VANUATU WATER QUALITY DATABASE

USER MANUAL

by

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FOREWORD

This manual is a user handbook for the Water Quality Database. This system is based on Microsoft Access 2000 and describes how to navigate around the Water Quality Database.

This manual is not intended to tutor you on how to use Microsoft Access. Instead it is a guide that describes how to operate and troubleshoot the Water Quality Database system and will help familiarise you with all aspects of the package and provide a reference tool for questions you might have in future.

It is strongly recommended that the users read the appropriate user manuals for further knowledge of Microsoft Access.

The Water Quality Database is designed to be fast and takes full advantage of modern PCs. It is easy to master and can be easily installed and run by personnel with very basic computer skills.

REQUIREMENTS

Microsoft Office 2000

Full installation of MS Access 2000 version

GETTING STARTED

Entering the Water Quality Database

Locate the icon from the Windows 2000 screen for the above database and double click it with the left button of your mouse.


SOPAC Water Quality Database

The database has a security system which requires access for Administrator and User Group. Administrator – has full access for maintenance and modification of the application. Is responsible for assigning username and password to the authorised personnel.

The username and password is given to the water quality monitoring staff who would be entering data, viewing and querying data.

The following prompt comes up to verify the right username and the privilege.
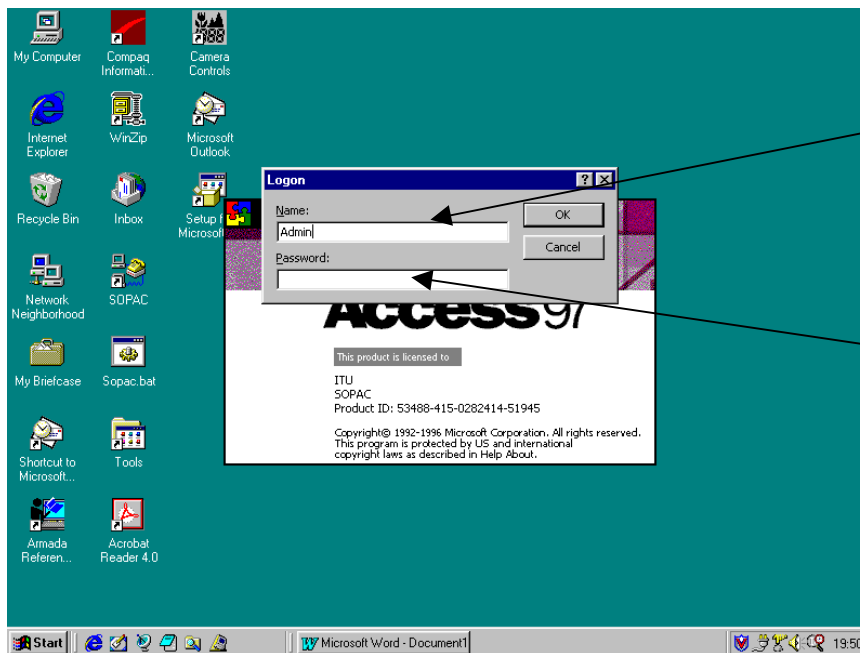
Type Login Name Here

Type in Password Here.

Note you will not see what you are typing.

Your Password will show ***** on the screen.**

If you have access as an Administrator type in your login name: Administrator
Now type in your Password.

If you are a user type in login name: Guest

After typing in the login and password Click on OK button.

As soon as you have entered in the correct login name and password, Access will open up the database.

MAIN SCREEN OR "SWITCHBOARD"

This can be viewed as the control centre for the database, from which the user can navigate their way around the different facilities of data entry, querying and presentation in report form.
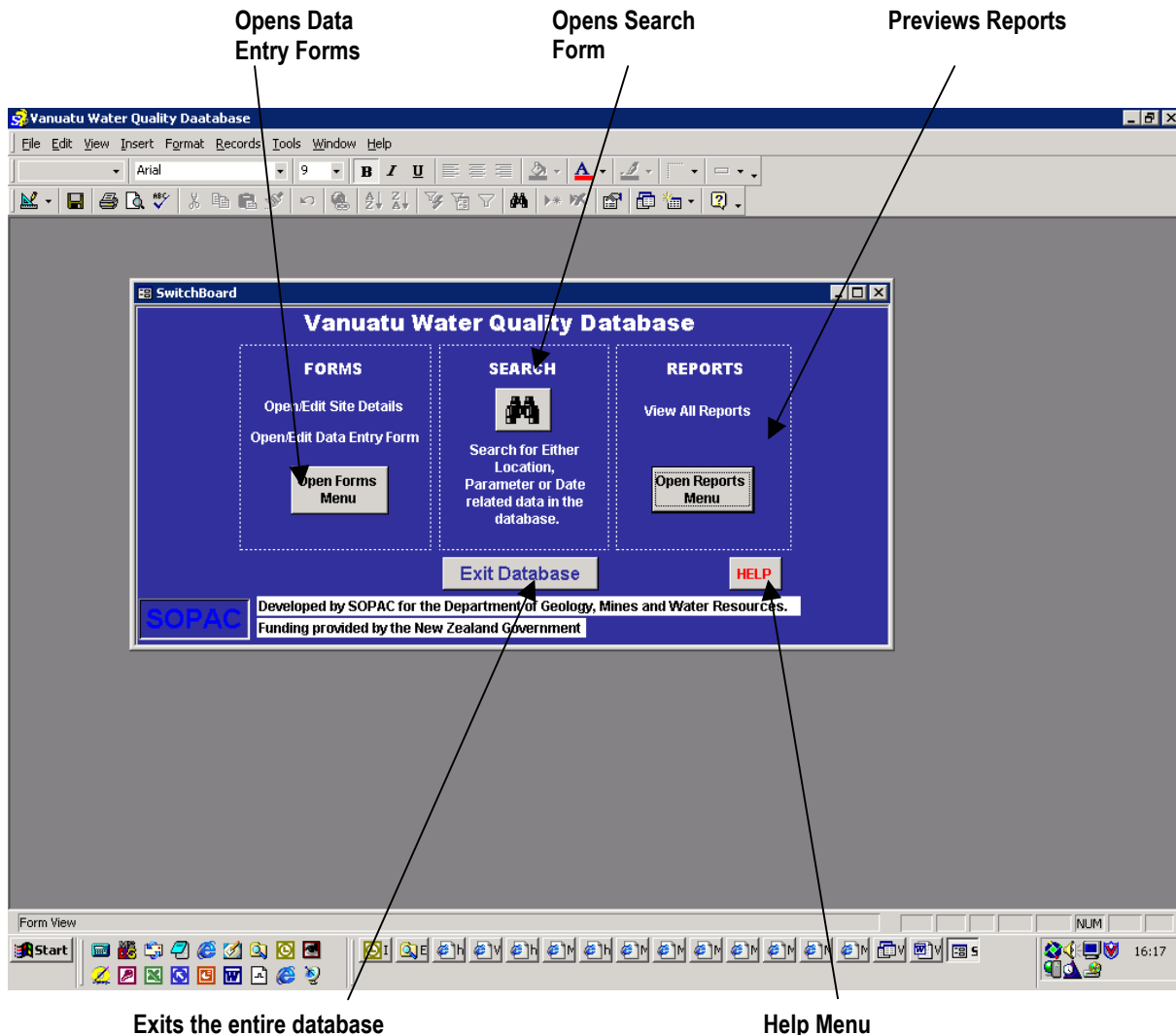
Forms – Opens up a menu to select data entry forms for editing or adding new data, viewing data and for data printouts.

Query – Opens up a Search Form for you to find data related to Location Name, Site Type, Parameters and/or Date interval.

Reports – Opens up a menu to select reports for viewing and printouts.

FORM MENU

Features to note on a Form:

Forms are designed to be user-friendly, and the user should be aware of the following:

Fields – these are the items of information to be stored in the database. Each time a new record is entered on a form, a new record is added to the table.

Navigation buttons – these help the user to move or 'navigate' through the records.

Combo boxes – A combo box can make data entry easier, quicker and more accurate by presenting a scrollable list from which to select.

To enter data for the different fields, click on the Tabs, which will show the parameters that are available for data entry.
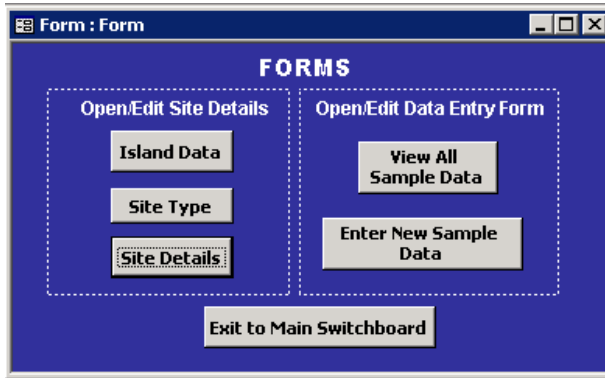
Help – The database has a customised Help file which tells you in simple ways how to use the database.

Error Messages – these will come up when data has not been entered properly.

Record Selectors:
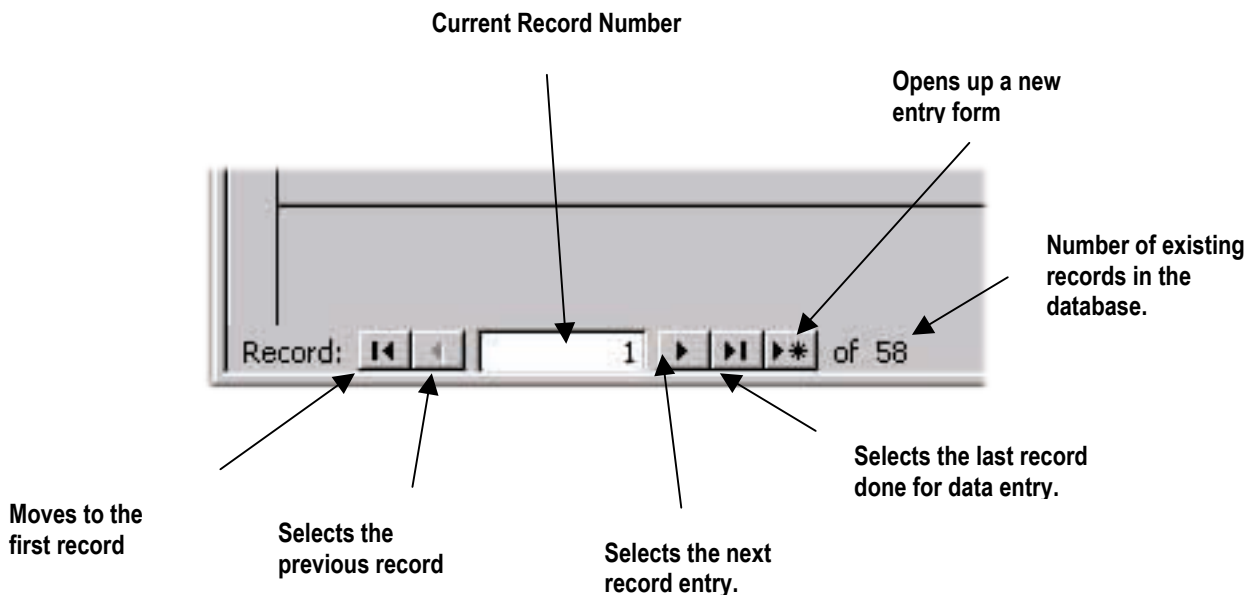
DATA ENTRY FORMS

Island Data Form

Enter in Island Names and ID

A list of Island Names with sampling sites present.

Use the text box to type in Island Name; this should only be entered in once. Please check the list of Island Names before adding any new Names by previewing the report.

After you've added a new Island Name click on Save Record then Exit to return to the Main Menu.

Site Type Form

Enter in Site Types and ID

Site Type indicates the type of water source where the sample is tested.

Use the text box to type in the site type.

Enter in new Site Type for the list. Do not enter in Site Type twice; check the list before entering a new site type by previewing the report.

Site Details Forms

Steps for Adding in New Location

Enter in Site Details.

Entering in Site Details data certain fields are required to be entered. The **required fields** are Island ID and Island Name, Site ID and Site Name, Site Type and Site Number. These data should be entered in first before filling in any other details.

Date   – Year/Month/Day format
Longitude – E
Latitude   – S
Altitude   – m asl

It is also very important that Sample Sites only be entered once and not repeated. Before entering in any new data, preview the report and check the list of data entered.
Suggest that an updated list be printed to review before adding a new site.

After you have done this, Save and Close the Site Details Entry Form.

NOTE: The new site name will be added to the drop down list for selection in your Sample Form. This drop-down list arranges Site Names in alphabetical order.

Sample Data Form

This lets you into the Water Quality Database Form for you to enter your Sample data.

Enter Sample Data by using this form shown below.

Results from water testing are entered into this form.

Steps for Sample Data Entry

Enter Site Number

Each new sample data entered is given a unique number which is auto generated.

Take the following steps for data entry:

First select Island Name from the Island Name 'drop-down' list, then select from Site Name from the Site Name 'drop-down' list. Once an Island Name is selected, the choices for Site Names are only related to that particular Island.

It is important to enter in Island Name and Site Name first before entering in any other data.

You can also add a new site by clicking on the [ADD Site] button, if that site is not in your list.

Open Site Details Form – To enter in New Location Sites that are not in the list. (**See section on Site Details.**)

Now Enter in:

Site Number – this is your 7 digit code typed into the text box.

Date – Year/Month/Day format

Time – Hour/Minute/Second format

NOTE: These were the **required fields**.

If these fields are not entered first then the database will not enter any other data. You will get error messages.

Entering Parameters

NOTE: This database only accepts data for the above parameters and units

Enter the required parameter data from your log sheet. You do not need to enter in all the parameters, only those that were sampled and tested.

If parameter has no data, fields can be left blank.

The following Parameter tests results can be inputted:

Field Parameters

Temperature	– degrees Celsius (^{o} C)
Conductivity	– milliSiemens/cm (mS/cm)
Dissolved Oxygen	– milligrams/Litre (mg/L)
pH	– pH units
ORP (Oxidation Reduction Potential)	– millivolts (mV)
Salinity	– Practical Salinity Scale (PSS)
Depth	– meters (m)
Clarity	– meters below surface (mbs)
% Dissolved Oxygen	– %
Total Dissolved Solids (TDS)	– g/L
Turbidity	– Nephelometric turbidity units (NTU)

Bacteriological

Total Coliform	– colonies per 100mL sample (per/100mL)
E.Coli	– colonies per 100mL sample (per/100mL)
Entercocci	– colonies per 100mL sample (per/100mL)

Chemical

Alkalinity	– mg/L (as $CaCO_3$)
Ammonia	– mg/L NH_3
Calcium	– mg/L (as $CaCO_3$)
Chloride	– mg/L
Chlorine (Free)	– mg/L free Cl_2
Chlorine (Total)	– mg/L total Cl_2
COD (Chemical Oxygen Demand)	– mg/L
BOD (Biochemical Oxygen Demand)	– mg/L
Hardness	– mg/L as $CaCO_3$
Iron	– mg/L Fe
Magnesium	– mg/L
Nitrate	– mg/L NO_3
Nitrite	– mg/L NO_2
Sulphate	– mg/L SO_4
Phosphorus	– mg/L PO_4
Suspended Solids (Total)	– mg/l

Click on [Save Record] to save your data. You could also preview your data in report format for printout. Exit to the Form Menu when required.

Saving a New Entry

Once entries have been made into the fields, save the record. Clicking the **Save Record** button, located on the form.

Clicking the **Close button** will exit the entry form and take you back to the Form Menu.

SEARCH QUERY

To search the records of data inputted, click on the Search button with the binoculars icon. This can be accessed from the database switchboard.

Clicking Search button (binoculars icon), opens a form.

Features on Search Form

Steps for Data Search

In searching for data, it is not necessary to fill in all of the fields:

Select from the 'drop down' list Island Name, Site Type and /or Site Name.

When selecting parameters, highlighting the parameter from the list box and click on [Add>] button. This will move your choice of parameter into its corresponding list box. Your can also select and remove unwanted parameters by clicking on [<Remove] button.

If you need to search date intervals, Type in Date from and Date To into the text box provided.

You can select one or a combination of any criteria fields provided depending on how you want your search result.

Common Error Messages

1.   'The text you entered isn't an item in the list'
     – Choose from the Combo Box.
     This applies to Combo Boxes when you try to enter a data that is not in the list.

2.   Date is not entered in the MONTH/DAY/YEAR format. If you use a different format the results for your search will NOT be Correct.

3.   Message Box saying 'No Criteria Specified'
     – You have not entered any information for the query to run its search.

4.   To view the results of your search click on the **FIND RECORD** button.
     –   The database will automatically search for what you asked it.
     Once it has found those records then it will display it in another form for you to view the results.

5.   If you want to make another Search:

Clicking the **REFRESH** button will clear all the text boxes so you can make the next selection for your search.

SEARCH RESULTS

To view the results of your search a form similar to the one below will appear on your screen.

Closes Search Results

Preview Report for printing

Record Selectors

Data

REPORTS

Upon clicking the Preview Report button, your screen should show a formatted report with the data resulting from your search.

This can be printed out for your reporting.

Parameter Reports

Field Parameter Report

Report showing all your field parameter data.

Field Parameters Search Result

Site Number	Date Yy/Mm/Dd	Tempt degCel	Cond mS/cm	Dis Oxy mg/L	%Dis Oxy %	pH	Salinity PSS	TDS	ORP mV	Turbidity NTU	Clarity mbs	Site Name
1233453	11/09/01								5	2		wala
2203316	15/09/01	20	1	4		5		30	2	3	3.85	site b
1233453	18/09/01								3	4		wala
23450622	20/09/01					2			0.6			site d
1233453	22/09/01							25			1.5	wala
23450622	26/09/01	22	6			7						site d
23450622												site d
1233453	01/09/01	25.15	0.546	4.97	57.0	7.17	0.26	0.4	64	0.53		wala
1233453	01/09/01									0.68		wala
1233453												wala
1233453	20/10/01	27	50	6								wala
2203316	29/09/01	25		4.97								site b
1233453	30/09/01	26		6.09								wala
12360214	01/10/01	27		4.05								qawa
23450622	03/10/01	25		6.4								site d
12360214	05/10/01	23		7.9								qawa
1233453	10/10/01	28		10.1								wala
2203316	15/10/01	23		3.2								site b
1233453	20/10/01	25		5.5								wala
12360214	12/11/01	27.8				9.5						qawa
12360214	12/11/01	29										qawa

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Bacteriological Parameters Report

Report showing all your bacteriological parameter data.

Bacteriological Parmeters Search Result

Site Number	Date Yy/Mm/Dd	Total Coliform per 100ml	E. Coli per 100ml	Entercocci per 100ml	Site Name
1233453	11/09/01	100	25		waila
22032316	15/09/01		50	25	site b
1233453	18/09/01	250			waila
23450622	20/09/01	75		25	site d
1233453	22/09/01				waila
23450622	26/09/01	100		40	site d
23450622					site d
1233453	01/09/01	81	3		waila
1233453	01/09/01				waila
1233453		40	25	15	waila
1233453	20/10/01	18	10	8	waila
22032316	29/09/01	13	10	3	site b
1233453	30/09/01	30	15	15	waila
12360214	01/10/01	5	5	0	qawa
23450622	03/10/01	2	2	0	site d
12360214	05/10/01	20	15	5	qawa
1233453	10/10/01	23	20	3	waila
22032316	15/10/01	25	15	10	site b
1233453	20/10/01	45	40	5	waila

Chemical Parameters Report

Report showing all your chemical parameter data.

Chemical Parameters Search Result

Site Number	Date Yy/Mm/Dd	Alkalinity mg/L	Ammonia mg/L	Calcium mg/L	Chloride mg/L	Chlorine Free mg/L	Chlorine Total mg/L	COD mg/L	BOD mg/L	Hardness mg/L	Site Name
1233453	11/09/01	20			5	5	6	50		0.5	waila
22032316	15/09/01			6			2		20		site b
1233453	18/09/01	15	5					80			waila
23450622	20/09/01						10		0.5	0.02	site d
1233453	22/09/01							20		0.25	waila
23450622	26/09/01										site d
23450622											site d
1233453	01/09/01										waila
1233453	01/09/01										waila
1233453											waila
1233453	20/10/01	0.6									waila
22032316	29/09/01										site b
1233453	30/09/01										waila
12360214	01/10/01										qawa
23450622	03/10/01										site d
12360214	05/10/01										qawa
1233453	10/10/01										waila
22032316	15/10/01										site b
1233453	20/10/01										waila
12360214	12/11/01										qawa
12360214	12/11/01										qawa

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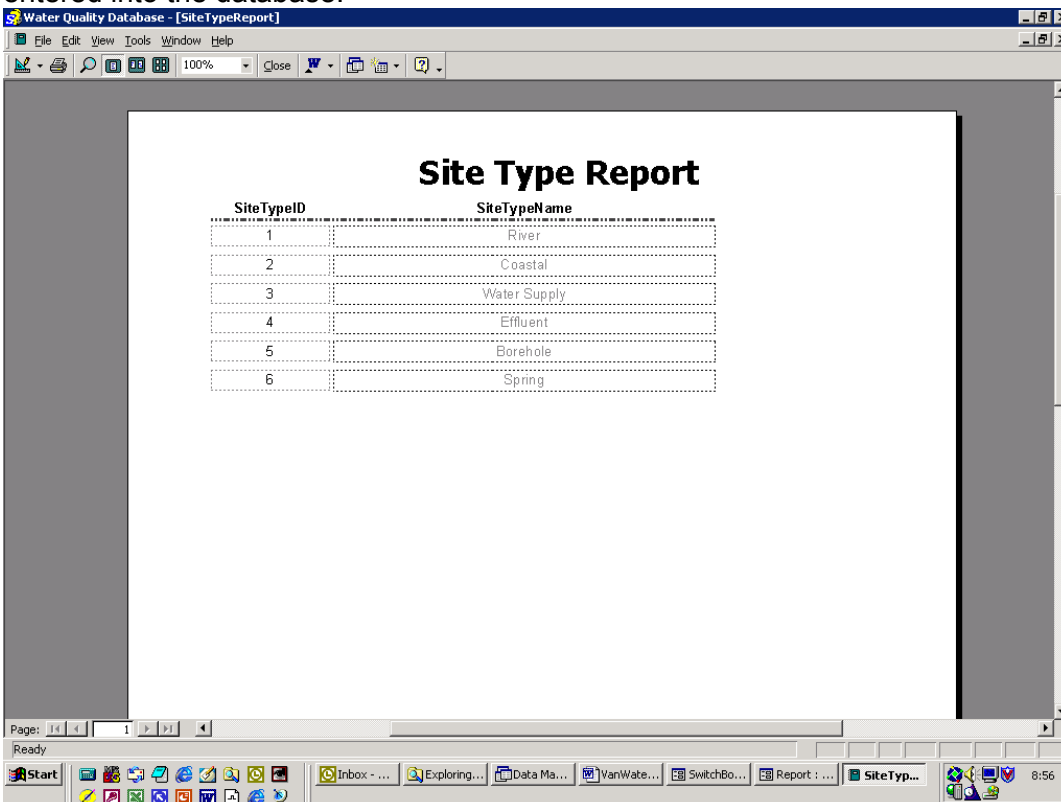
Island Report

Island report can be generated with all island names and Island IDs that has been entered into the database.
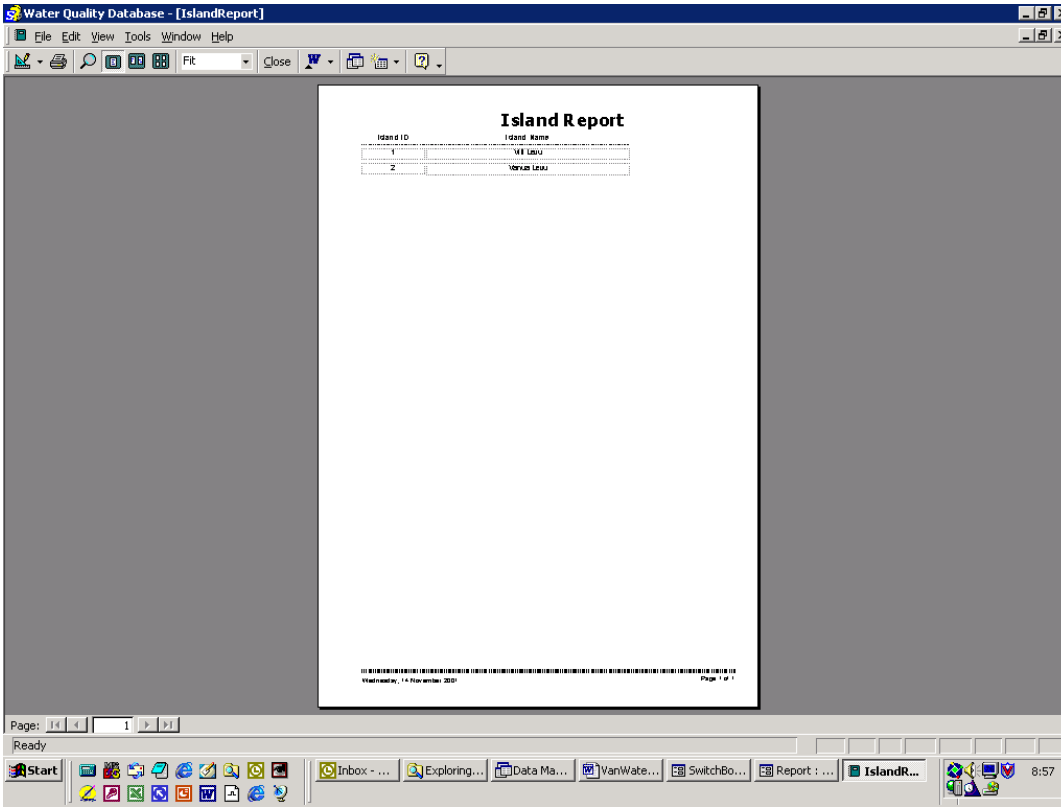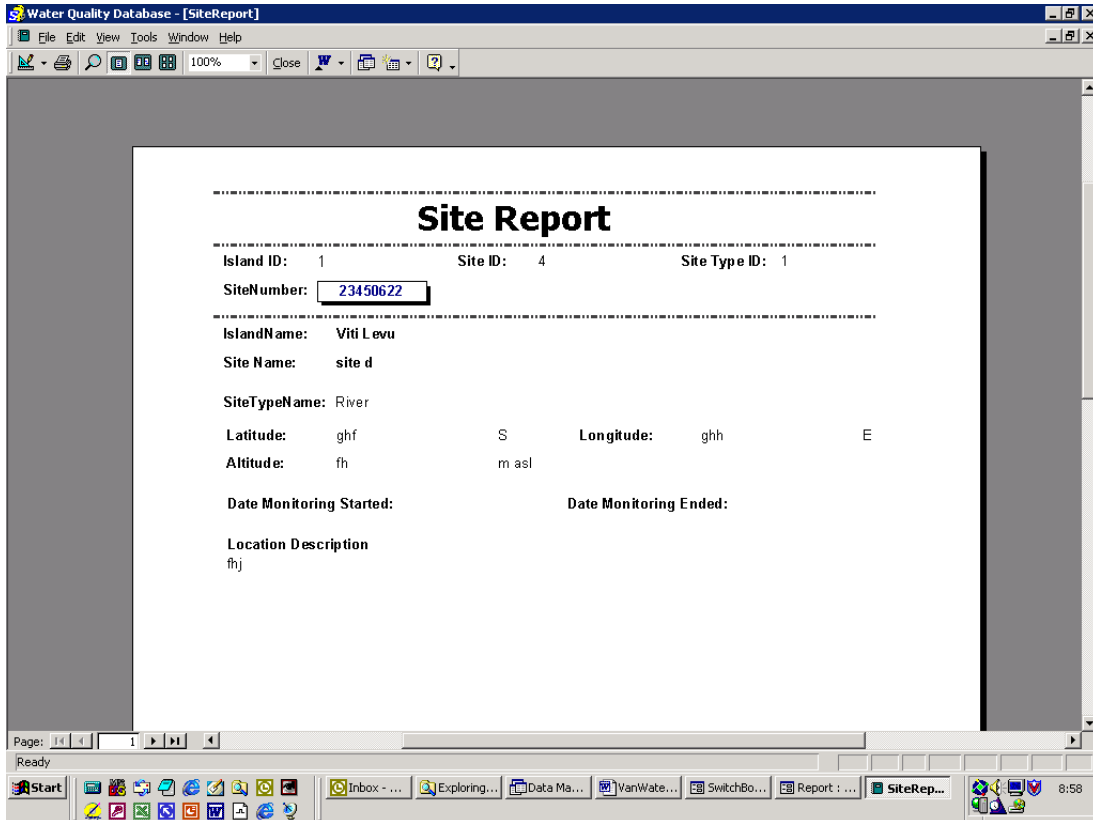

Site Type Report

Site Type report can be generated with all site type names and site type IDs that has been entered into the database.

Site Details Report

Site report can be generated with all site details that has been entered into the database.
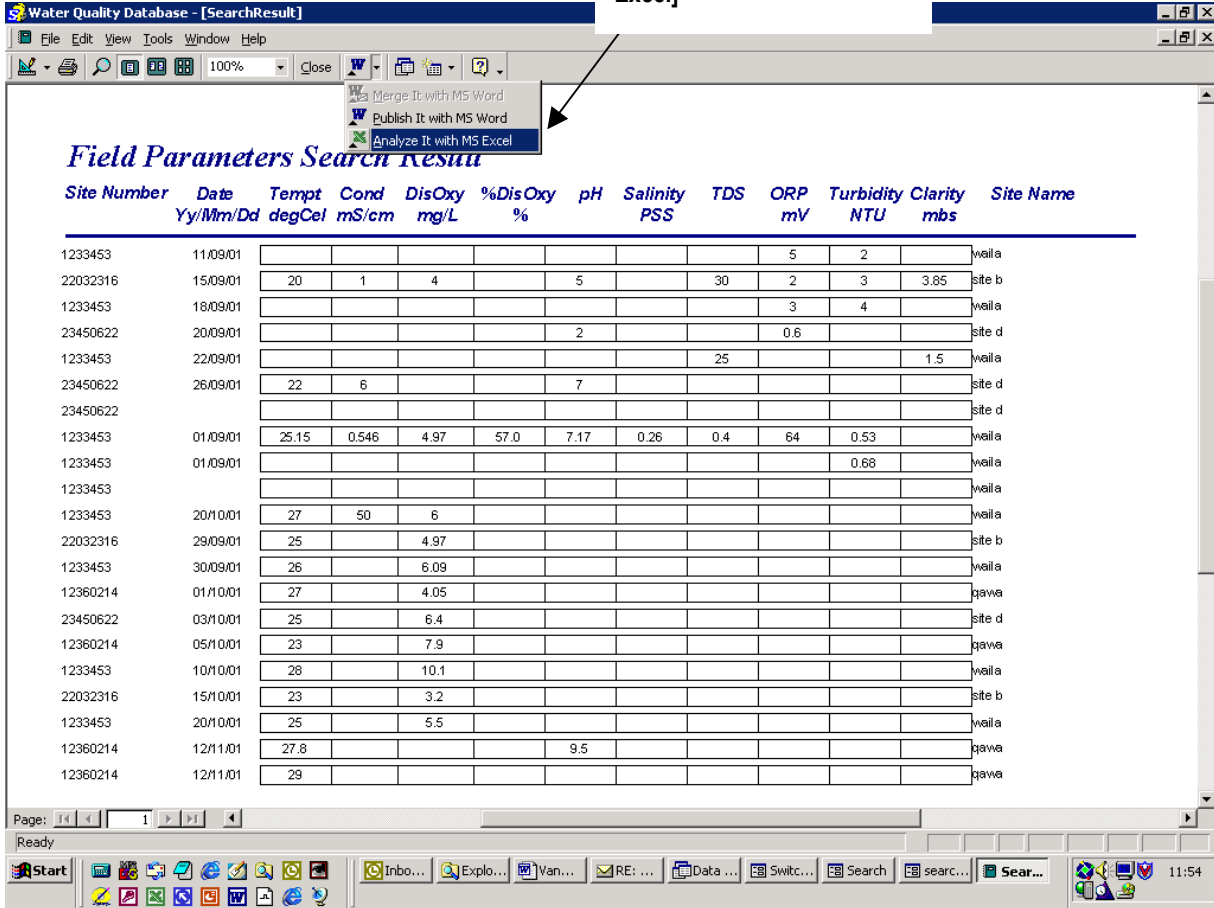

Sample Report

Sample report can be generated with all sample data that has been entered into the database.

EXPORTING DATA INTO MS EXCEL

After you have previewed your data in report format, this can also be exported into MS Excel. Once exported, you can use your data to generate graphs.

Select [Analyze It with MS Excel]

After exporting to MS Excel, this is what it will look like in your spreadsheet.
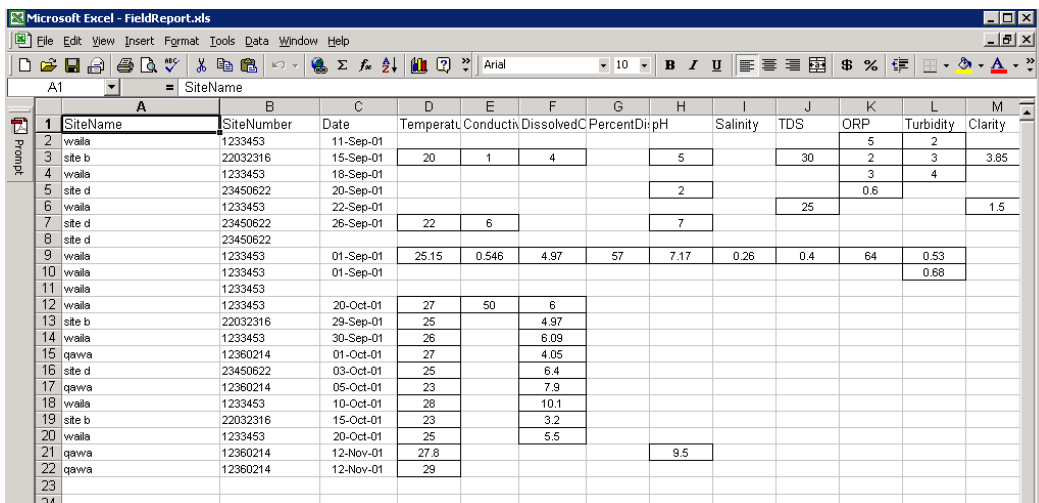
APPENDIX

Water Sample Analysis Form

WATER SAMPLE ANALYSIS FORM

Department of Geology, Mines, & Water Resources

Sample ID:	*from*	Chain of Custody No.:

Site Number:

Location:

Project:

Sampled by:

Water Source:
- ☐ Coastal   ☐ Borehole
- ☐ Water Supply   ☐ Spring
- ☐ Effluent   ☐ Private

FIELD MEASUREMENTS

Tempurature:		°C
Conductivity:		ms/cm
Dissolved Oxygen:		mg/L
pH:		
Salinity:		PSS
TDS:		g/L
% Dis. Oxygen:		
ORP:		mV
Turbidity:		ntu
Clarity:		mbs

Bacteriological Results

Total Coliforms:		Colonies per 100 mL of sample
E. Coli:		Colonies per 100 mL of sample
Entercocci:		Colonies per 100 mL of sample

Chemical Analysis

Alkalinity:		mg/L	Iron:		mg/L
Ammonia:		mg/L	Magnesium:		mg/L
Calcium:		mg/L	Nitrate:		mg/L
Chlorine (Free):		mg/L	Nitrite:		mg/L
Chlorine (Total):		mg/L	Sulphate:		mg/L
COD:		mg/L	Phosphorus:		mg/L
Colour:		mg/L	Suspended Solids (Total):		mg/L
Hardness (as $CaCO_3$):		mg/L			

Comments:

Form Completed by:		on	
Entered into Water Quality Database by:		on	