



Operations Manual

Republic of the Philippines
METRO SIARGAO WATER DISTRICT
Barangay 9 Poblacion Dapa Surigao del Norte





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B. GENERAL DESCRIPTION OF THE UNTILITY

• BRIEF HISTORY OF THE COMPANY

The Metro Siargao Water District (MSWD) was formed on January 16, 1978 and was issued Conditional Certificate of conformance Number 056 after complying with LWUA's minimum requirements for the certification program. It provides potable water supply to the thirteen (13) poblacion barangays of the municipality of Dapa as its service coverage.

Developed in 1960s by the now defunct National Water and Sewerage Authority (NAWASA). It is a surface water source located 14 kilometers away from Poblacion Dapa.

Its distribution and main lines are of cast iron (CI) pipes given by the Japanese government as part of the Reparation Goods for the World War II.

It has the capacity to produce 85,000 gallons which is pumped a reservoir located 2.5 kilometers from the town proper.

Due to pumping constraints only 218 cubic meters of water per day was supplied/drawn.

Further, the CI pipes had become dilapidated and leaked atrociously, causing almost 80% system output are lost and its water quality deteriorated.

In 1976, the TUBURAN Source was closed and abandoned

The present water supply (Bito Source) an underground creek with running water located only 3 kilometers from the town with a maximum yield of approximately 17.5 liters per second.

Developed through a Loan from LWUA amounting to 4.3 million pesos with an equity amounting to P612, 000 from Countrywide Development Fund (CDF) of Senator Robert Z. Barbers and was operational since 2003.

Its pipelines are CI pipes with its distribution totaling to 1.3 kilometers of 150 mm and 100 mm pipes.

In 2001, the LWUA approved the de-annexation of the now Del Carmen Water District, while General Luna has now a Level II Water System.

With the effort of the General Manager, Board of Directors Staff and Personnel the Metro Siargao Water District was one of the recipients of JICA grants/assistance in the amount of 5 M for the Small Water District Improvement Project under the Technical Cooperation Project of Japan's Official Development Assistance (ODA) from August 2005 to July, 2010.



- **FRANCHISE AREA PROFILE**

NATURAL CONDITIONS OF THE TOWN

The Municipality of Dapa which composed of island and islets is located on the Southern tip of Siargao Island. It has 29 Barangays: seventeen (17) in the mainland and twelve (12) island barangays with the total population of about 22,851 individuals of which 9,916 are residing in Poblacion Barangays. It has total households of 4,629 of which 2,011 of it are located in Poblacion Barangays. It is bounded by the municipalities of Del Carmen, General Luna, Pilar on the North, Hinatuan passage on the south, the Pacific Ocean on the east and Dinagat Island on the west. It is thirty six (36) nautical miles from Surigao City the capital of the province of Surigao del Norte. It has a total land area of 9,808.96 hectares..

Meteorology

The island has no dry season with a very pronounced maximum rainfall from November to January. Warmest month is during November while coldest is during December. This type of climate is characterized by three (3) prevailing winds:

1. The Northern or commonly known as Northeast which prevails during the month of November to February;
2. The Southeast Monsoon which prevails during months of July, August and September
3. The trade wind, which is prevailing wind over the tropics.



Present and Future Population

Projection of Future Municipal Population

The municipal population through the future was estimated based on NSO 2000 statistic data and in application of annual average growth rate of 2.78% from 2000 to 2005 as shown in Table 3.3.1.

Table 3.3.1 Projection of Municipal Population

Year	Population	Remarks
2000	19,508	NSO
2005	23,439	Projected
2010	28,162	Projected
2015	33,838	Projected

Source: LGU

Projection of Future Barangay Population

Distribution of municipal population to the barangays is made in use of present population distribution percentage to municipal total population.

Prepare population distribution map showing the magnitude of population in the figure.

Table 3.3.1 Projection of Municipal Population

Year	2006	2010	2015
Brgy 1	1,718	1,989	2,390
Brgy 2	653	756	909
Brgy 3	543	629	756
Brgy 4	351	407	489
Brgy 5	305	354	425
Brgy 6	744	862	1,036
Brgy 7	329	381	458
Brgy 8	243	282	338
Brgy 9	561	650	781
Brgy 10	537	622	748
Brgy 11	647	749	900
Brg Brgy 12	2,181	2,526	3,035
Brgy 13	1,488	1,724	2,071



(2) Means of Transportation

Tricycles provide transportation to commuters within the Poblacion and adjacent barangays. Passenger jeepneys ply to specifically assigned routes linking to various barangays and neighboring municipalities. Motor boats are used for island barangays.

(3) Utilities

Communication

The communication services in the Municipality of Dapa were provided by SMART and Globe companies, PT & T, PLDT, Philcom, Bayantel and Green Island Cable Television. The postal services were also provided by the Philippine Postal Office and the LBC. Private Internet Café shops are also available within the poblacion area.

Power

National Power Corporation (NAPOCOR), the supplier and Siargao Electric Cooperative (SI-ARELCO) provided electricity services to the Municipality which cover 100% at Brgy. level. However, service coverage at household level is 75%.

Water Supply

The Metro Siargao Water District (MSWD) was formed on January 16, 1978 and was issued Conditional Certificate of Conformance Number 056 after complying with LWUA's minimum requirements for the certification program. It provides potable water supply to the thirteen (13) poblacion barangays of the municipality of Dapa as its service coverage.

4. Previous and Existing Water Supply

TUBURAN WATER SOURCE (PREVIOUS)



Developed in 1960s by the now defunct National Water and Sewerage Authority (NAWASA). It is a surface water source located 14 kilometers away from Poblacion Dapa.

Its distribution and main lines are of cast iron (CI) pipes given by the Japanese Govern-



Economical Situation in the Municipality

Economical Situations in the Municipality

The municipality plays a vital role in commerce and trade activity in the whole island being the entry and ending (exit point); to wit:

Industry

There are 150 commercial and four (4) industrial establishments currently operating in the area registered in retail and wholesaling scheme, small scale industries and services.

There are six (6) banks operating and extending savings and loan financing assistance and 21 registered cooperatives offering same services.

Agriculture

It comprises 65% of the total municipal land. The main crop is coconut and secondary products include rice, corn and root crops. Livestock and poultry production comprise chicken, swine, cattle, goats and carabaos.

Fisheries

It comprises 12,000 miles of excellent fishing ground. Local aquamarine traders are contributing to the income of the local government unit, to the neighboring municipalities as well as in the country, with their continuous trading of export quality products such as lobsters, prawns, squids and more.

Average fish production is approximately 597 metric tons per year of high value fish and other aquatic products. There are 177 motorized and 202 non- motorized pump boats.

3.4.2 Infrastructure Conditions

(1) Road Network

The municipality has a total of 28,518 kms. (urban roads) and 138,818 kms. (rural roads). Currently, 10.5 km. or about 80% of its national road were already concrete paved and about 28.5 km. of its municipal road is already completed, mostly in the Poblacion.



Republic of the Philippines
METRO SIARGAO WATER DISTRICT
Barangay 9 Poblacion Dapa Surigao del Norte
SMART CEL. NO. 0928-6544041 GLOBE CEL. NO. 0905-22864920

OPERATIONS MANUAL

Sub-total (13Brgys)	10,300	11,931	14,336
Sub-total (16 Brgys)	14,015	16,231	19,502
Total	24,315	28,162	33,838

Source: LGU



Socio-Economic Conditions

The area to be served by the WD

The MSWD served 13 of the 29 barangays of the Municipality. Specifically, this served 867 Households composed of 4335 persons which is 58% of the total Municipal Population which total to 22,851.

Present Land Use and Development Plan for 2010 and 2015

The present land use of the municipality/WD service area is presented in Table 3

Present and Future Land Use

GENERAL LAND USE	Present	Future
Built-up Area	630	978
Agricultural	23,813.50	15,022
Forest	4,984.75	13,928.50
Open Grasslands/Pasture Lands	1,000	500
Rivers/Creeks	790	790
TOTAL	31,218.50	31,218.50

Source: MPDO

Present and Future Population

Projection of Future Municipal Population

Projection of Municipal Population

Year	Population	Remarks
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Projection of Future Barangay Population

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Projection of Municipal Population

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Total	24,315	28,162	33,838

Source:



Dapa is comprised of 29 Barangays; 13 are Poblacion Barangays, 4 are mainland Barangays and 12 are island Barangays.

LIST OF BARANGAYS

POBLACION BARANGAYS:

1. BARANGAY
2. BARANGAY
3. BARANGAY
4. BARANGAY
5. BARANGAY
6. BARANGAY
7. BARANGAY

8. BARANGAY
9. BARANGAY
10. BARANGAY 10
11. BARANGAY 11
12. BARANGAY 12
13. BARANGAY 13

MAINLAND BARANGAY

1. BARANGAY STA. FE
2. BARANGAY OSMENA
3. BARANGAY UNION
4. BARANGAY DON PAULINO

ISLAND BARANGAY

1. BARANGAY BAGACAY
2. BARANGAY BUENAVISTA
3. BARANGAY CAMBAS-AC
4. BARANGAY CABAWA
5. BARANGAY CONSOLACION
6. BARANGAY CORREGIDOR
7. BARANGAY DAGOHOY
8. BARANGAY JUBANG
9. BARANGAY MONTSERAT
10. BARANGAY SAN MIGUEL
11. BARANGAY SAN CARLOS
12. BARANGAY STA. FELOMINA



• CORPORATE GOVERNANCE STRUCTURE

Corporate Governance is the system by which the district is directed and managed. It influences how the objectives of the district are set and achieved, how risk is monitored and assessed and how performance is optimized.

Good corporate governance procedures encourage the district to create a value while providing accountability and controls commensurate with the risks involved.

PURPOSE

This statement summarizes the role and responsibility of the board of Metro Siargao Water District (MSWD). The disclosure of the role and responsibility of the board is designed to assist those affected by corporate decisions to better understand the respective accountabilities and contributions of the board and management of MSWD.

The roles and responsibilities of the board will evolve as the district moves forward. As such, a regular review of the balance of responsibilities will ensure that the division of the functions remains appropriate to the needs of the district.

The policy statement is only a summary of the matters reserved to the board, and should therefore only be used as a general guide, which is not to be used in a legal capacity.

DIRECTORS

The board of directors of the district shall be composed of five citizens of the Philippines who are of voting age and residents within the district. One member shall be a representative of civic-oriented service clubs, one member a representative of professional associations, one member a representative of business, commercial, or financial organizations, one member a representative of educational institutions, one member a representative of women's organization. No public official shall serve as director. Provided, however, that if the district has availed of the financial assistance of LWUA, the Administration may appoint any of its personnel to sit in the board of directors with all the rights and privileges as pertaining to a regular member, for such period as the indebtedness remains unpaid, in which case the board shall be composed of six members.



APPOINTMENT

Board members shall be appointed by the appointing authority. Said appointments shall be made from a list of nominees, if any, submitted pursuant to Section 10 of P.D. 198. If no nominations are submitted, the appointing authority shall appoint any qualified person of the category to the vacant position.

TERM OF OFFICE

Regular terms of office shall be for six years commencing on January 1 of odd numbered years. Directors may be removed for a cause only, subject to review and approval of the Administration.

POWER AND DUTIES OF THE BOARD

May be removed for a cause only, subject to review and approval of the Administration. Provided, however, that any executive, administrative or ministerial power shall be delegated and re-delegated by the Board of Officers or agents designated for such purpose by the Board.

The function of the Board shall be to establish policy. The Board shall not engage in the detailed management of the district.

OFFICERS AND EMPLOYEES

GENERAL MANAGER

The duties of the General Manager and other officers shall be determined and specified from time to time by the Board. The General Manager, who shall not be a director; shall have full supervision and control of the maintenance and operation of water district facilities, with power and authority to appoint all personnel of the district; Provided, that the appointment of personnel in the supervisory level shall be subject to approval by the board.



C. VISION-MISSION-VALUES STATEMENT

VISION

We are Metro Siargao Water District committed to provide safe and portable water efficiently supported by an empowered community.

MISSION

We will attain adequate, sustainable and sufficient water supply system by providing safe and potable water through a participative and collaborative effort of an empowered citizenry.

VALUES:

Inspired by our vision and the challenges of our mission, we will strive to:

OUR STRATEGIES

The strategies for achieving our mission shall comprise the following:

1. Benchmarking of operations and adopting best practices
2. Measuring conformance to service delivery standards
3. Developing professionalism through capacity building

OUR EXPECTATIONS

We expect our clients to:

1. Voluntarily and promptly pay their water bills
2. Fulfill their duties and legal obligations in time
3. Be honest in furnishing information
4. Avoid unnecessary litigation

This will enable us to provide our service in an effective and efficient manner



Metro Siargao Water District envisioned the people of Dapa with utmost dedication.

With the birth of the MSWD's Citizen's Charter, you are witnessing an idea that has successfully hurdled the great divide-leaping from the realm of the conceptual to the world of real.

With the presence of this guide, we can measure how we do well or not in our service delivery. It is very vital that clients will give their feedbacks how can we improve further our services. It will spell the difference between sustaining our drive for excellence and towards mediocrity.

As a tool of excellence in service delivery, we expect it to strengthen ourselves at the end of the day- the administration and other instrumentalities in water service delivery. We also hope to have set in motion a dynamic process of continuing engagement with the community of customers we are serving.

With your cooperation, we hope to achieve all these outcomes, and continuously build a more effective, efficient, and responsive Metro Siargao Water District.



D. BILLING AND COLLECTION USER MANUAL

USER MANUAL

HOW TO DO SEARCH

This is the first topic I chose to discuss because it is the most common dialog. You need to search an account in almost all windows in the program.

Figure 1

You may noticed that the middle part of the account no. which is the classification and meter size is inactive. That is because it is not part of the account no. If you search for the acct. no you only use Zone Book and the last part which identifies the sequence in meter reading. For example if you want to look for Account No. “011-102-001-0”, all you have to do is type 11 in the first box then press enter. You will be brought to the next box. Type 1 in the box and press enter. This time you will be in the name textbox. You don’t have to type anything in the box because you are searching by account no. So just press enter twice. You will then be positioned in the particular account if it is found. If not, you will be prompted with an error message.

You can also do search by name. Leave the top text boxes blank and encode the name in the lower portion of the dialog box. For example, if you want to see all persons with family name “REYES”, you may only put REYES in the box and you will be presented with a list of all customers with family name REYES. To limit the list, type comma followed by as many first name letters.



What if you want to search for all connections with first name of ROBERT? Type in “%ROBERT” and you will be given the list of all ROBERT in the database.

Note: It is preferable that you use “Enter Key” to traverse the controls rather than jump to other controls using the mouse. This is true in almost all the dialogs in the program.

HOW TO PROCEED WITH BILLING

Posting Meter Readings

The program provides for two types of Billing, i.e, normal billing in which you bill all connections in a particular zone and book. First, setup the particular Zone and Book that you wish to bill by Clicking **Setup|Zone and Book**. Enter the Zone no and Book no and click Ok. Click **Billing|Post Meter Reading**. The first account that is ready for posting is presented. Enter the Meter Reading and Press Enter until you reach save. After saving, you will be brought to the next record. The previous meter reading may be changed if it is wrong. But this can only be done after entering the present reading.

There are cases where the meter is damaged and you want to change the rate type to average. Click the desired Rate Type from the radio buttons at the right side of the window (This can also be done by clicking **Customer|Change Rate Type**) and a dialog will open. If you changed the rate type to average, you will be asked to enter the consumption instead of Meter Reading. The same procedure is done if you want to change from Average rate type to Normal rate Type.

Review Meter Readings

Review all meter readings encoded by clicking **Billing|Reaview Reading** then print the Meter Reading Prooflist. Compare the list with the meter reading book. If there are errors then go back to Post Meter Reading and search the accounts then change the meter reading. If all entries are already correct, proceed with printing of Bills.

Print Bills

Click **Billing|Print** to open the print dialog. In your case, you just simulate printing of bills by turning off your printer because the program is still not configured to print your receipt format. Click the button print and enter the corresponding information in the dialog. Reference no is the Bill No. Also input the due date.

Posting Bills to Ledger



Post the bills to the ledger after printing by Clicking Billing|Post To Ledger. Be careful to set the correct system date before posting. The system date can be found in the lower left corner of the main menu.

Note: Be sure to set the correct date of posting. To change the date Click Setup|System Date.

Special Billing

Special Billing is the same as the normal billing. The only difference is that you may bill any particular connection anytime. This is used during disconnection to bill the water consumed from the last reading up to the day the connection was cut. In special billing, almost all entries can be changed. The save button is also changed to Print. After pressing Print, the bill is directly posted to the ledger. Unlike in the normal billing, you don't have the chance to edit the data in case there is an error. So be careful.

HOW TO POST PAYMENTS

You don't need to setup the zone & book during posting of payments.

Posting Payments

There are two dialogs available for posting of payments. The first dialog is for posting water bills and can be accessed by clicking **Collection|Post Payments (Water Bills)**. This dialog is used for posting payments with water bills used as receipt as in during full payments. In the dialog, search for the account. The search procedure is the same as discussed in the section HOW TO DO SEARCH. If you search by name leave the acct nos. empty then press enter. The textbox for name entry will be active.

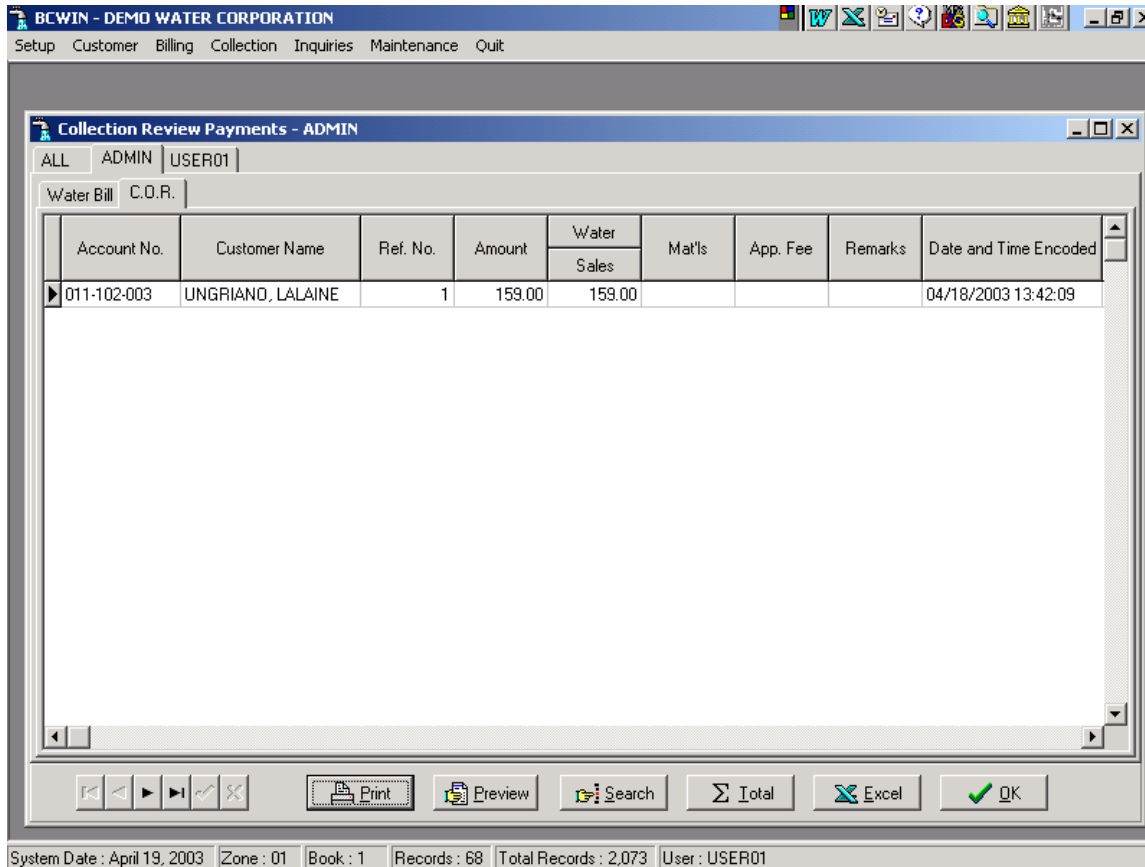
The other dialog available is **Collection|Post Payment (COR)** It is used whenever you issued the Collectors Official Receipt instead of Water Bill during Partial or Advance Payments. It is true that the two dialogs are the same. The significance of the two dialogs will be explained in the next section.



Reviewing Payments

You should review the payments after posting and compare with the actual cash present. Click **Collection|Review Payments**. You will be presented with a window similar to the window shown below:

Figure 2



You will notice that there two rows of tabs on top of the window. These are “ALL”, “ADMIN”, and “USER01”. The default when you open the window is ALL. The significance of this is that if you want to look for collection encoded by ADMIN only, just click on the tab named ADMIN and you will be presented with the list of payments he encoded. ALL tab represents the aggregate of all users. Therefore, the reports may be printed separately depending upon the user. The label of the tabs is based on the User Name used during login.

The second row of tabs is the separation of payments by Water Bill and COR. The Water Bill tab presents all entries made in the “**Collection|Post payments (Water Bill)**”. Click on the COR tab if you want to look for payments encoded in “**Collection|Post payments (COR)**”. You will then have separate reports. This is easier to compare with actual cash on hand.



Print and review the reports for errors because it is vital that all the data is correct prior to ledger posting. If there are errors you can go back to Posting of payments and correct the corresponding entry.

Posting to ledger

You may proceed with posting to ledger after review and being sure that all encoded data are correct. Click **Collection Post To Ledger**. Posting may be done by user or you can post all payments by choosing ALL in the drop box of the dialog shown below:

Figure 3



Note: make sure to set the correct date of posting. To change the date Click Setup|System Date.

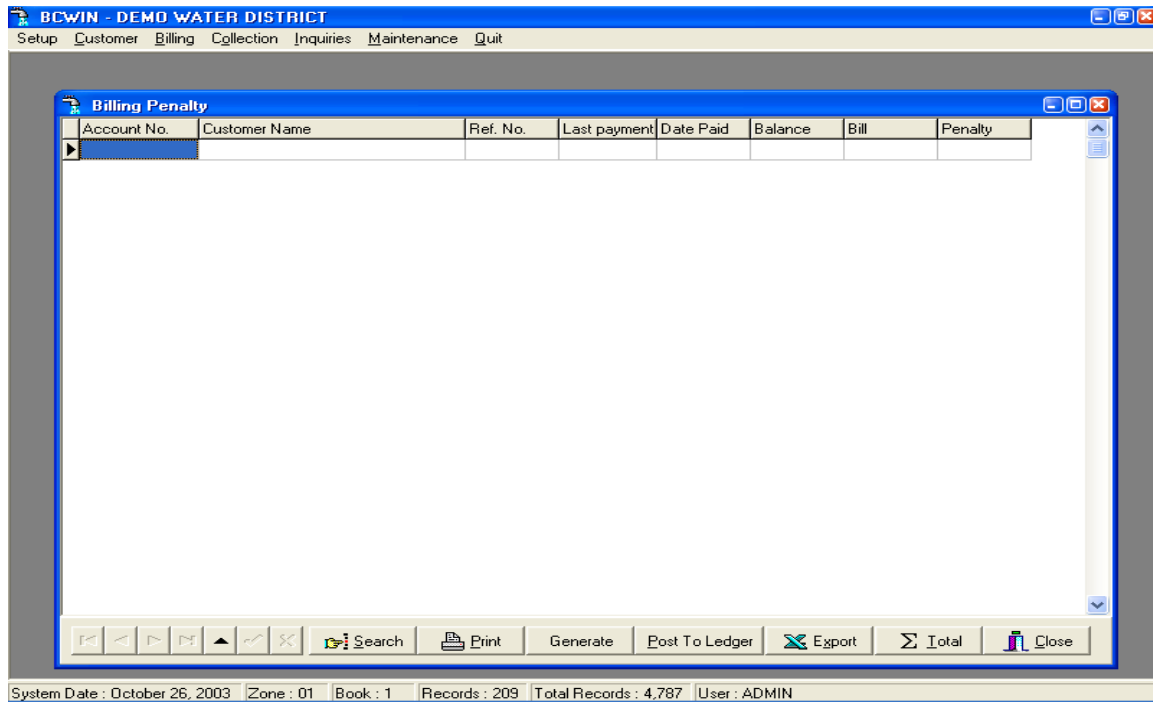
HOW TO POST PENALTIES

Generating, Review and Posting of Penalties

You should setup the right Zone and Book to penalize before you proceed. Look at the bottom left portion of the main menu to see the current working Zone and Book. Click Billing|Penalties to open the appropriate window shown below:



Figure 4



This window contains all aspects of penalty. Here you can generate penalties, print the proof list and post to ledger. You will be presented with a blank screen during initial phase. To generate the penalties Click the button “Generate” in the bottom panel. After the process, all connections with arrears in the particular zone and book will be penalized. You can change the amount of penalty if you wish. For example, if the particular connection has been authorized by the manager not to be penalized then enter a zero in the penalty column then press down or up arrow (Be sure to retain a copy of all authorizations for reference). The connection will be removed from the display. Print the prooflist for review. You may post the penalties to ledger after the review by clicking the button “Post to ledger”.

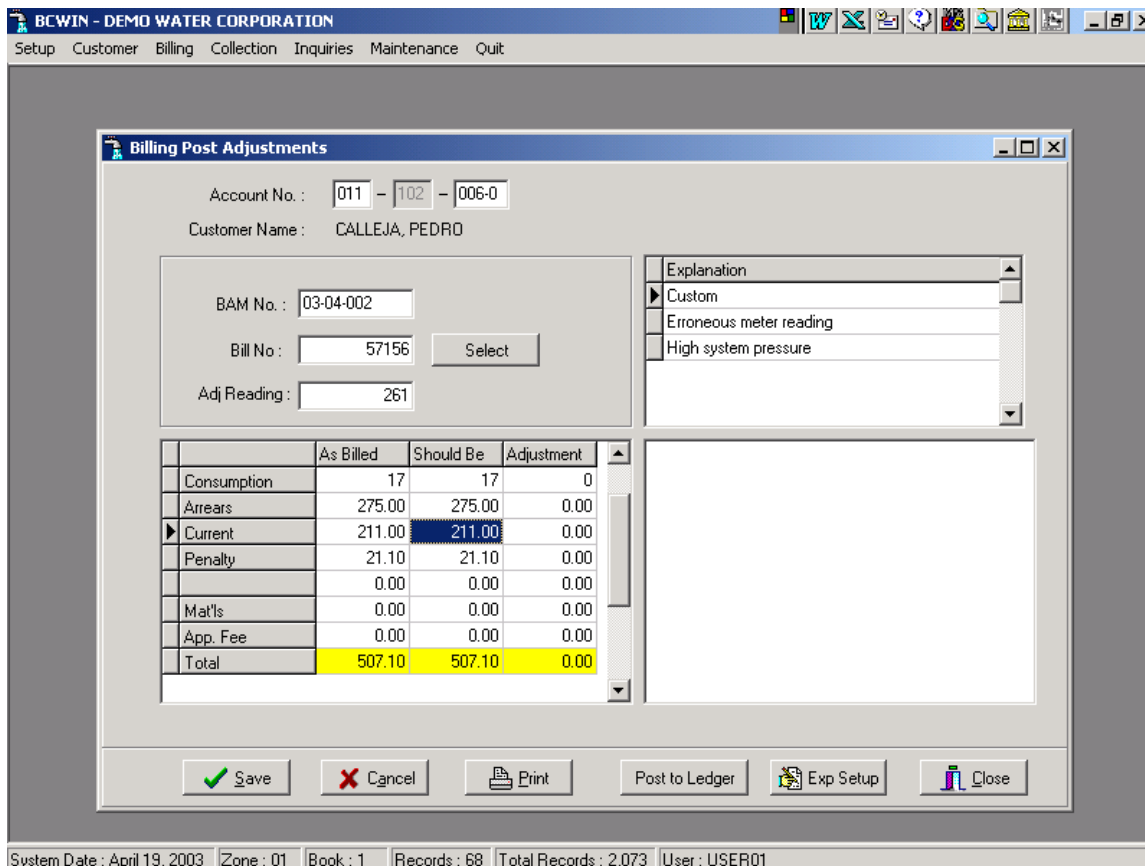
Note: Like all posting to ledger, make sure to set the correct date of posting. To change the date Click Setup|System Date.

HOW TO POST ADJUSTMENTS

Posting Adjustments

Click **Billing|Post Adjustments**, then a dialog will open. Enter the account number of the connection you wish to adjust. The BAM No. will be generated automatically. Its format is year dash month dash and series no. of all adjustments for the month. Click the button select to retrieve the particular bill to be adjusted. The window is shown in Figure 5.

Figure 5



Enter the value of the new reading in the “Adj. Reading” text box if the adjustment is due to erroneous reading. The program will use this value as the previous reading in the next bill.

Proceed with entering the correct amount for various billing entries. The “As Billed” column lists all values in the original bill. You may change these entries by typing the correct amount in the “Should be” column or you may type the adjustment in the “Adjustment” column. The “Adjustment” column will be computed automatically every time you change the “Should be” and vice versa. You may also let the program compute for the water bill amount by double clicking the cell “Current” under “As billed” whenever the actual consumption is changed.

It is important that the adjustment in the current water bill be encoded in the *current* row especially if the bill is not yet penalized. Although the final outcome is the same as placing it in the *arrears* row, the major difference is that the program will not know that there is a new amount for the current bill and will base the penalty on the old bill amount. For example, the original bill is ₱211.00 and it will be adjusted to ₱150.00 for whatever reason, type ₱150.00 in the “Should be” column. During penalty period, the program will calculate the amount to be ₱15.00 rather than ₱21.10 if the adjustment was made in the *arrears* row.



The top right list box contains selection of usual explanations for adjustments. You may add entries by clicking the “Exp Setup” button. Click *custom* from the list box then type the explanation in the lower right memo box if the explanation for the adjustment is not in the list.

The final memo may be printed and then posted to the ledger by clicking the buttons “Print” and “Post to ledger”.

REPORTS

There are two types of reports available in the program. The first type of reports are those reports that are needed for review. These reports are called proof lists and can be found either in the billing menu or Collection Menu. The other report types can be taken from the Inquiries Menu. These reports were taken from the customer ledger, i.e., reports that are already final. Report generation is straight forward and needs no further explanation. You will be asked for the date or month in almost all reports in the inquiries menu because all reports in the program can be regenerated. In this program, you don’t have to keep all hard copies because you may reprint it anytime.

All reports are configured to be printed in the continuous form using EPSON printer with wide carriage except Monthly Adjustments and summary reports of Aging which should be printed using a bond paper inserted as landscape in the printer.

DATABASE BACKUP

There are two types of backup. The first type of backup is copy. This means that you will make a backup of the database as is. The database is not compressed prior to backup. This type of backup is recommended if you are using a CD Writer to make backups. However, in cases where the data is still minimal, you can make backups using the diskette. Instead of copy, you chose **Maintenance|Backup** compressed from the menu. Choose the appropriate drive from the dialog and Click OK. You will be prompted to insert additional disks if the current disk is already full. Make sure to do backups regularly because it is very difficult to retrieve lost data. Aside from the hassle, data reconstruction is costly if not impossible if you are depending only on the electronic data and not keeping a hard copy of the customer ledgers. The database keeps on growing since all information is kept intact. Therefore you should prepare to purchase a CD Writer if ever the backup grows to a number of disks that is already difficult to manage.

You can also backup the database file outside of the program. The only file to be backed up is BCDB.GDB in the directory where you chose to install the program.



MAKING CHANGES TO THE DATABASE

There are times when changes should be made directly on the customer ledger. In this case the change should be made in the **Maintenance|Modify** menu. You should avoid using this menu because it is very complicated. However, if you don't have other option, like posting adjustment, you may do so with caution.

Figure 6

Maintenance Modify

Account No. : 011 - 102 - 00001
 Customer Name : DE GAMO, ERLINDA
 Max Index : 15 13002

Beg. Balances:
 Water Sales: 1,432.72
 Penalty: []
 Mat'l's: []
 MMF: []

Temporary Variables:
 Water Bill: []
 Bill_Stat: 0
 Mat'l's: []
 Penalty: []
 Ext. Fee: []
 MMF: []

Entry Type	Index	Ref. No.	Ref. Date	Due Date	Reading	Usage	Water Bill	Pay	Discount	Rebate	Balance	Remarks
Bill	3	377590	07/02/2003	07/16/2003	238	28	247.00				416.18	
Disconnect	4		07/10/2003		0							
Reconnect	5		07/10/2003		0							
Penalty	6	377590	07/17/2003	07/16/2003			24.70				440.88	
Payment	7	377590	07/26/2003					440.88				
Bill	8	380881	08/04/2003	08/19/2003	286	48	459.00				459.00	
Penalty	9	380881	08/20/2003	08/19/2003			45.90				504.90	
Bill	10	384126	09/02/2003	09/17/2003	337	51	492.00				996.90	
Penalty	11	384126	09/18/2003	09/17/2003			49.20				1,046.10	
Payment	12	060187	09/22/2003					492.00			554.10	
Bill	13	387498	10/02/2003	10/17/2003	380	43	404.00				958.10	
Disconnect	14		10/21/2003		440	20						
Reconnect	15		10/23/2003		10							

System Date : October 26, 2003 Zone : 01 Book : 1 Records : 209 Total Records : 4,787 User : ADMIN

Figure 6 shows the maintenance modify window. As shown, there are two panels. The upper panel represents the search and some editable entries in the master file. The lower panel contains the ledger entries of the particular record in the master grid. You have to search the record first to open the account to be altered. There are two important fields in the upper panel. These are the *Mascode* and *Max Index*. *Mascode* located beside *MaxIndex* is the index or pointer to the ledger entries. *Max Index* is the highest number in the Index field of the ledger. In the above example, the *Max Index* contains 15 because it is the highest number in the ledger below. The rest are the



beginning balances. If ever you need to change that balance, just make the appropriate changes. Afterwards click Recalc Balances in the lower grid.

You may also change the entries in the ledger. Entry type will present to you the type of entries available. If you want to insert a transaction, just click the + sign in the bottom navigator. Choose the appropriate Ledger type from the drop down list in the Entry Type Column and enter the data then click check. For example if you want to insert a payment in between index 2 and 3 of the ledger of "DE GAMO, ERLINDA" just click + and enter the data then click check.

It should be mentioned that the *index* field in the ledger should be unique and in consecutive order. This is if you add an entry type in the next higher number in our case 4. Change *index* to run from one to the highest number. Don't forget to change the MaxIndex to that number in the upper panel and recalculate. Again, this dialog is not user friendly and is only intended to be used by system administrators and only in cases where there is no other choice. One word of advice, just post adjustment, it is much easier and safer.

SUMMARY

BILLING PROCESS

1. Setup Zone and Book.
2. Click Setup|Zone & Book.
3. Type in the particular Zone and Book to bill.
4. Click Billing|Meter Reading Form.
5. Print the form then hand it to the meter reader.
6. The following day enter the reading.
7. Do 1 and 2 then Click Billing|Post Meter Reading.
8. Enter all meter readings
9. Click Billing|Review Readings.
10. Print the prooflist.
11. Compare with the meter reading book.
12. Do 4 to 11 if necessary.
13. Print the bills
14. Post to ledger (check system date)

PAYMENT PROCESS

1. Click Collection|Post Payments (Water Bills) or Collection|Post Payments (COR)
2. Enter the collections
3. Click Collection|Review Payments
4. Print Prooflist
5. Compare with the receipts and actual cash
6. Go Back to 1, 2 and 3 if necessary.
7. Post to ledger.



PENALTY PROCESS

1. Setup Zone and Book.
2. Click Setup|Zone & Book.
3. Type in the particular Zone and Book to bill.
4. Click Billing|Penalties
5. Click Generate Penalties.
6. Print Prooflist
7. Review and make necessary changes.
8. Post to ledger.

ADJUSTMENT PROCESS

1. Click Billing|Post Adjustments

CUSTOMER PROCESS

This computer program covers the customer process from customer application to actual connection, disconnection and reconnection. A customer process starts with application.

CUSTOMER APPLICATION

Click Customer|Application. The windows shown in Figure 7 will open.



Figure 7

BCWIN - DEMO WATER CORPORATION

Setup Customer Billing Collection Inquiries Maintenance Quit

Customer Application

Edit List

Application No. Date Applied
03-04-0006 04/18/2003

Customer Name Address
XXX

Town/City Tel. No. Barangay

App. Fee Meter Deposit Gua. Dep
Materials Labor Others
O.R. No. O.R. Date
04/18/2003

Balance Mat'l's Balance App. Fee
Monthly Amort Monthly Amort
Start Date Start Date

Search Print Close

System Date : April 19, 2003 | Zone : 01 | Book : 1 | Records : 68 | Total Records : 2,073 | User : ADMIN

Click the “+” in the navigation button to add a customer. The Application No will be given automatically with the following format: Year, Month then series. Encode the pertinent customer data in their respective text boxes then click the check button to save the information. You may also look at the list of all pending applications by clicking the “List” in the tab on top of the dialog.

CUSTOMER ADD

Click Customer|Add to add a new connection to the database. The dialog is shown in Figure 8.



Figure 8

BCWIN - DEMO WATER CORPORATION
Setup Customer Billing Collection Inquiries Maintenance Quit

Customer Add

Account No. Application No. Date Applied
[] - [] - [] [] [] / /

Customer Name Address
[] []

Town/City Tel. No. Barangay
[] [] [] +

App. Fee Meter Deposit Gua. Dep
[] [] []

Materials Labor Others
[] [] []

O.R. No. O.R. Date
[] [] / /

Balance Mat'ls Balance App. Fee
[] []

Monthly Amort Monthly Amort
[] []

Start Date Start Date
[] / / [] / /

Date Connected Activation Date Rate Type
04/19/2003 04/19/2003 Metered

Meter Number Brand Initial Rdg Date Installed
[] [] + [] 04/19/2003

+ Add Close

System Date : April 19, 2003 Zone : 01 Book : 1 Records : 68 Total Records : 2,073 User : ADMIN

Encode the appropriate account no in the text box. The program checks for the validity of the account number before inserting it into the database. You may input the application number in the “Application No.” text box to add a customer listed in the application database or click the button beside it to select from a list. The customer information from application will be copied in their respective text boxes. Also input meter information in the lower group box then click “Add” button to append a new customer to the database.

CUSTOMER ADD/MODIFY

This dialog (see Figure 9) is for data administrators only because important database information can be changed in this dialog. The data marked as “1” contains the various beginning balances. These balances are those balances prior to computerization. For instance, if you started computerization in the month of March, the balances that will be encoded in the boxes should be the balances as of end of February. You may encode the Water Sales balance in the Water Sales text box, Account Receivable Others (ARO) 1 balance in Mat’ls balance etc.



The portion marked as “2” in Figure 9 are for loans other than water. Some entities are giving material loans or Application Fee loans. Others transfer large accounts receivable from A/R to notes receivable which is billed monthly. In this program you may include a maximum of two loans of this nature because only three customer ledgers are provided. You should decide which of those three loans previously mentioned to include in the program. These loans will be part of the billing and collection process. The total payable should be encoded in the unbilled text box and the monthly amortization in the monthly amort text box. The amount in the monthly amort text box will be billed monthly until the unbilled portion becomes zero.

Some entities are giving discounts to selected consumers like barangay halls, and other government facilities. In some cases, they are giving discounts to the consumers that are not provided with a 24 hour water service. You may encode the volume of water in cum that is provided for free in the “In Vol” marked as “3” or the percent discount in the percent text box. For example if you place 10 in “In Vol” and the customer consumed 15 cum, the bill is calculated based only on a 5 cum consumption. If you place 10 in the percent text box, the actual bill will be computed based on the consumption minus 10 percent.

The portion marked as “4” is the temporary storage of meter reading information. This is where the program saves the previous and present meter reading. The text box “Cons. Prev M” contains the usage of the previous meter (This is done automatically by the program when you replace the meter using Customer|Replace Meter) which is added to the present consumption during billing.



Figure 9

1

2

3

4

CUSTOMER DISCONNECT MARK/UNMARK

There are two methods in which you can bill the last usage of disconnected consumers. The first method is to disconnected it right away upon actual field disconnection and print the bill of its last usage then give the bill to particular consumer. This way, the consumer is notified of the amount of the last bill which should be paid plus a reconnection fee if they wish to reconnect. The disadvantage of this method is that it requires additional effort for the disconnection team to



do the actual disconnection then go back to the office to print the bill and finally return to the consumer and serve the bill. This will also add the particular consumer in the daily billing report although it is not the proper time of billing for the particular zone.

The second method is to mark first the consumer for disconnection. Consumers marked for disconnection are still active in the program but are already included in the list of disconnected accounts for the month. When the proper billing period occurs, it is billed like it is still active but is automatically disconnected when posted to the ledger. Therefore, there is no way that the billing clerks will forget to disconnect. This is the recommended method of disconnection because all billings are recorded in the date where the zone should be billed.

Click Customer|Disconnect Mark/Unmark to disconnect or mark a customer for disconnection (see Figure 9). Search for the particular customer. Enter the data in the respective boxes then click *Mark* button (second disconnection method) if you only want to mark the customer for disconnection or click the *Disconnect* button to disconnect it right away (first disconnection method).

You may also click the temporarily check box to later remind you of the type of disconnection. This is important in some entities because their reconnection fee is lower for temporary or voluntary disconnection.

Figure 10

BCWIN - DEMO WATER DISTRICT
Setup Customer Billing Collection Inquiries Maintenance Quit

Customer Disconnect

Account No. : 011 - 102 - 00001
Customer Name : DE GAMO, ERLINDA
Address : MENZI BRGY.

Meter No. : 123
Date Disconnected : 10/26/2003
Last Reading : 10
Previous Reading : 10
Consumption :
Disconnection Fee :
OR No. :
Date : 10/26/2003
Temporary :

Disconnect Mark Cancel Close

System Date : October 26, 2003 Zone : 01 Book : 1 Records : 209 Total Records : 4,787 User : ADMIN

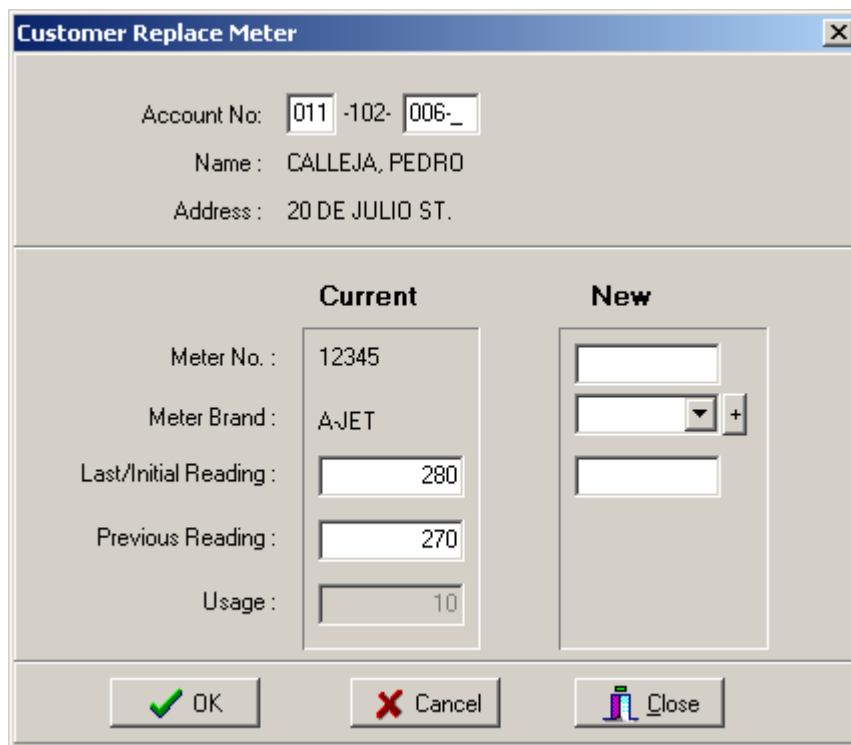
CUSTOMER RECONNECT

Reconnection process is very straightforward. Click Customer|Reconnect then search for the connection to reconnect. Enter the data needed then click reconnect.

CUSTOMER REPLACE METER

Click Customer|Replace Meter to change the meter. Search for the particular account by entering the account number in the proper text box. Enter the New meter number, brand the last reading and the initial meter reading. Last reading is the reading of the old or replaced meter. The consumption in the old meter will be saved by the program and will be added to the consumption of the new meter during billing. The initial reading is the meter reading of the new meter prior to installation. This will be used by the program as the previous reading upon billing. After encoding all the data needed, click ok or click cancel if you do not want proceed with

Figure 11



CUSTOMER CHANGE RATE TYPE

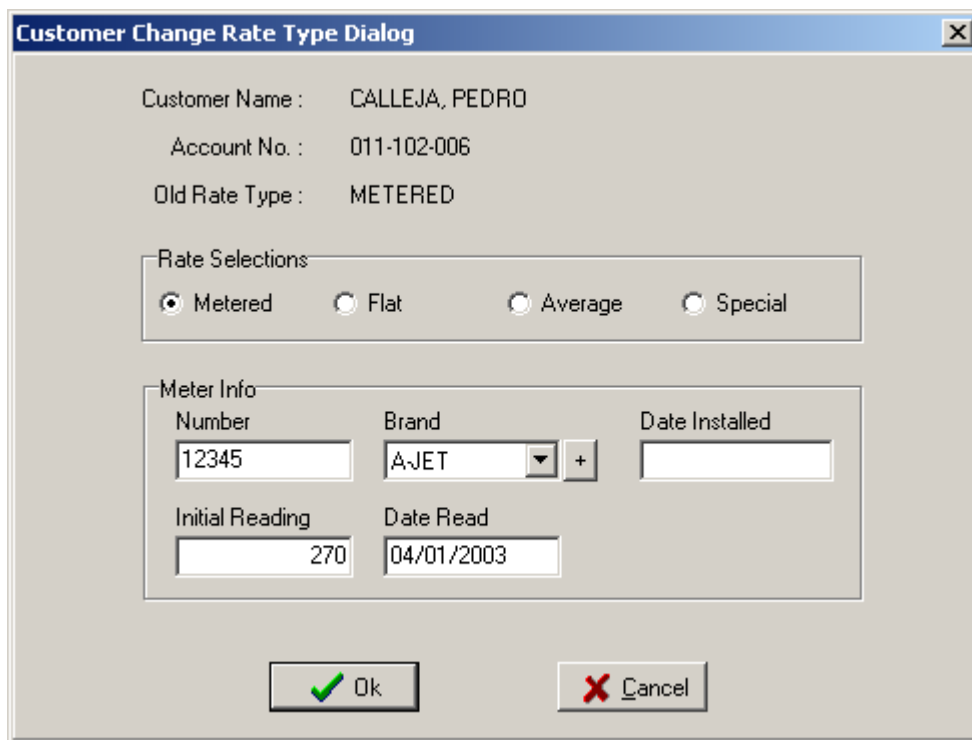
The four rate types used in this program are as follows:

- Metered - This pertains to metered consumers. Water bill is based on meter reading and LWUA approved water rates.

- Flat - Flat rates are billed the same amount monthly. This rate type is discouraged by LWUA because the consumption cannot be properly recorded. In addition, consumers don't conserve water because they pay the same amount regardless of how much water they consume.
- Average - This type of rate is usually used if the meter cannot be read or is damaged. The consumption is based on the average consumption of the prior months depending upon how many months set in the System Factors.
- Special - Special rate is useful when there are connections which does not follow the LWUA approved water rates. These consumers are billed depending upon the approved board policy. The user may encode the meter reading then the program will compute the amount based on LWUA approved water rates. However, the user is free to change the amount depending upon the district policy.

You may change the rate type by Clicking Customer|Change Rate Type. Then search the particular account. Click Change and select the desired rate type then click Ok. This dialog can be accessed also in the Post meter reading by keying Ctrl+R or by clicking the button beside the rate type text box.

Figure 12



OTHER CUSTOMER PROCESSES

The rest of the customer process like Change Account No, Change Name, Address, Classification, Meter Size are much the same as change rate type and will not need further explanation.



All changes to customer data items like change meter, change name, change address, classification etc., are available in the Customer Menu. You can also do the changes in the Customer|Add Modify but the changes will not be reflected in the ledger. For instance, if you change the name because it was misspelled then do it in the Add/Modify, but if you change the name because another tenant occupied the particular address then you should change it in the Customer|Change Name. You will see that there will be an entry added in the ledger that will look like this

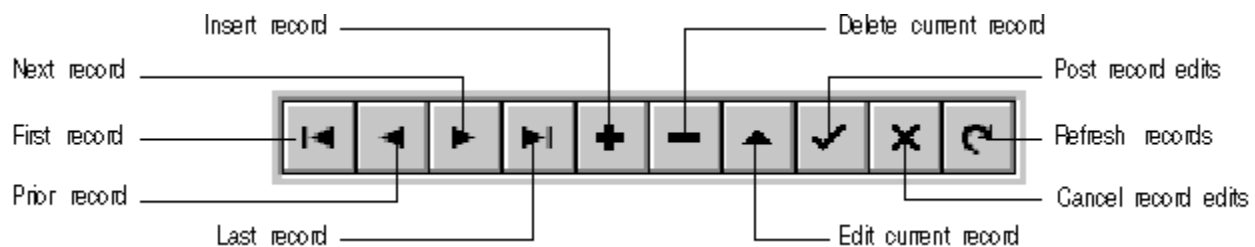
Refdate	Particulars
11/2/2001	Change Name – Robert Reyes

The name of the previous occupant will be displayed. So you will have the history of who were the occupants of that particular address.

THE NAVIGATOR

The Navigator provides users a simple control for navigating through records in a dataset, and for manipulating records. The navigator consists of a series of buttons that enable a user to scroll forward or backward through records one at a time, go to the first record, go to the last record, insert a new record, update an existing record, post data changes, cancel data changes, delete a record, and refresh record display.

The following figure shows the navigator that appears in almost all database windows in the program. It consists of a series of buttons that let a user navigate from one record to another in a dataset, and edit, delete, insert, and post records.



The following table describes the buttons on the navigator.

Button Purpose

- First** Calls the dataset's First method to set the current record to the first record.
- Prior** Calls the dataset's Prior method to set the current record to the previous record.
- Next** Calls the dataset's Next method to set the current record to the next record.
- Last** Calls the dataset's Last method to set the current record to the last record.
- Insert** Calls the dataset's Insert method to insert a new record before the current record, and set the dataset in Insert state.



Delete Deletes the current record. If the Confirm Delete property is True it prompts for confirmation before deleting.

Edit Puts the dataset in Edit state so that the current record can be modified.

Post Writes changes in the current record to the database.

Cancel Cancels edits to the current record, and returns the dataset to Browse state.

Refresh Clears data control display buffers, then refreshes its buffers from the physical table or query. Useful if the underlying data may have been changed by another application.



E. WATER QUALITY MONITORING

Water Sampling for Bacteriological Analysis

Drinking water supplies should be free from contamination by human and animal excreta which can contain bacterial contaminants. Potential threats of microbial contamination must never be compromised.

No organism fulfills all the criteria of an indicator organism, but the coliform group of bacteria (also called total coliform which includes E.Coli) fulfills the most.

To determine the safety of and acceptability of water supply, appropriate laboratory examinations should be conducted on representative samples taken at all different areas in the consumption of water supply.

The minimum frequency of sampling established in the Philippine National Standards for Drinking Water 2007 for waterworks system (a system composed of source, a reservoir, a piped distribution network and household taps) is 20 samples for 100,000 population served and an additional 1 sample per 10,000 population monthly.

MONTH	SAMPLING POINTS	REMARKS
January	Brgy. 8-Poblacion Dapa	Passed
	Brgy. 9-Poblacion Dapa	Passed
February	Brgy. 10-Poblacion Dapa	Passed
	Brgy. 11-Poblacion Dapa	Passed
March	Brgy. 13-Poblacion Dapa	Passed
April	Brgy. 1-Poblacion Dapa	Passed
	Brgy. 2-Poblacion Dapa	Passed
May	Brgy. 3-Poblacion Dapa	Passed
	Brgy. 12-Poblacion Dapa	Passed
June	Brgy. 4-Poblacion Dapa	Passed
	Brgy. 6-Poblacion Dapa	Passed
July	Brgy. 7-Poblacion Dapa	Passed
	Brgy. 8-Poblacion Dapa	Passed
August	Brgy. 9-Poblacion Dapa	Passed
	Brgy. 10-Poblacion Dapa	Passed
September	Brgy. 11-Poblacion Dapa	Passed
	Brgy. 12-Poblacion Dapa	Passed
October	Brgy. 13-Poblacion Dapa	Passed
	Brgy. 1-Poblacion Dapa	Passed
November	Brgy. 2-Poblacion Dapa	Passed



	Brgy. 3-Poblacion Dapa	Passed
December	Brgy. 4-Poblacion Dapa	Passed
	Brgy. 5-Poblacion Dapa	Passed

Water Sampling for Physical and Chemical Analysis

Various forms of chemicals, which occur naturally in the environment and in raw water or used in agriculture, industries, and water treatment processes or domestically, may be found in water supplies. Although acceptability aspects of drinking water quality does not have adverse health implications, standards are set to satisfy the need of consumers for a colorless, odorless and tasteless drinking water.

The minimum frequency of sampling established in the Philippine National Standards for Drinking Water 2007 for waterworks system is once a year.

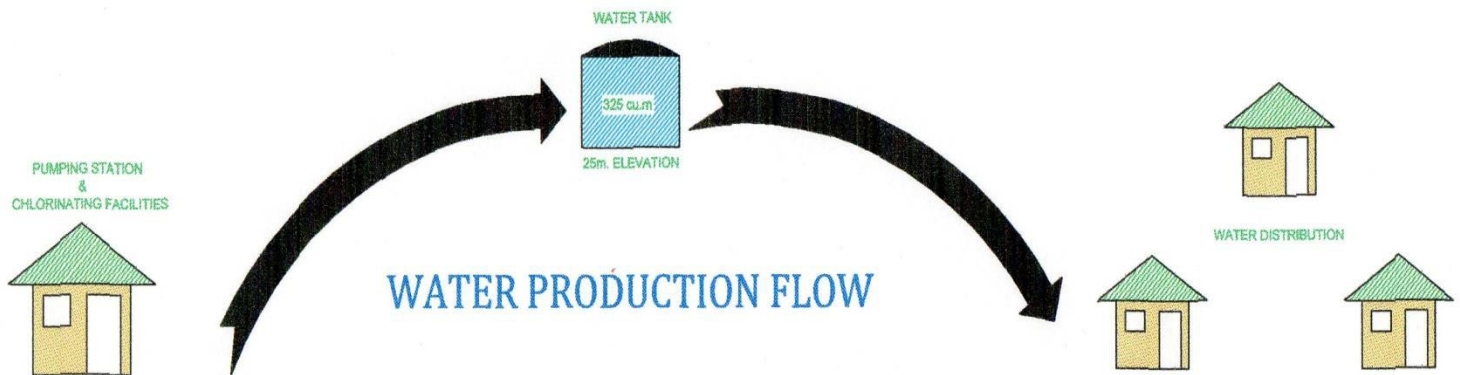
DATE	LOCATION	REMARKS
December 22, 2015	Spring (BETO SOURCE 1) Brgy. 12 Dapa, SDN	Non-Conforming Parameter/s TDS, Chloride
November 23, 2015	Domagtoy Source Brgy. 12 Dapa, SDN	Non-Conforming Parameter/s NONE
November 23, 2015	Cervantes Source Brgy. 12 Dapa, SDN	Non-Conforming Parameter/s Odor
October 23, 2015	Shallow Well (Jucay Source) Brgy. 4 Dapa, SDN	Non-Conforming Parameter/s Color, Hardness total, Manganese
October 23, 2015	Tesado Source Brgy. 10 Dapa, SDN	Non-Conforming Parameter/s TDS, Chloride, Hardness Total
October 23, 2015	Deepwell (A. Adapon S2) Brgy. 12 Dapa, SDN	Non-Conforming Parameter/s TDS, Chloride, Total Hardness, Manganese
March 30, 2015	Deepwell (Lonngits Solis) Brgy. 5 Dapa, SDN	Non-Conforming Parameter/s NONE
January 29, 2015	Shallow well (Don Paulino) Brgy. Don Paulino Dapa,	Non-Conforming Parameter/s Color, Turbidity, Manganese



F. WATER PRODUCTION

SOURCE OF WATER

The source of Water could either be classified as surface water or spring. It has a maximum yield of approximately 45 liters per second. It is a geologic depression in a form of solution chamber at the base of a hill. It is believed to be recharged by a square km. watershed basin located about 1 km. north of the collection point. The spring source is located approximately 3 km northeast of the town proper. The water from the spring is pumped for 24 hours using a centrifugal motor pump and submersible motor pump 20Hp with a capacity of 17.5 lps to a 325 cubic meter ground reservoir measuring 15 x 15 x 3 meters. From the reservoir, water is distributed by gravity to the service area.



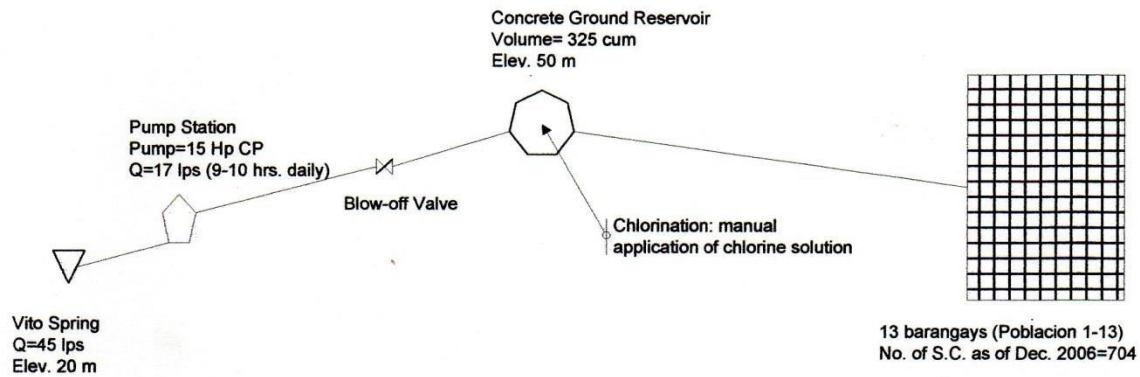


FIGURE 4.1.1

SYSTEM LAYOUT OF EXISTING WATER SUPPLY SYSTEM
METRO SIARGAO WATER DISTRICT



G. MAP OF THE DISTRIBUTION SYSTEM

