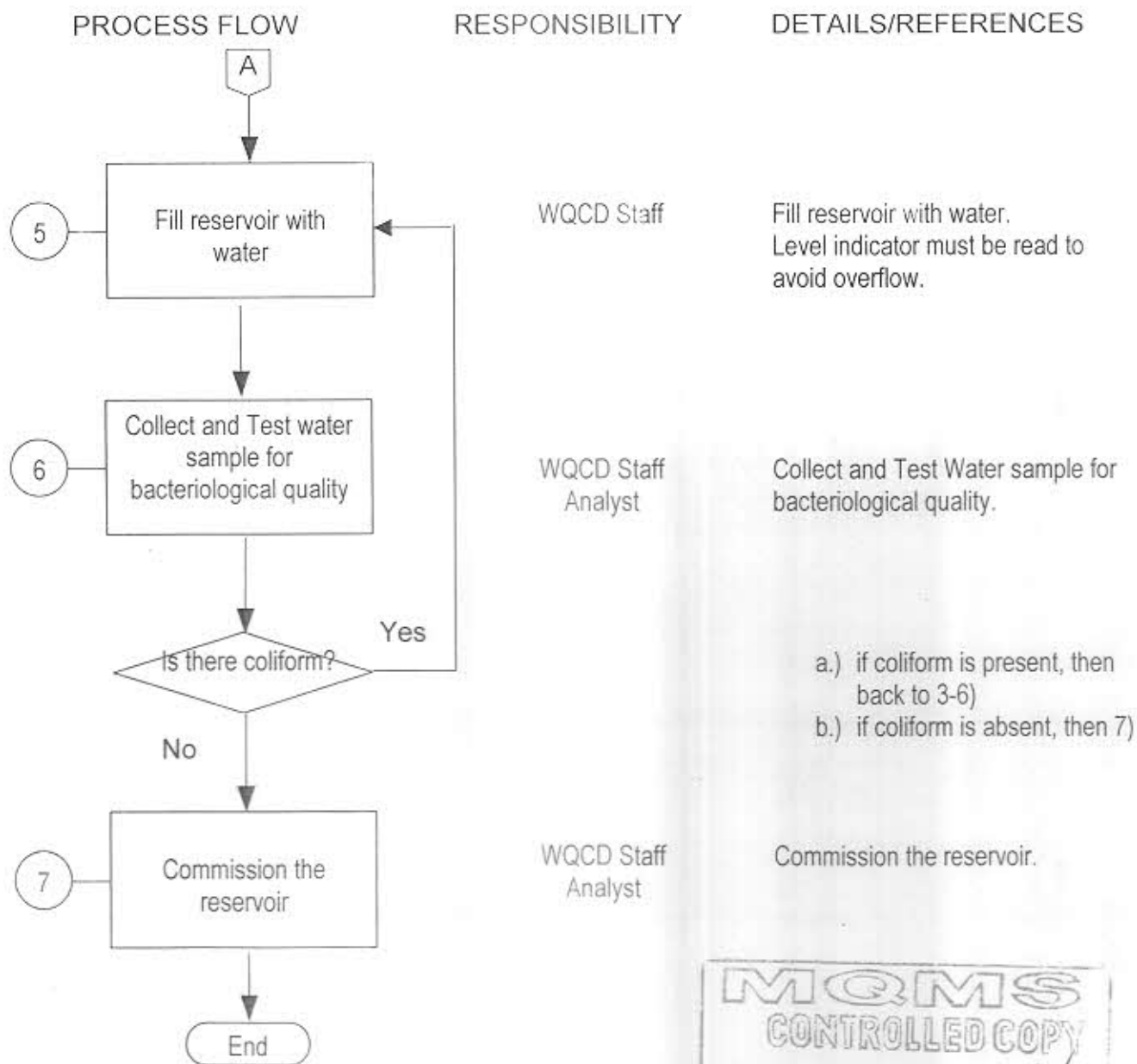

7/02/01

 Approved:
Date:



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		Page No.	3 of 3
	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01,01

4.0 PROCEDURE



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Date:

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Date:

Approved:
Date:

6/28/01

7/02/01



Metropolitan Cebu Water District
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Issue No.	1
Revision No.	0
Effective Date	Jan. 01,01

Section

Subject

**Biological Growth Assessment in Water
Tanks**

1.0 OBJECTIVE:

To develop and implement procedures on assessing the biological growth in all the water tanks of MCWD.

2.0 SCOPE:

This entails all biological growth assessment on all constructed water tanks of MCWD, including concreted reservoir, metal tanks, water truck tanks and chambers.

3.0 DEFINITION OF TERMS:

Algae Microscopy

– Refers to analytical method employed for the study and identification of different water algae exhibited by its morphological structures through a microscope.

Microscope

– Refers to a laboratory equipment that magnifies minute objects such as the living cell so that it can be readily seen by the naked human eye.

Morphology

– A branch in biology that studies the organization and structures of cells and tissues in living organism.

Water Tanks

– This refer to all constructed water tanks of MCWD including concrete reservoirs, metal, tanks, open tanks, water truck tanks and processed water chambers.

Note: Refer to procedure II P – 05 – 00 for the definition of algae growth.



Prepared

Date:

6/20/01

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Date:

7/02/01

Approved:

Date:

7/20/01



Metropolitan Cebu Water District
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Section

Subject

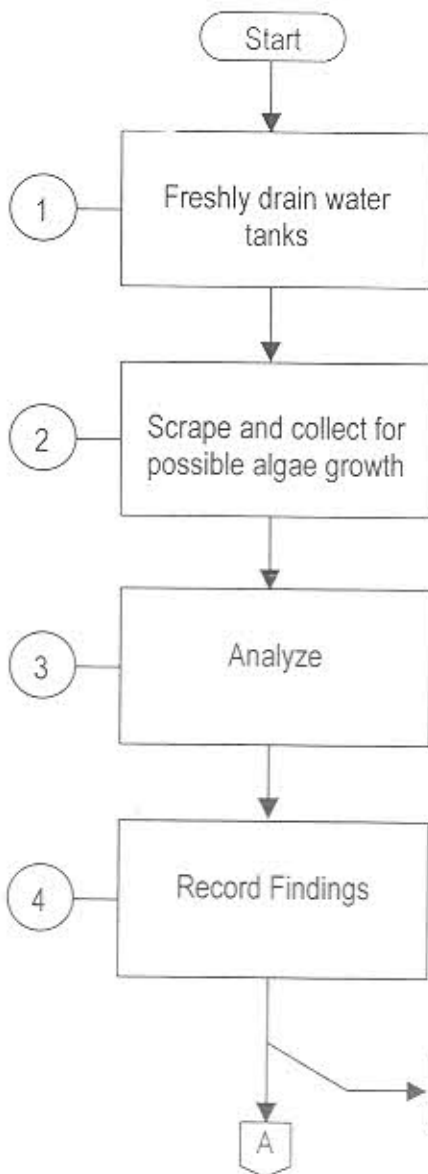
**Biological Growth Assessment in Water
 Tanks**

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS / REFERENCES



WQCD Staff

Freshly drain water tanks
 (VP - 02 - 00)

WQCD Staff

Scrape and collect for possible
 algae growth at strategic surface on
 the inner walls of water tanks.

Analyst

Perform laboratory procedures for
 microscopic identification of algae.
 (W.I. - 05 - L)

Analyst

Record findings/analytical results

Analytical data recorded in
 particular logbook.



Prepared:

Date:

[Signature]
 6/20/01

Reviewed:

Date:

[Signature]
 7/02/01

Approved:

Date:

[Signature]
 7/20/01



Metropolitan Cebu Water District
**Quality Management System
Procedures Manual**

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Issue No. 1

Revision No. 0

Effective Date Jan. 01,01

Section

Subject

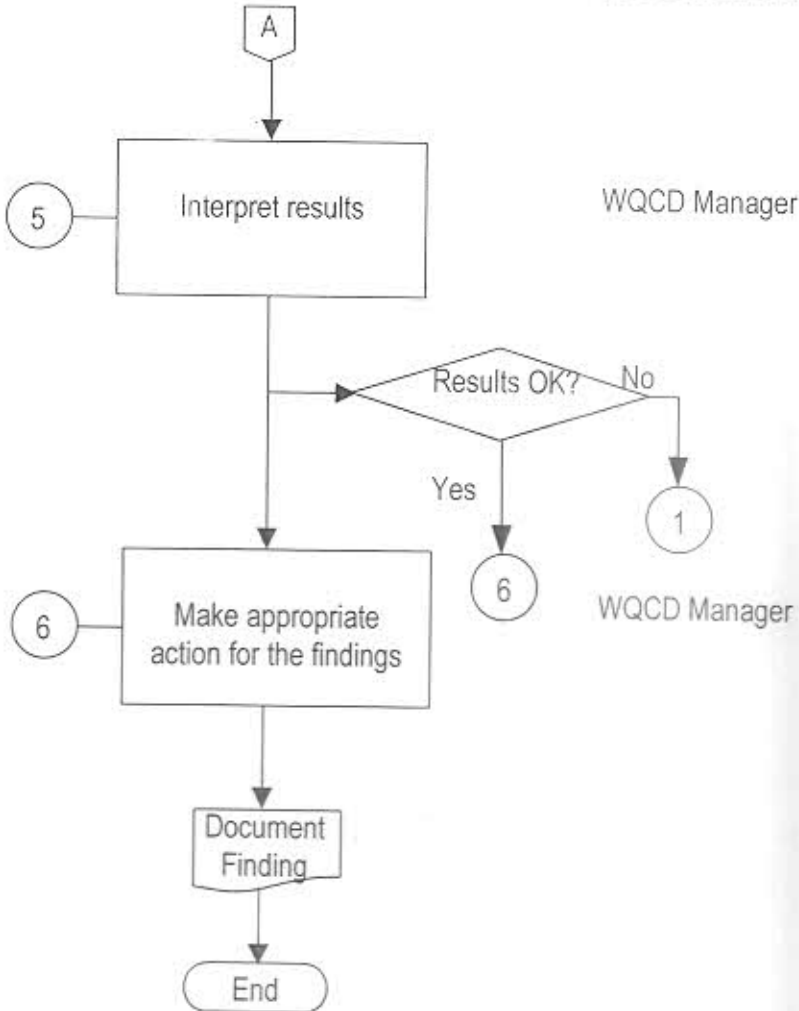
**Biological Growth Assessment in Water
Tanks**

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS / REFERENCES



Repeat (1) to (4)


Findings from analytical data is recorded and reported.



Prepared: *[Signature]*
Date: 6/28/01

Reviewed: *[Signature]*
Date: 7/02/01

Approved: *[Signature]*
Date: 7/20/01

	Metropolitan Cebu Water District Quality Management System Procedures Manual		Index No.	OP-CHL/WST-001
			Page No.	1 of 5
	Section		Issue No.	1
	Subject	Chlorination Procedure for Reservoir and Tanks	Revision No.	0
			Effective Date	Jan.01,01

1.0 OBJECTIVE:

To establish standard procedures in the design of automatic chlorination system for reservoirs and tanks and to maintain the chlorination system for effective treatment of stored water.

2.0 SCOPE:

This limits to the standard procedures made in the design of an automatic chlorination system that is applicable for reservoirs and tanks and the operation and maintenance activities entailed with this treatment facility.

3.0 DEFINITION OF TERMS:

- Elevation** - refers to the height of water level in the reservoir where it is stored.
- Flow Rate** - refers to the volume of water flowing out from the reservoir at a period of time.
- Personal Protective Equipment** - refers to safety devices and gadgets used during handling operation of chlorine gas (e.g. gas mask, respirator, gloves, etc.)
- Reservoir** - this refers to the concrete tank installation at major MCWD well fields (e.g. Casili Reservoir).
- Weighing Scale** - refers to a heavy-duty weighing device used in monitoring the weight of chlorine that is continuously dispensed from a 1 ton cylinder.



Prepared:

Date:

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6/28/01

Reviewed:


Date:

[Signature]
7/02/01

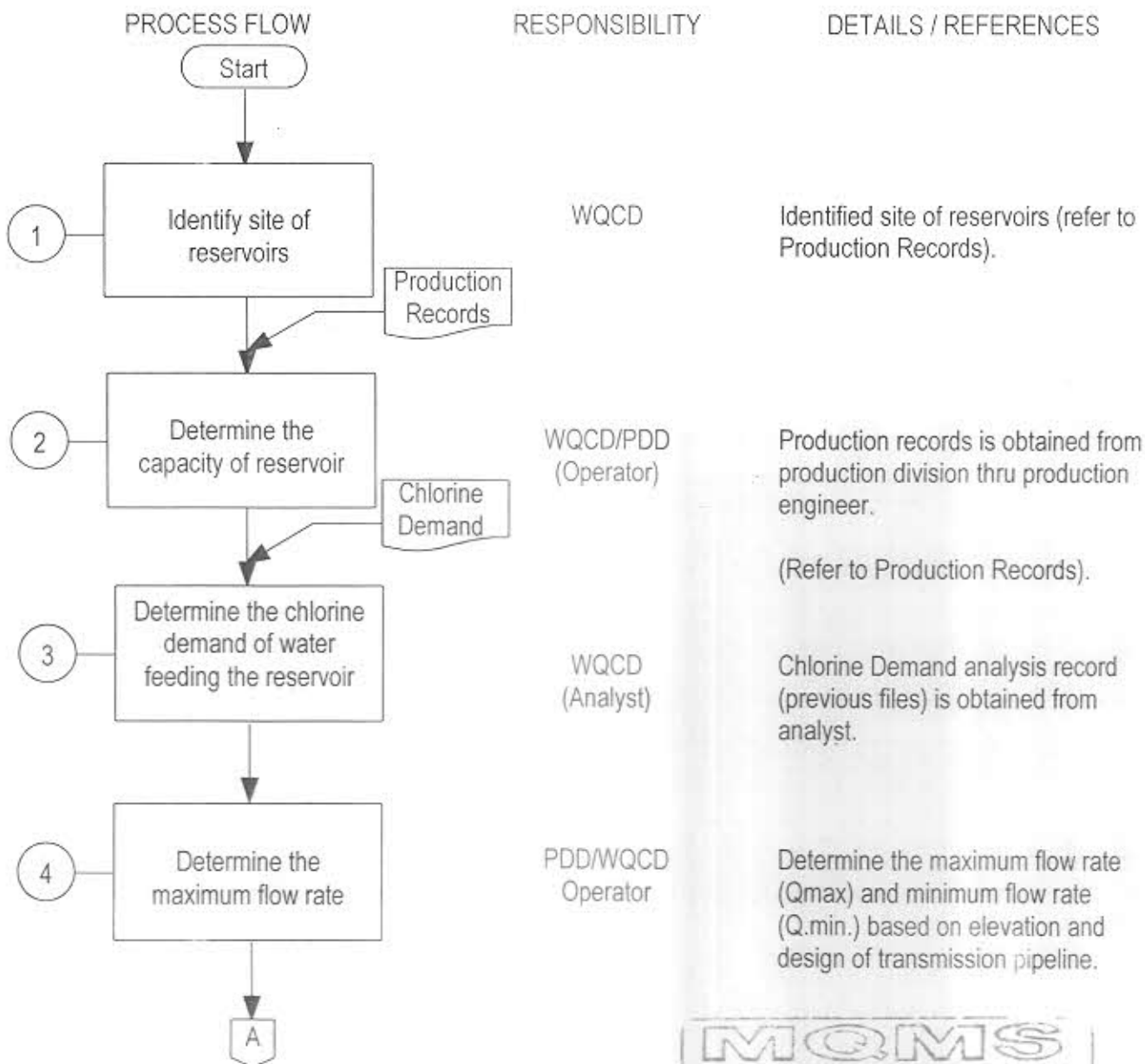
Approved:

Date:

[Signature]
7/20/01

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		Page No.	2 of 5
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	Subject	Revision No.	0
		Effective Date	Jan. 01,01


4.0 PROCEDURE



Prepared: *[Signature]*
Date: 6/28/01

Reviewed: *[Signature]*
Date: 7/02/01

Approved: *[Signature]*
Date: 7/20/01

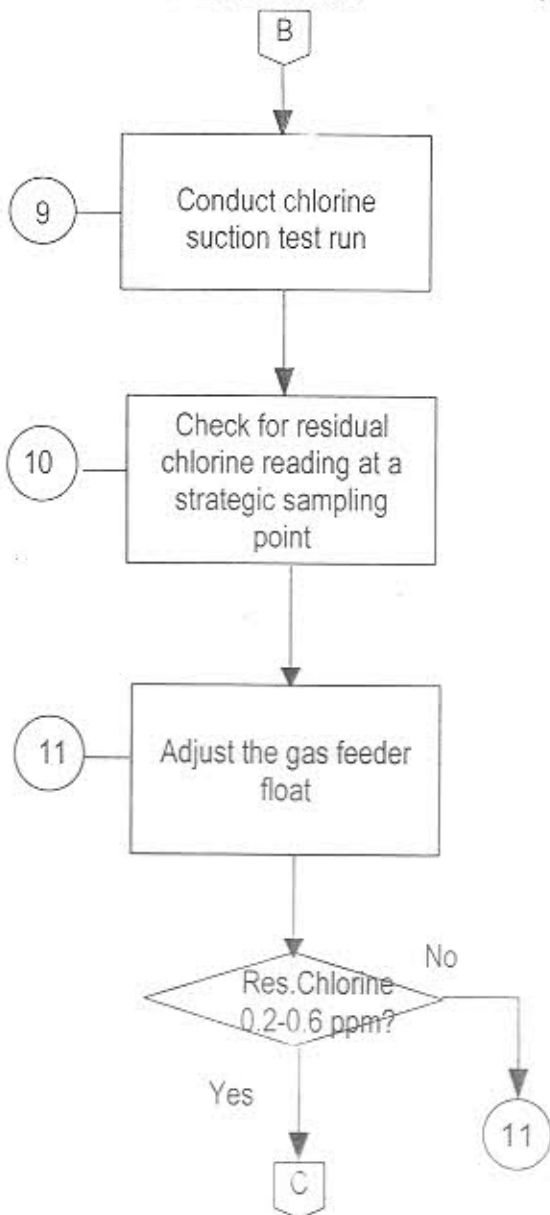
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	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01, 01

4.0 PROCEDURE

PROCESS FLOW


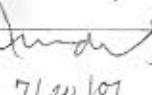
RESPONSIBILITY


DETAILS/REFERENCES

WQCD/PDD
TechniciansWQCD
Technician

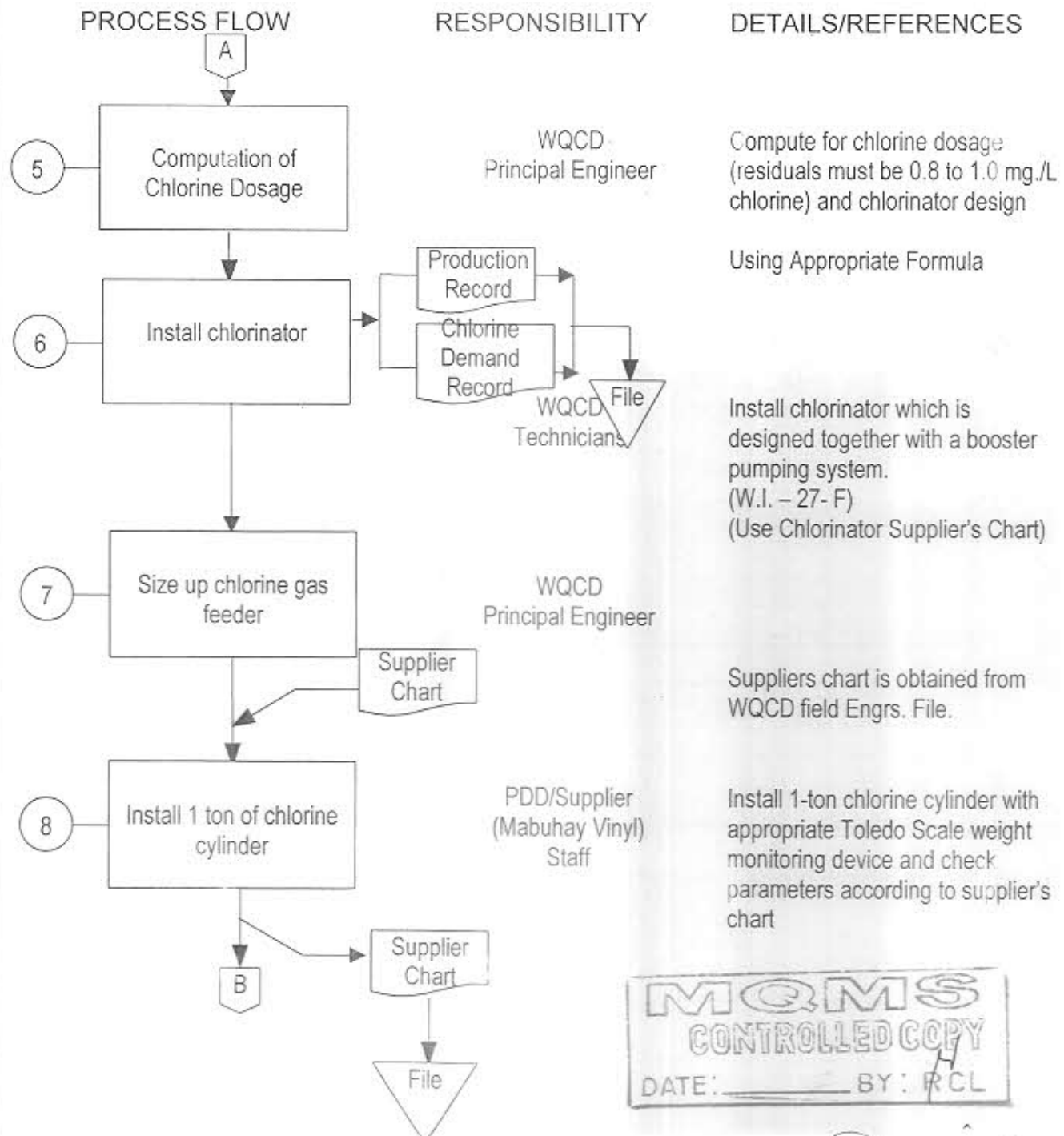
Check for chlorine residual reading at a strategic sampling point and verify the same with readings from distribution network.

Prepared:
Date:

6/20/01
Reviewed:
Date:

7/02/01
Approved:
Date:

7/20/01

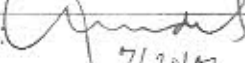
	<div>Metropolitan Cebu Water District</div> <div>Quality Management System</div> <div>Procedures Manual</div>		Index No.	OP-CHL/WST-001
			Page No.	3 of 5
			Issue No.	1
	Section		Revision No.	0
	Subject	Chlorination Procedure for Reservoir and Tanks	Effective Date	Jan. 01,01


4.0 PROCEDURE



Prepared: 
Date: 6/20/01

Reviewed: 
Date: 7/02/01

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Date: 7/20/01

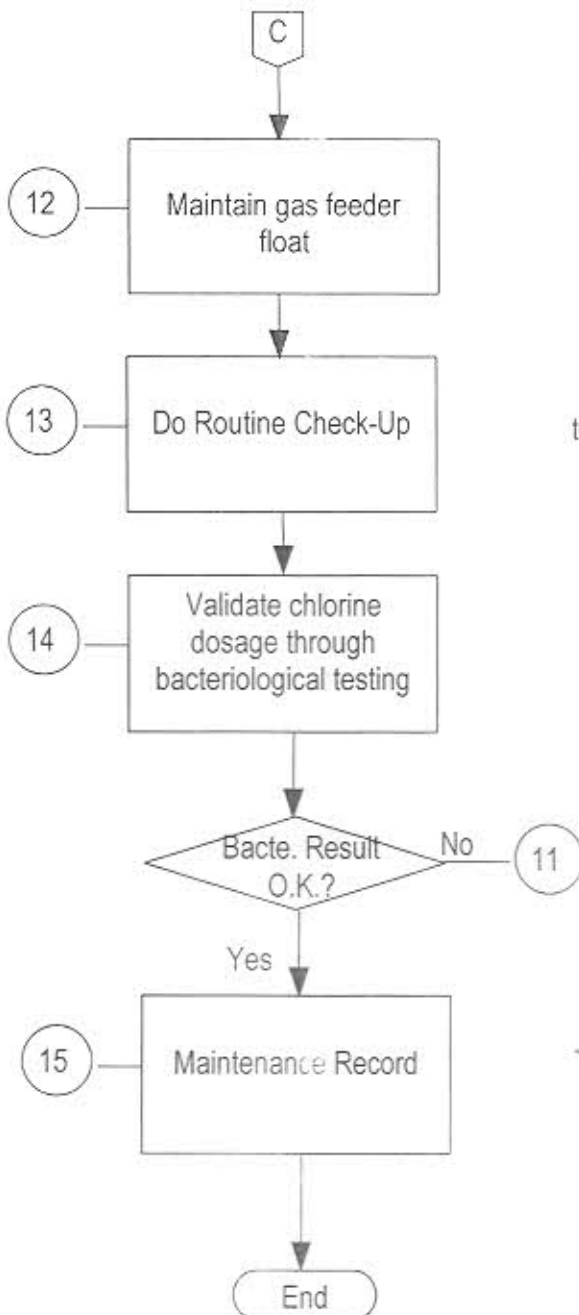
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	Subject	Revision No.	0
		Effective Date	Jan. 01,01

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

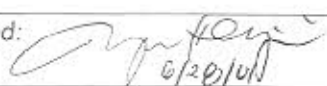
DETAILS/REFERENCES


WQCD/PDD
Technician/Operator

Keep a good maintenance record for the reservoir's chlorination system.
 (Use appropriate protective equipment and safety gadgets in handling chlorine gas)
 (Chlorine Safety Program)
 (WP- 01)

Prepared:

Date:


6/20/01

Reviewed:

Date:


7/02/01

Approved:

Date:


7/20/01

New Meter Accuracy Testing



Metropolitan Cebu Water District Quality Management System Procedures Manual

Index No. OP-MMN-001

Page No. 1 of 2

Issue No. 1

Revision No. 0

Effective Date Jan. 01, 01

Section Meter Maintenance

Subject New Meter Accuracy Testing

1.0 OBJECTIVE:

A procedure in carrying out accuracy testing of newly purchased water meters.

2.0 SCOPE:

From receipt of newly purchased water meters from warehouse clerk to endorsement of the meters back to warehouse clerk.

3.0 DEFINITION OF TERMS:

W.I. - Work Instruction


PITC - Precision Instrument Tech. Chief



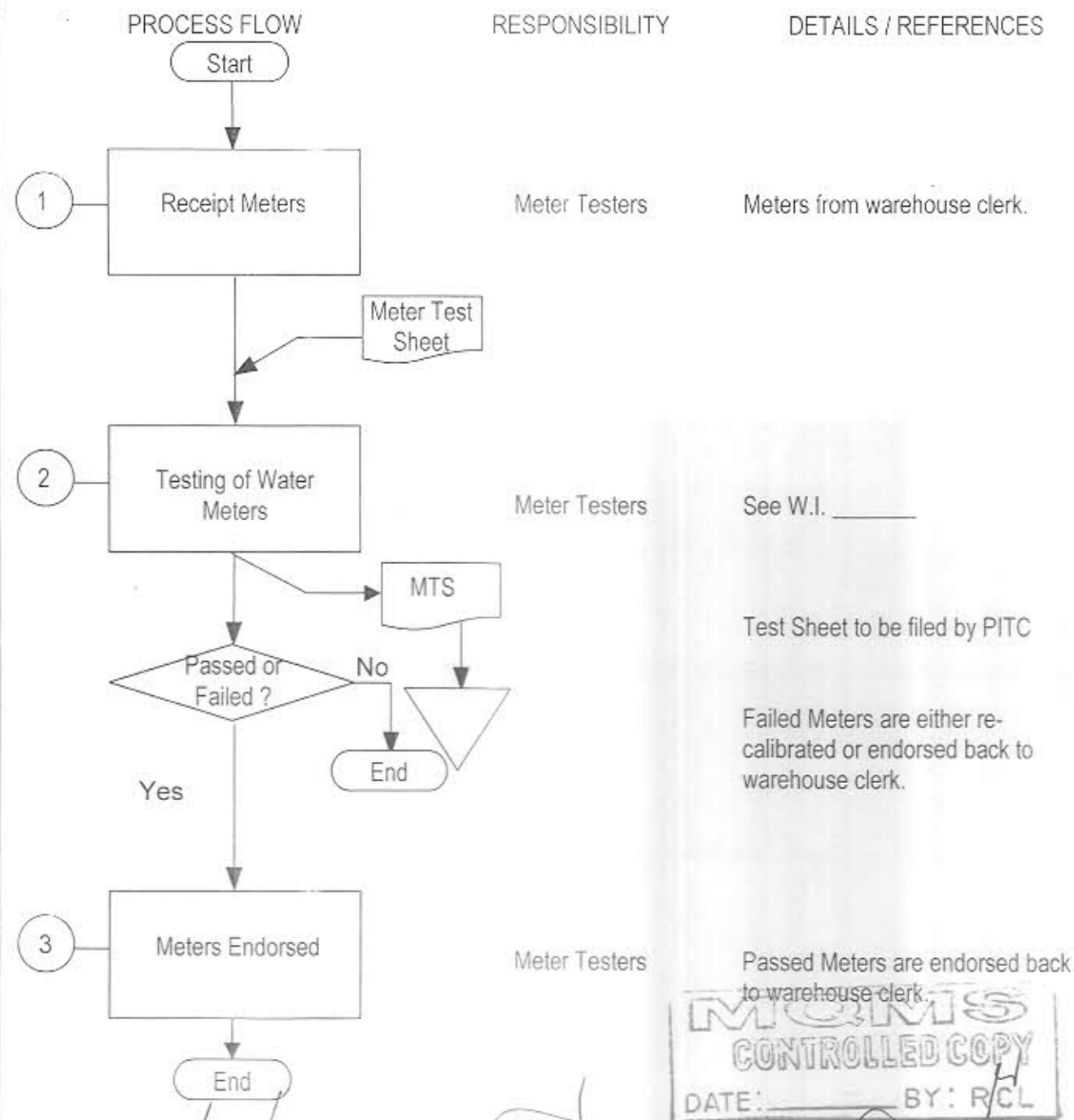
Prepared: Juan Antonio Martinez
Date: 7/17/01

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodit
Date: 7/20/01

	Metropolitan Cebu Water District Quality Management System Procedures Manual	Index No.	OP-MMN-001
		Page No.	2 of 2
	Section	Meter Maintenance	Issue No. 1
	Subject	New Meter Accuracy Testing	Revision No. 0
		Effective Date	Jan. 01,01

4.0 PROCEDURE




Prepared: Juan Antonio Martinez
Date: 7/17/01

Reviewed: Jerome A. Peralta
Date: 7/19/01

Approved: Adoracion B. Rodit
Date: 7/20/01



Meter Testing (Pulled-out Meters)

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	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01,01

1.0 OBJECTIVE:

A procedure to carryout testing of meters pulled-out under corrective preventive meter maintenance.

2.0 SCOPE:

Testing of incoming meters under preventive corrective meter maintenance.

3.0 DEFINITION OF TERMS:

JO – Replacement Job Orders

PITC – Precision Instrument Technician Chief

Sr. IT – Senior Instrument Technician

PEO – Plant Equipment Operator

MA – Maintenance Aide

MMDC – Meter Maintenance Plumber Assigned as clerk.




Prepared: Juan Antonio Martinez
Date: 7/17/2001

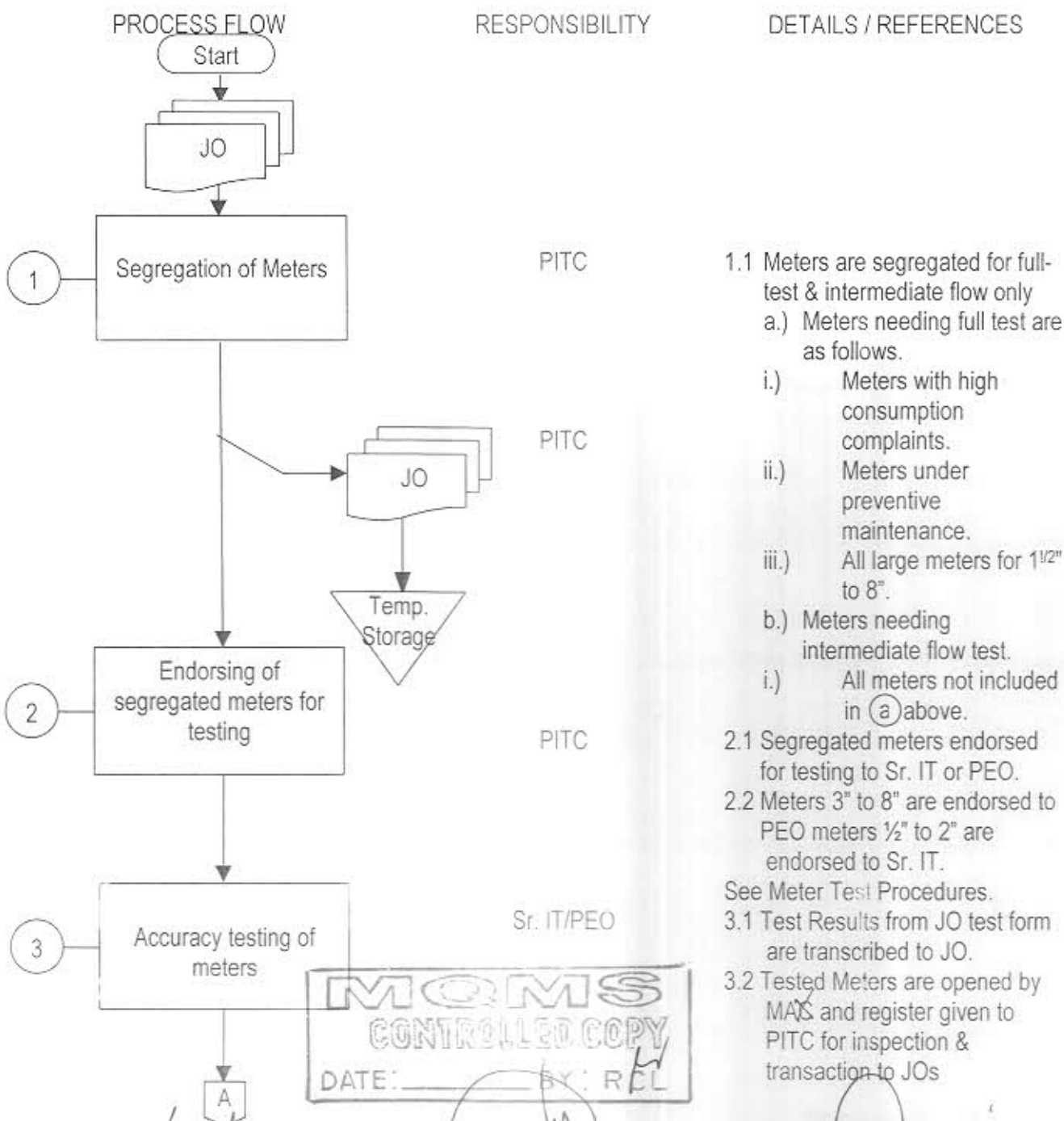
Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01

Meter Testing (Pulled-out Meters)

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		Page No.	2 Of 3
	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01,01

4.0 PROCEDURE



Prepared: Juan Antonio Martinez
Date: 7/17/001

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01



Metropolitan Cebu Water District
**Quality Management System
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1

Revision No.

0

Section

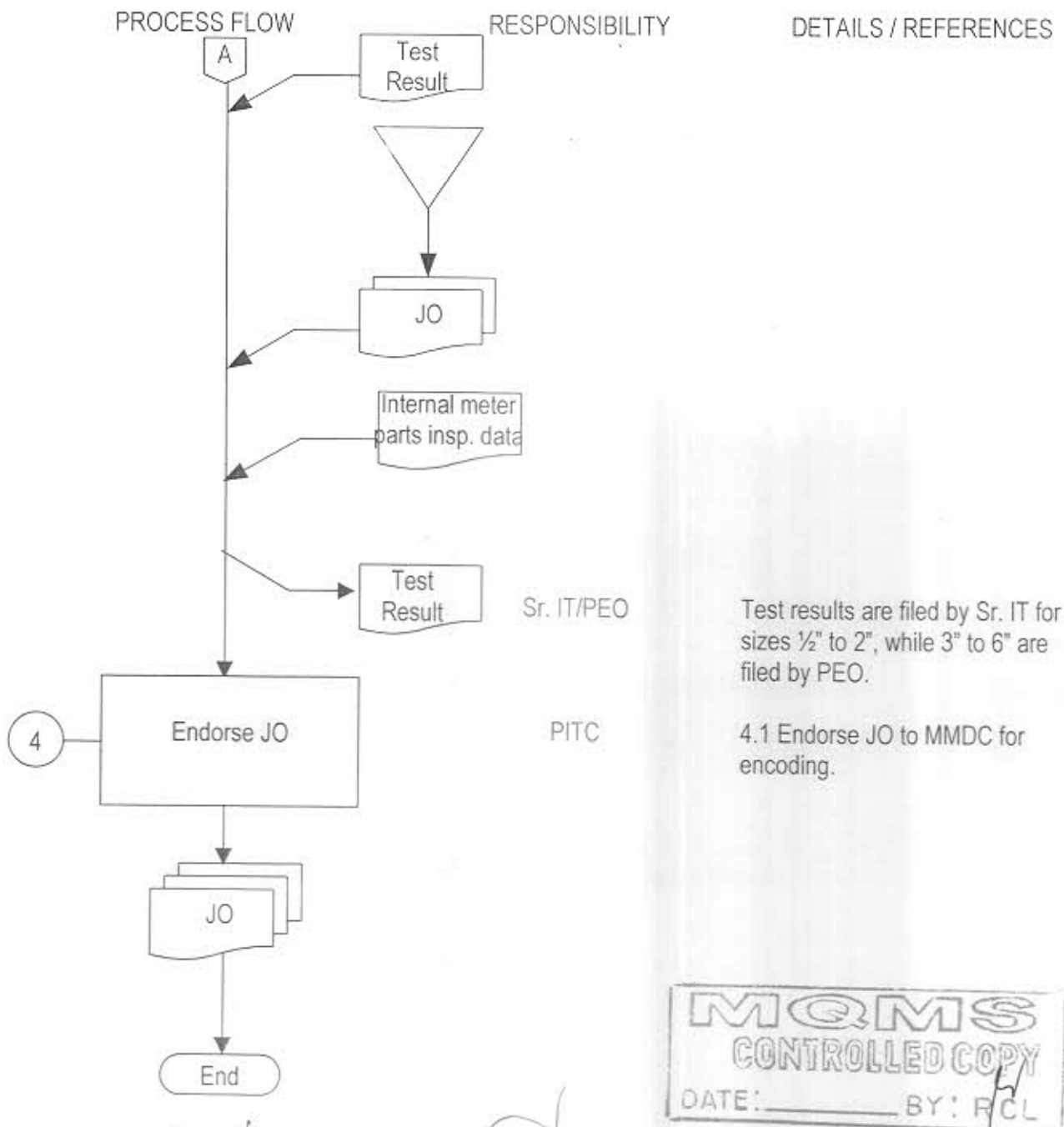
Subject

Meter Testing (Pulled-out Meters)

Effective Date

Jan. 01,01


4.0 PROCEDURE



Prepared: Juan Antonio Martinez
 Date: 7/17/01

Reviewed: Jerome A. Peralta
 Date: 7/18/01

Approved: Adoracion B. Rodri
 Date: 7/20/01

	Metropolitan Cebu Water District Quality Management System Procedures Manual		Index No.	OP – MMN - 003
			Page No.	1 of 3
	Section		Issue No.	1
	Subject	Meter Testing (Complaint)	Revision No.	0
		Effective Date	Jan. 01,01	

1.0 OBJECTIVE:

To establish A procedure to carryout meter testing. Subject meters are those from concessionaire with complaints of high consumption.

2.0 SCOPE:

All meters coming from preventive maintenance program and corrective maintenance.

3.0 DEFINITION OF TERMS:


- MAC - MCWD Action Center
- MMD - Meter Maintenance Division
- MSSD - Maintenance Support Service Department
- PIT - Precision Instrument Technician
- WMMB - Water Maintenance Man B



Prepared: Juan Antonio J. Martinez
Date: 7/17/01

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01

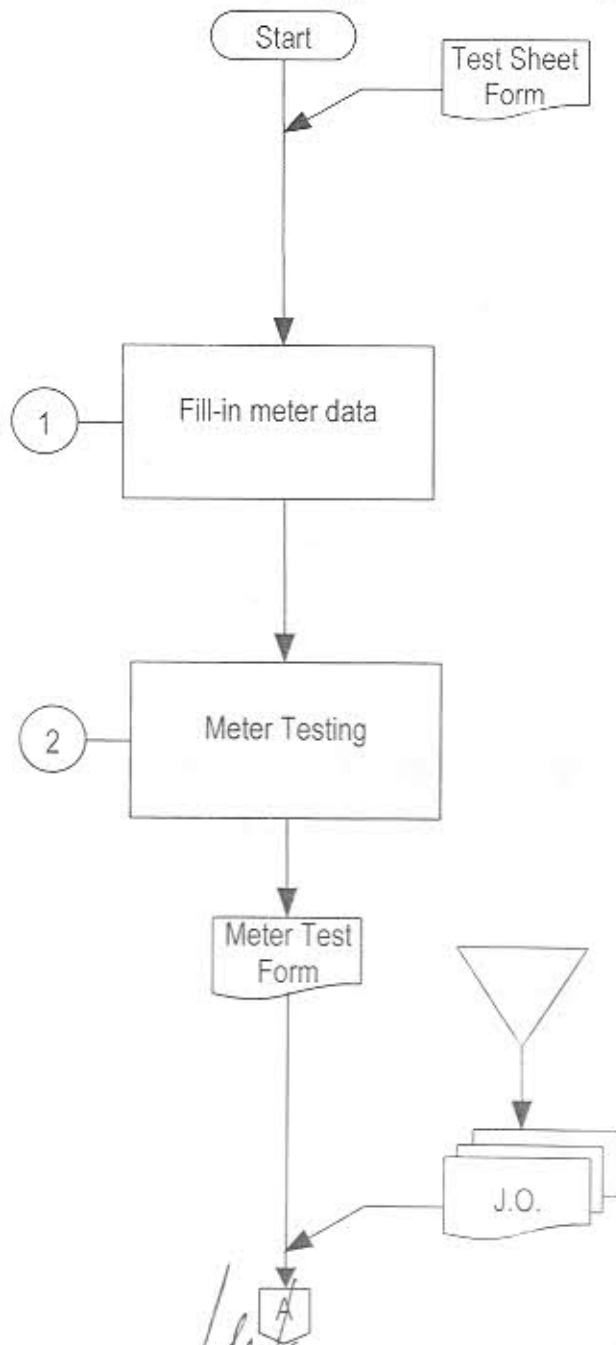
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	Section	Issue No.	1
	Subject	Revision No.	0
		Effective Date	Jan. 01,01

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS / REFERENCES



Test Sheet Form to be secured from MMD Manager.

Meters for testing are endorsed by Precision Instrument Technician. (Store Keeper)

Fill-in the meter data, into the Test Sheet Form of those meters scheduled for testing.
The data are the following:
a.) Meter Brand
b.) Meter Serial Number
c.) Meter size

Refer to W.I. # _____.



J.O. from PIT file.

Prepared: Juan Antonio J. Martinez
Date: 7/17/2001

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01



Metropolitan Cebu Water District
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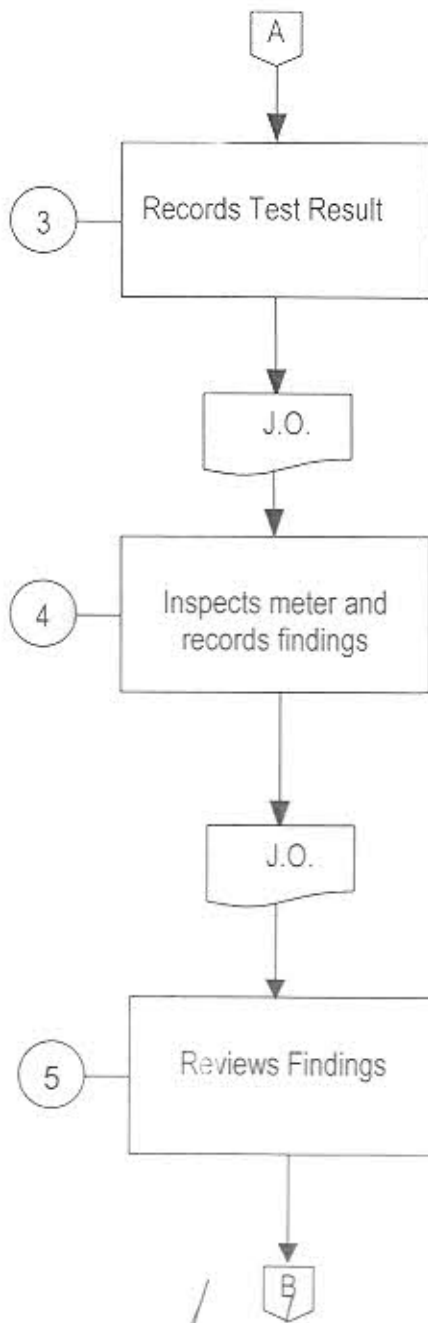
Revision No. 0

Effective Date Jan. 01,01

Section

Subject

Meter Testing (Complaint)

4.0 PROCEDURE**PROCESS FLOW****RESPONSIBILITY DETAILS/REFERENCES**

PIT (Storage -)

Records meter test result into J.O.

PIT (Storage)

Inspect meters before cleaning and records in the J.O. the finding, if any, such as damage, defects, etc.
 FRM – MMN - 003

MMD Manager

Reviews the findings and other data in the J.O. and set-aside copy of the J.O.



Prepared: Juan Antonio J. Martinez
 Date: 7/17/2001

Reviewed: Jeromela Peralta
 Date: 7/20/01

Approved: Adoracion B. Rodil
 Date: 7/20/01



Metropolitan Cebu Water District
Quality Management System
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Revision No. 0

Effective Date Jan 01,01

Section

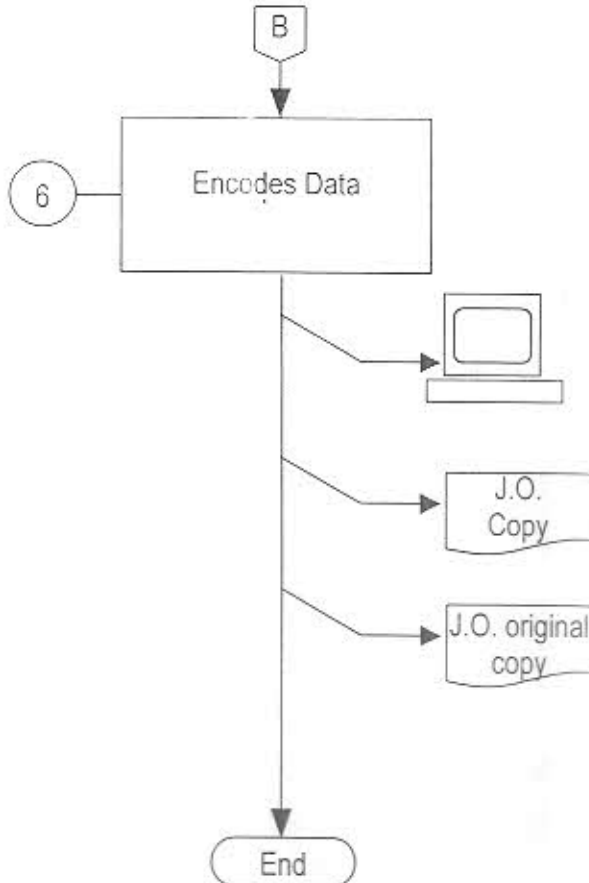
Subject

Meter Testing (Complaint)

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY DETAILS/REFERENCES



WMMB

Encodes meter data and all other information found in the J.O.

The following data are encoded into the MMD computer.

- a.) date tested
- b.) test results

J.O. copy endorsed top MAC
 FRM-MMN-003

Original copy of J.O. submitted to Meter Reading Division.
 FRM-MMN-003



Prepared: Juan Antonio J. Martinez

Date: 7/17/2001

Reviewed: Jerome A. Peralta

Date: 7/18/01

Approved: Adoracion B. Rodil

Date: 7/20/01



Metropolitan Cebu Water District
**Quality Management System
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1

Revision No.

0

Section

Meter Maintenance

Subject

Meter Maintenance (P.M.)

Effective Date

Jan. 01,01

1.0 OBJECTIVE:

A procedure on how to carry out meter replacement per meters under preventive maintenance.

2.0 SCOPE:

From generation of meter list under preventive maintenance to furnishing of JO to meter reader of replacement.

3.0 DEFINITION OF TERMS:

JO – Replacement Job Order

MML – Meter Master List

PM – Preventive Maintenance

MMDC – Meter Maintenance Division Plumber Assigned as Clerk.

MMDM – Meter Maintenance Division Manager

WI – Work Instruction

MAC – MCWD Action Center



Prepared: Juan Apotnio J. Martinez
Date: 7/17/01

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01



Metropolitan Cebu Water District
**Quality Management System
Procedures Manual**

Index No. **OP-MMN-004**

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Issue No. 1

Revision No. 0

Effective Date Jan. 01, 01

Section **Meter Maintenance**

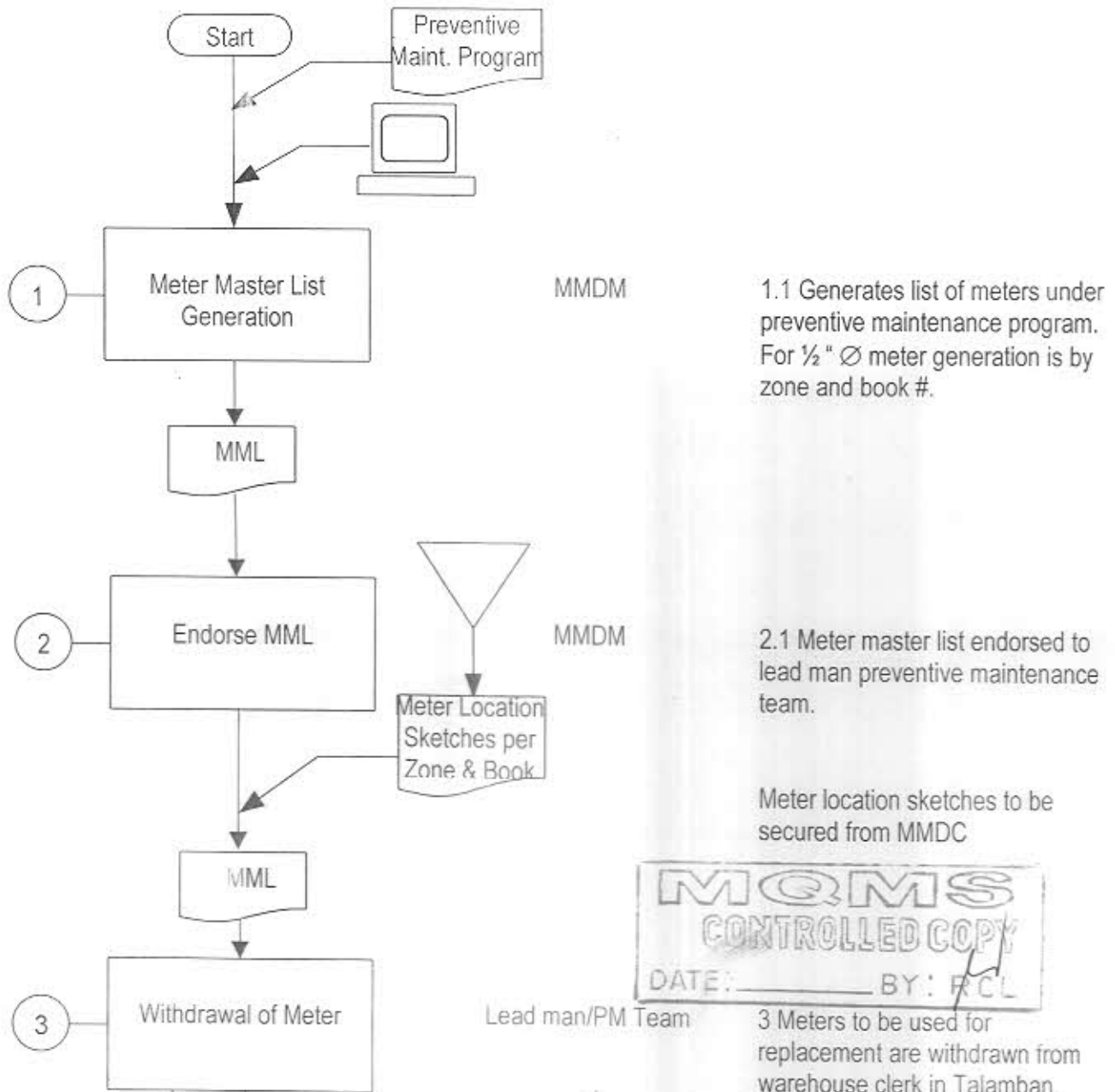
Subject **Meter Maintenance (P.M.)**

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS/REFERENCES

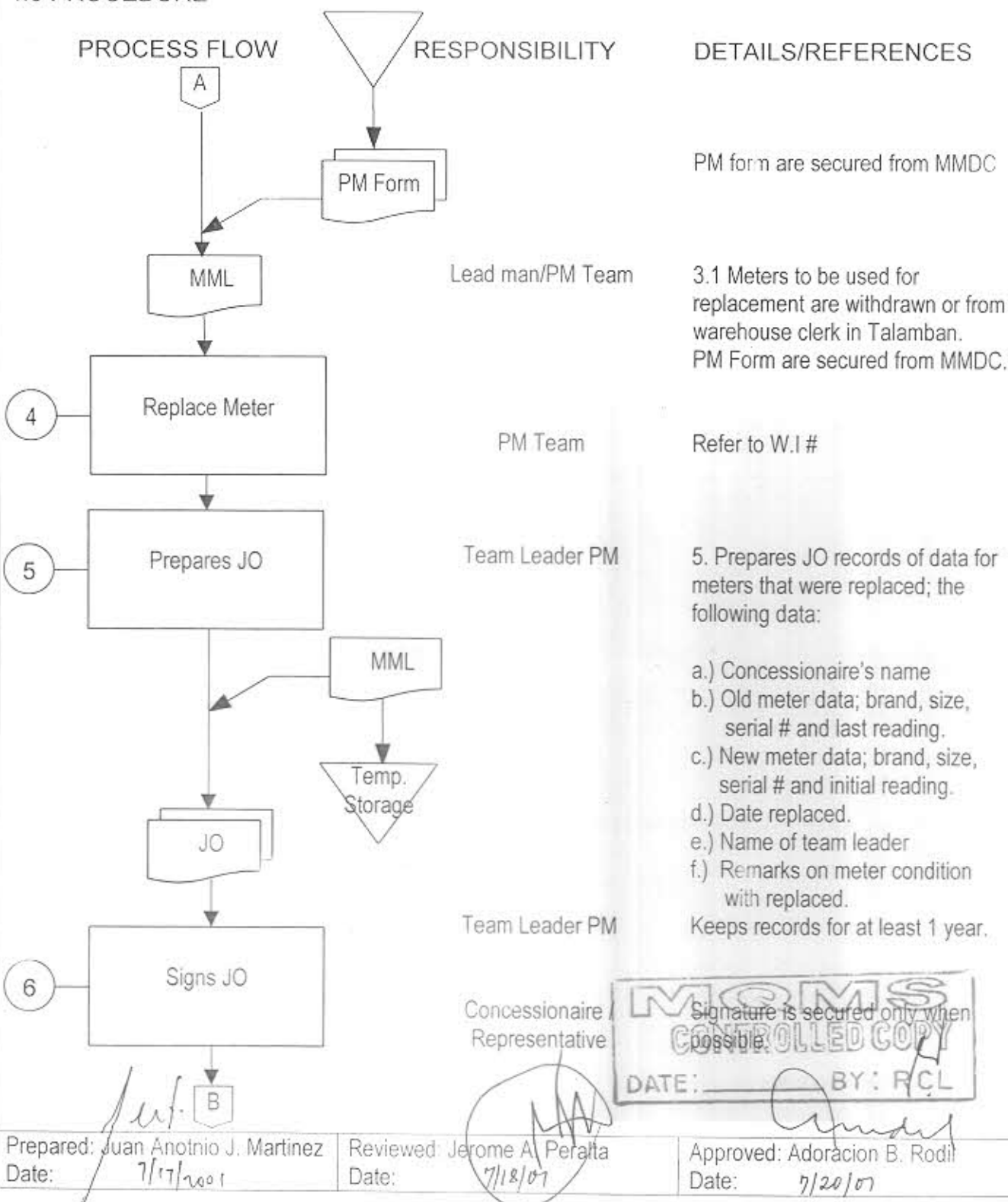


Prepared: Juan Anothio J. Martinez
Date: 7/17/01

Reviewed: Jerome A. Peralta
Date: 7/19/01

Approved: Adoracion B. Rodil
Date: 7/20/01

4.0 PROCEDURE





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**Quality Management System
Procedures Manual**

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Effective Date

Jan. 01, 01

Section

Meter Maintenance

Subject

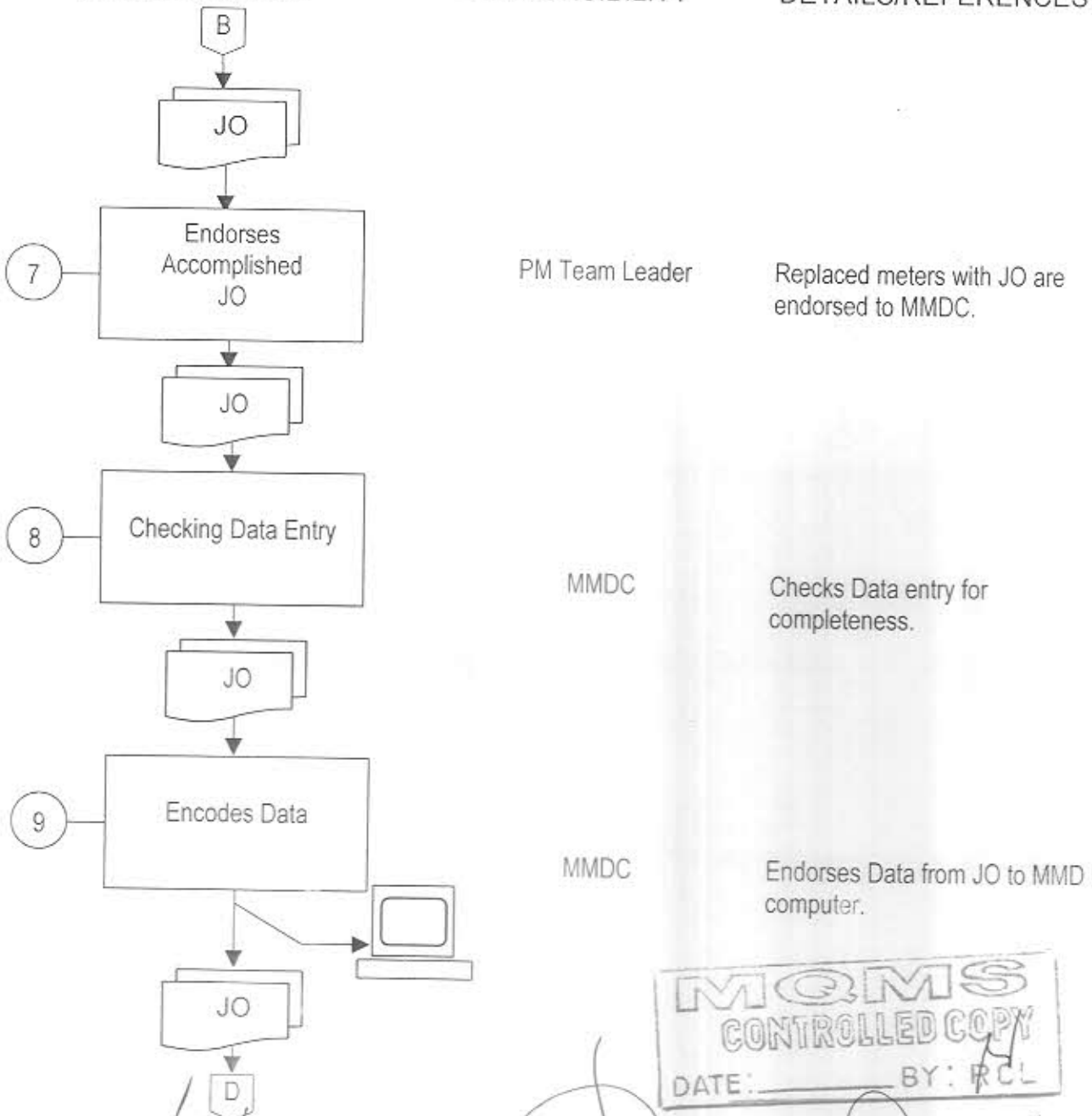
Meter Maintenance (P.M.)

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS/REFERENCES



Prepared: Juan Anotnio J. Martinez
Date: 7/17/2001

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01



Metropolitan Cebu Water District
**Quality Management System
Procedures Manual**

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Issue No.

1

Revision No.

0

Effective Date

Jan. 01,01

Section

Meter Maintenance

Subject

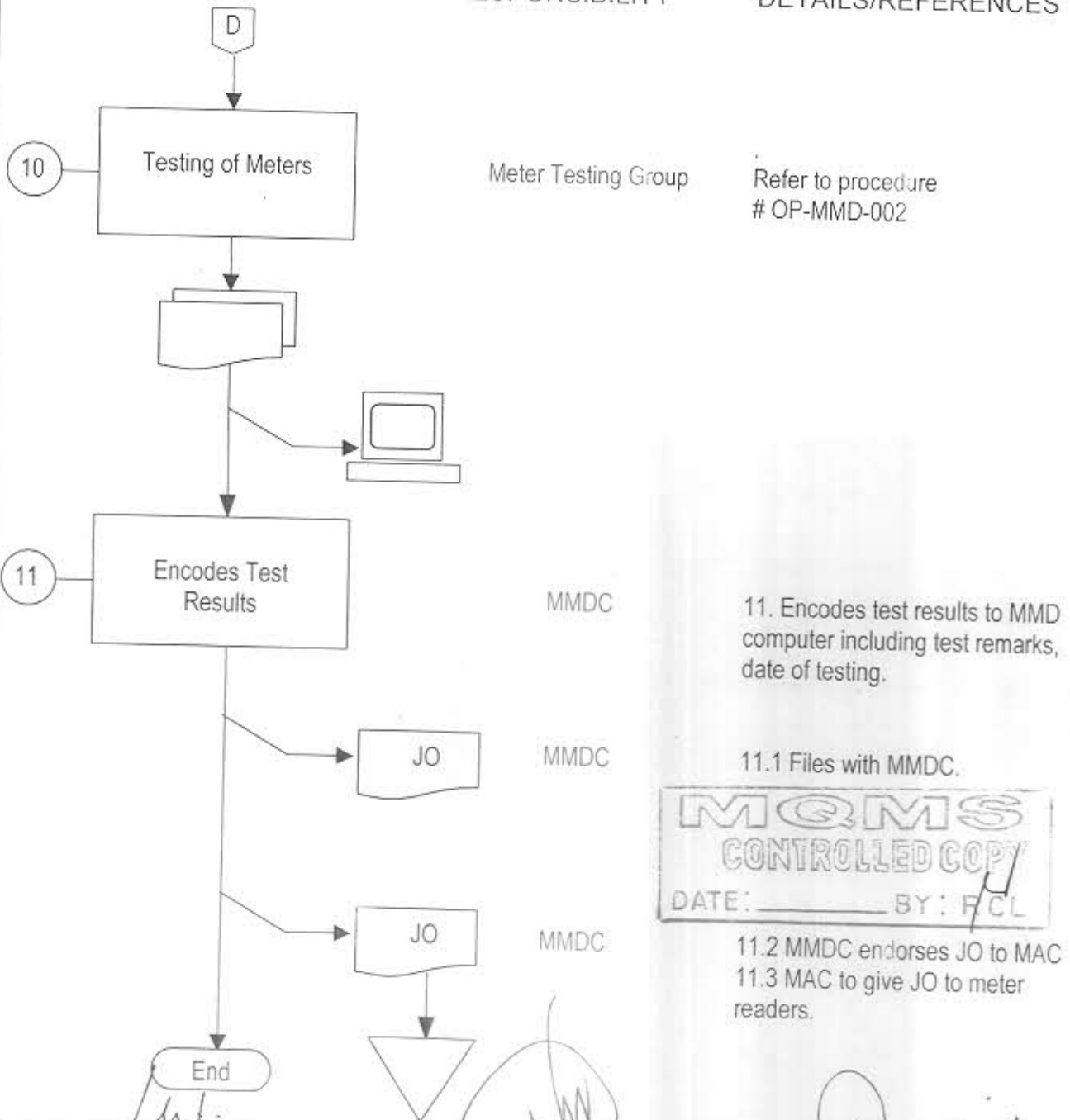
Meter Maintenance (P.M.)

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS/REFERENCES



Prepared: Juan Anothio J. Martinez
Date: 7/17/2001

Reviewed: Jerome A. Peralta
Date: 7/18/01

Approved: Adoracion B. Rodil
Date: 7/20/01