

# **E D M S Professional**

**Environmental Data Management System**



**A data management system for the environmental professional**

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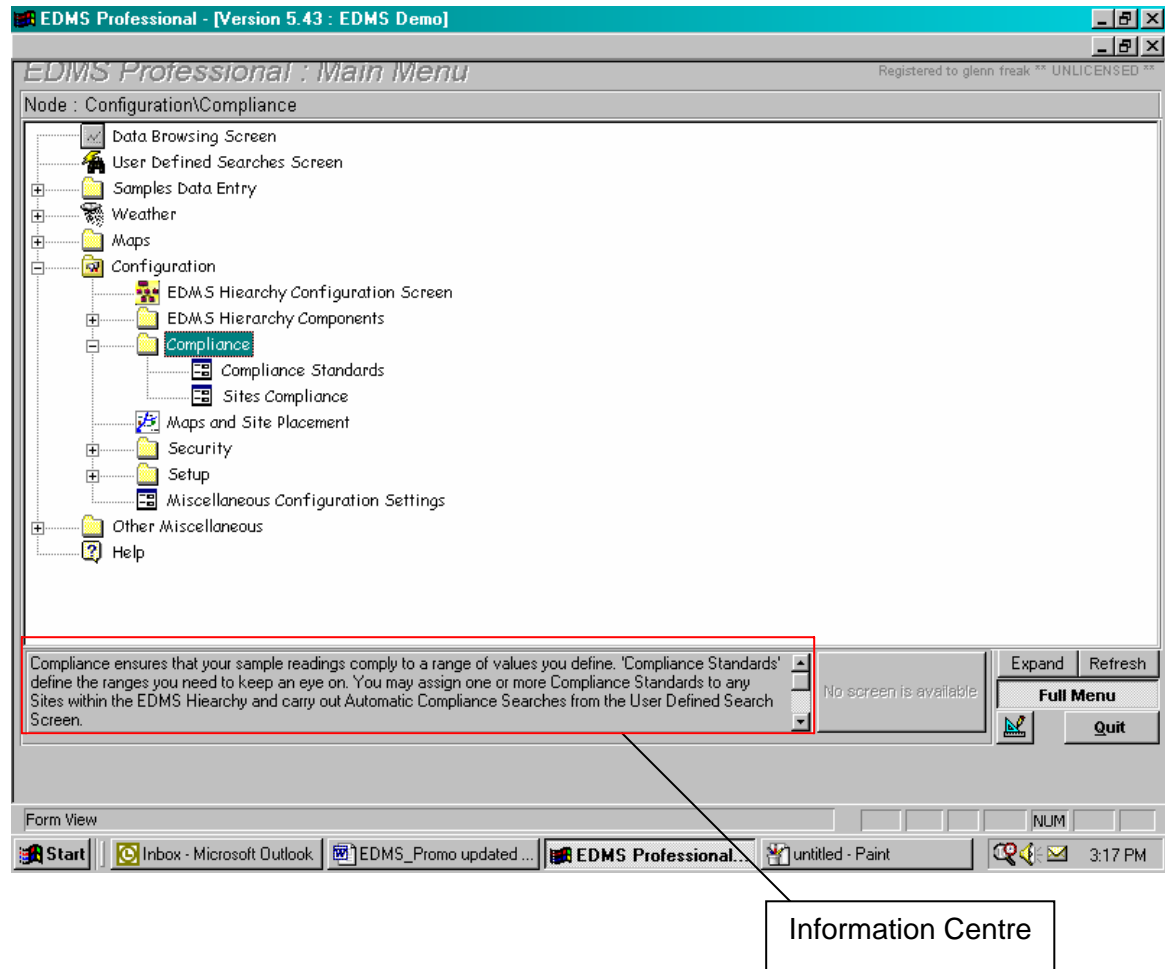
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### 1. EDMS - AN OVERVIEW

- EDMS is a data management system that assists the environmental manager to implement reliable compliance controls using validated time series data monitoring. The simple point and press functionality and drill down access to information via graphic images make it an excellent reporting tool.
- Whether a greenfield project or existing operation, EDMS delivers the key functions for validating data **before** it enters the datasets, for monitoring compliance obligations and targets as well as providing effective reporting to management at project, operational and corporate levels.
- EDMS embodies the ideas and recommendations of some of the most experienced environmental managers in the Oceania region. With several years of use on major projects, EDMS has used the lessons learned to provide enhancements to the functions and reporting capabilities.
- Being a Microsoft Access database, EDMS functions just as well in stand-alone mode as on a networked system and does not require expensive and manhour intensive support systems. This can be quite significant when the environmental role is performed in remote locations with less than optimum IT support and infrastructure.
- Being fully Windows compliant, EDMS can make its data and outputs available to other popular applications. Functions are provided that simplify the transfer and validation of datasets from customers' existing archives into EDMS.
- Training needs are minimal as EDMS is fully featured regarding on-screen messages, hints, prompts and tool tips. On-site installation and training is available at customer request and training seldom exceeds 3-4 hours.
- System security is provided in three stages. For example, technicians can access EDMS for data entry functions and environmental leads can control compliance parameters. The third level of security enables an authorised system administrator to configure the operation's core structure (EDMS Hierarchy), control users and permissions and other features.
- EDMS comprises a series of functional modules that are supplied to all customers as part of the installation package. However, EDMS can be customised to suit an individual's specific requirements.

## 2. NAVIGATING EDMS

The EDMS system operates through an arrangement of expanding menus (tree view) as shown in the following illustration. Each level in the menu introduces the user to the functions and tools associated with the hierarchy parent.



The information centre at the bottom of the screen shows explanations, guidelines, hints and generally provides guidance for all of the menu options. This is an aid for new users as well as acting as a memory jogger for the functions that are used infrequently.

## 2.1 The EDMS Hierarchy

EDMS is a flexible and open-ended tool that you can easily customise to suit your operation. You may structure your sampling points (Sites) and analytes (Factors) into the EDMS Hierarchy, and in a way that reflects the needs and structure of your operation's monitoring programme. The data within EDMS is organised into the following classifications:

<b>EDMS Hierarchy</b>	<b>EDMS Classification</b>	<b>Description of Input Data</b>
Level 1	Activity	Typical examples of an <b>Activity</b> are: Soil, Noise, Water (waste, natural stream, potable, process), Dust, Vegetation, Flora & Fauna, Emissions, Leachate, Sedimentation etc.
Level 2	Area	May designate the geographic <b>Areas</b> of the site, e.g., Tailings Dam, Haul Road, Stockpile, Retention Dam, Plant Area, Open Pit, Lease Boundary, Revegetation Area, Koala Habitat etc.
Level 3	Site	<b>Site</b> refers to the physical location or sampling station in the field, e.g., Weather Station, Boreholes, Person, Surface Water Collection Points, Koalas etc., from which a number of analytical factors are collected.
Level 4*	Sub-groups	These allow an additional level of data control and filtering, e.g., dust measurements taken at 100 m, 250 m and 500 m from the source, then the 100 m, 250 m and 500 m can be nominated as <b>Sub-groups</b> to further selectively manage the reporting. Another example would be a revegetation project trailing Species A, B and C, where each species can be a <b>Sub-group</b> and separately reported.
Level 5	Factors	The nominated <b>Factors</b> are the analytes that are measured at each Site (or Sub-group), e.g., pH, EC, metals, depth, air pressure, rainfall, particle size, wind speed, % plant cover or any other information records. EDMS has the flexibility to handle any factor entered.

\* Optional data entry for this hierarchical Level 4. All other levels require compulsory data input.

The user of EDMS organises the Activities, Areas, and Sites into a structure that EDMS can understand; called the EDMS Hierarchy. This is the first function of the configuration process. Once this structure is in place, you may bring sample data into EDMS. Below is an example of setting up a hierarchy in EDMS for revegetation monitoring data.

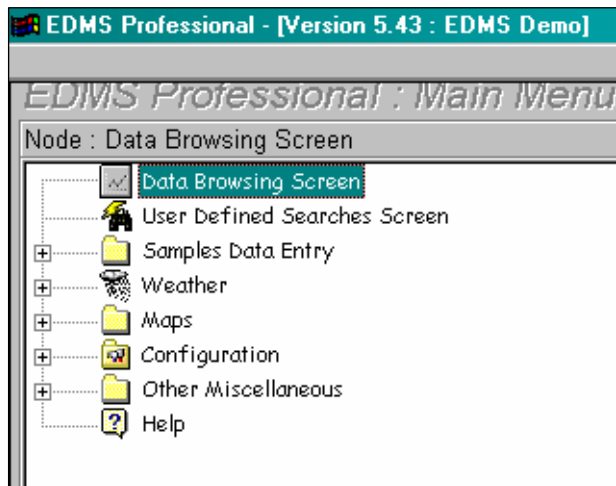
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Level 1 (Activity)	Level 2 (Area)	Level 3 (Site)	Optional Level 4 (Sub-group)	Level 5 (Factors)
Revegetation	Waste Dump	Bench	(no sub-group)	Soil pH % plant cover
		Slope	(no sub-group)	Soil pH % plant cover
		Top	With topsoil	Soil pH % plant cover
			Without topsoil	Soil pH % plant cover
	Borrow Pit	East	(no sub-group)	% plant cover
		West	(no sub-group)	% plant cover
	Tailings Trial Area	Tailings Beach <sup>1</sup>	(no sub-group)	Cu Pb Zn pH EC % plant cover

### 2.2 [The EDMS Main Menu](#)

The eight major components of EDMS are shown in the adjoining menu illustration.

The following descriptions provide an overview of these components with examples and screen captures that explain the functions and tools associated with each.



### 2.3 [Data Browsing Screen](#)

This function can be considered as a simple search facility. It allows the retrieval, viewing and graphing of selected sample data. Filters can be applied to select the activity (e.g. water monitoring), specify the required sample stations (e.g. only zone 1 bores) and apply a particular date range (e.g. retrieve historical date from 06-Dec-1995

<sup>1</sup> EDMS requires input for Levels 1,2, 3 and 5 of the hierarchy. In some situations (as above), a Level 3 may seem unnecessary. Simply repeat the Level 2 name or give a similar name for the compulsory Level 3.

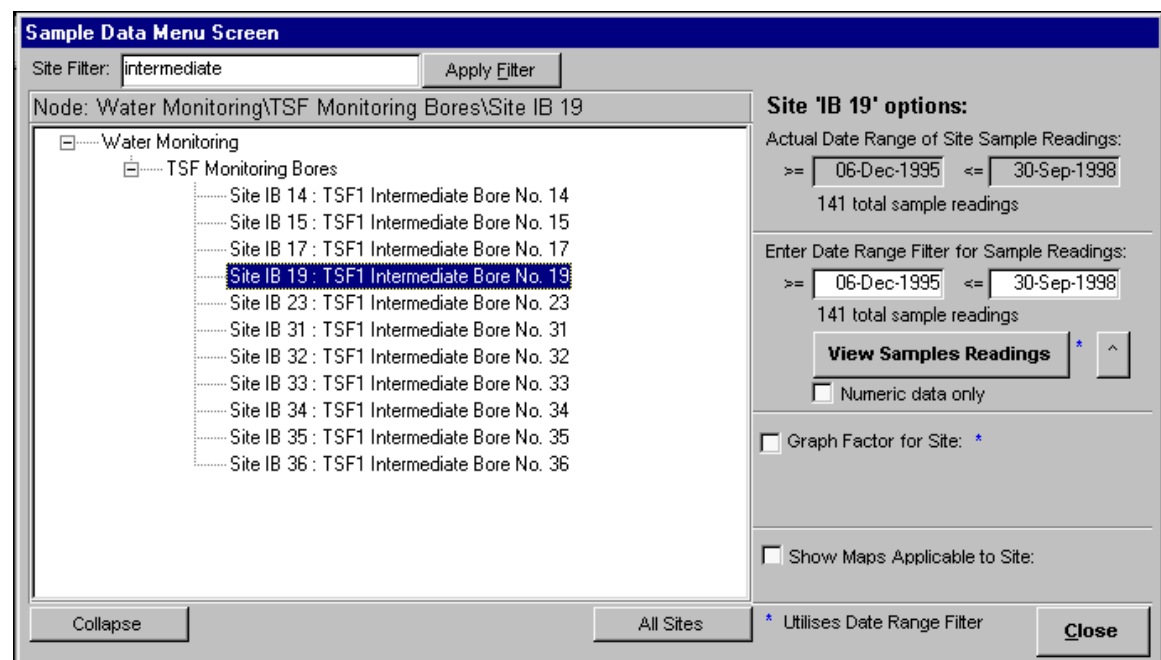
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to 30-Sep-1998). Search results are available on-screen and individual factors (e.g. pH, Cu, Ni) can be graphed.

Using the above example as an illustration, the Data Browsing function will allow the user to quickly retrieve water monitoring data and graph the pH performance for zone 1 bore samples for the historical dates specified.

Other typical examples would be to select the dust monitoring activity, specify only the sample stations located 100 m outside the lease boundary, apply a date range for say 01-Jan-2001 to date and then view or graph the particular factor(s) of interest such as PM<sub>10</sub> or particle size.

The following illustration shows a typical data browsing screen for an example **Activity** of Water Monitoring (Level 1), with an **Area** of Tailings Storage Facility (TSF) Monitoring Bores (Level 2), containing a number of monitoring bore **Sites** (Level 3).



### 2.4 User Defined Searches Screen

The first step in EDMS is to define a set of data to work with. Once this is done, the User Defined Searches Screen becomes the underlying powerhouse that drives much of the reporting and output functions of EDMS. The User Define Search allows a user to define (search criteria) and search for sample data relevant for the immediate reporting or analysis need. The sample data (dataset) obtained from the search may then be compared against compliance standards (i.e., checked to see if analytes are within agreed regulatory or operation levels), reported or exported to another software package, graphed modified and more.

In summary, the User Defined Searches Screen allows the user to totally control the choice of **Activities**, **Areas**, multiple **Sites**, **Factors** and **Subgroups**, the filters to be applied for date ranges and the compliance limits to be applied.

The following series of functions can be applied once the dataset have been defined:

- **Reporting** allows outputs to printer, text files and MS Excel spreadsheet format. Users have the tools to control the sort order and grouping of data on printed page outputs. It should be noted that EDMS reports data inputs of lower than the 'limit of detection/reporting' as it's inputted (e.g. if the result is less than the LOR 0.01, EDMS reports the value as "<0.01").
- **Graphing** allows the user to control increments (day/month), choice of graphed elements (sites or factors), choice of functions (average/max/min/totals) and handling of nil data. As EDMS cannot graph a value such as <0.01, the whole number (default) of "0.01" is graphed instead.
- **Analysis** allows basic statistics to be calculated and reported for the selected factors for each site. The values can be reported as either averages, sums, minimums, maximums or standard deviations.
- **Compliance** allows the comparison of sample data with regulatory limits such as discharge criteria or water quality guideline values for all required factors in order to compare the selected dataset against the various licence and management compliance envelopes that are in effect for the project. Results can be output to user defined report formats, printed and/or exported to file.
- **Modify Sample Data** allows the user to add or modify sample readings, or delete sample readings from EDMS. This option, powerful in allowing users to modify potentially thousands of sample readings at a time, is restricted to system administrators for maintaining the security of monitoring information.

The following illustration shows a typical user defined search screen and the various function tabs. The user is able to select data by Site, Factor and Subgroup.

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Selected	Site	Description	Category	Type
<input type="checkbox"/>	IB 17	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 19	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 23	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 31	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 32	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 33	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 34	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 35	TSF1 Intermediate	?	?
<input type="checkbox"/>	IB 36	TSF1 Intermediate	?	?

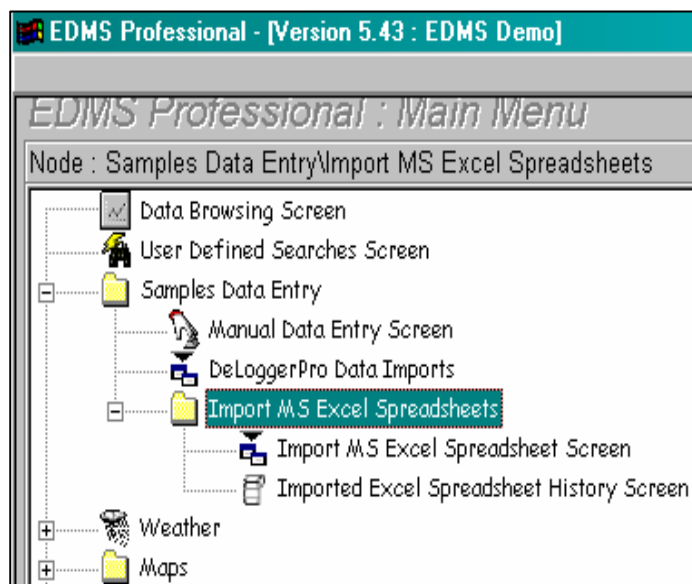
In this example, the user wishes to search only for pH and EC readings over the last month from selected groundwater monitoring bores. This involved selecting the required sites from the Select Sites tab (illustrated), factors pH and EC from the Select Factors tab, and entering a date range. An additional feature of EDMS allows these criteria to be saved to a “Quick Search” for later searches. Once search criteria have been selected, the user clicks on the Search button and any data found matching the search criteria is a dataset that can now be used to report, graph export etc.

### 2.5 Samples Data Entry

The functions for getting sample data into EDMS are either by manual entry or importing from an external file, such as an MS Excel spreadsheet, other MS Access files or a text file.

Data entry may only occur once the EDMS Hierarchy has been configured so as to ensure that validation of data takes place before it can be accepted.

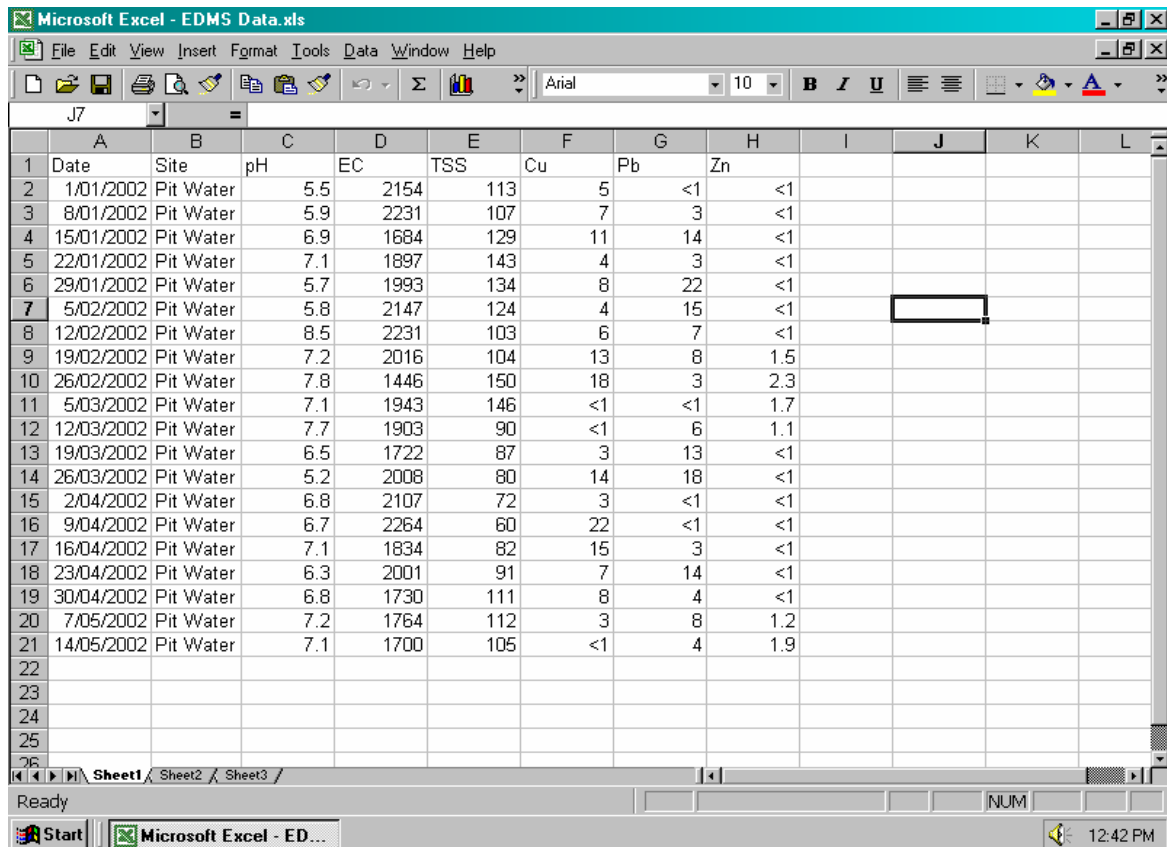
Sample data can be imported into EDMS from MS Excel spreadsheets. The import configuration will not necessarily match existing customer spreadsheets and some minor modifications may be required.



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Laboratory outputs in spreadsheet format are generally very similar to the EDMS import requirements.

Below is an example of the format of an MS Excel spreadsheet which will import into EDMS. The Date and Site columns are mandatory, as are the column headings for the Factors. Units are defined in EDMS. It is important to include a "Subgroup" column if subgroups are used.



The screenshot shows a Microsoft Excel spreadsheet titled "EDMS Data.xls". The spreadsheet has the following columns: Date, Site, pH, EC, TSS, Cu, Pb, Zn, and several empty columns (I, J, K, L). The data is as follows:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Site	pH	EC	TSS	Cu	Pb	Zn				
2	1/01/2002	Pit Water	5.5	2154	113	5	<1	<1				
3	8/01/2002	Pit Water	5.9	2231	107	7	3	<1				
4	15/01/2002	Pit Water	6.9	1684	129	11	14	<1				
5	22/01/2002	Pit Water	7.1	1897	143	4	3	<1				
6	29/01/2002	Pit Water	5.7	1993	134	8	22	<1				
7	5/02/2002	Pit Water	5.8	2147	124	4	15	<1				
8	12/02/2002	Pit Water	8.5	2231	103	6	7	<1				
9	19/02/2002	Pit Water	7.2	2016	104	13	8	1.5				
10	26/02/2002	Pit Water	7.8	1446	150	18	3	2.3				
11	5/03/2002	Pit Water	7.1	1943	146	<1	<1	1.7				
12	12/03/2002	Pit Water	7.7	1903	90	<1	6	1.1				
13	19/03/2002	Pit Water	6.5	1722	87	3	13	<1				
14	26/03/2002	Pit Water	5.2	2008	80	14	18	<1				
15	2/04/2002	Pit Water	6.8	2107	72	3	<1	<1				
16	9/04/2002	Pit Water	6.7	2264	60	22	<1	<1				
17	16/04/2002	Pit Water	7.1	1834	82	15	3	<1				
18	23/04/2002	Pit Water	6.3	2001	91	7	14	<1				
19	30/04/2002	Pit Water	6.8	1730	111	8	4	<1				
20	7/05/2002	Pit Water	7.2	1764	112	3	8	1.2				
21	14/05/2002	Pit Water	7.1	1700	105	<1	4	1.9				
22												
23												
24												
25												

### 2.6 [Weather \(Wind Rose\)](#)

The prime capability of this feature is to manage wind strength and direction data. Wind direction data (bearings) are continuously logged as degrees, as are wind strengths (magnitudes) in metres per second. These type of data are easily imported into EDMS which can graphically represent wind direction and speed as a Wind Rose.

The following illustrations shows a typical wind rose generation screen and plot in EDMS.

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### Wind Rose Generation

**Follow these Steps:**

1. Select Site: WTHRSTAT01
2. Wind Speed Factor: Hourly Magnitude (km/h)
3. Wind Direction Factor: Hourly Direction (°)
4. Date Range:  
Date (From): 01/01/1981  
Date (To): 26/08/2002
5. Wind Direction Increment:  
Degrees: 22.5
6. Chart Type:  
 Wind Speed Thresholds Breakdown  
 Combined Wind Speed Thresholds
7. Presentation:  
 Plot Line Markers  
 Line Chart instead of Wind Rose
8.

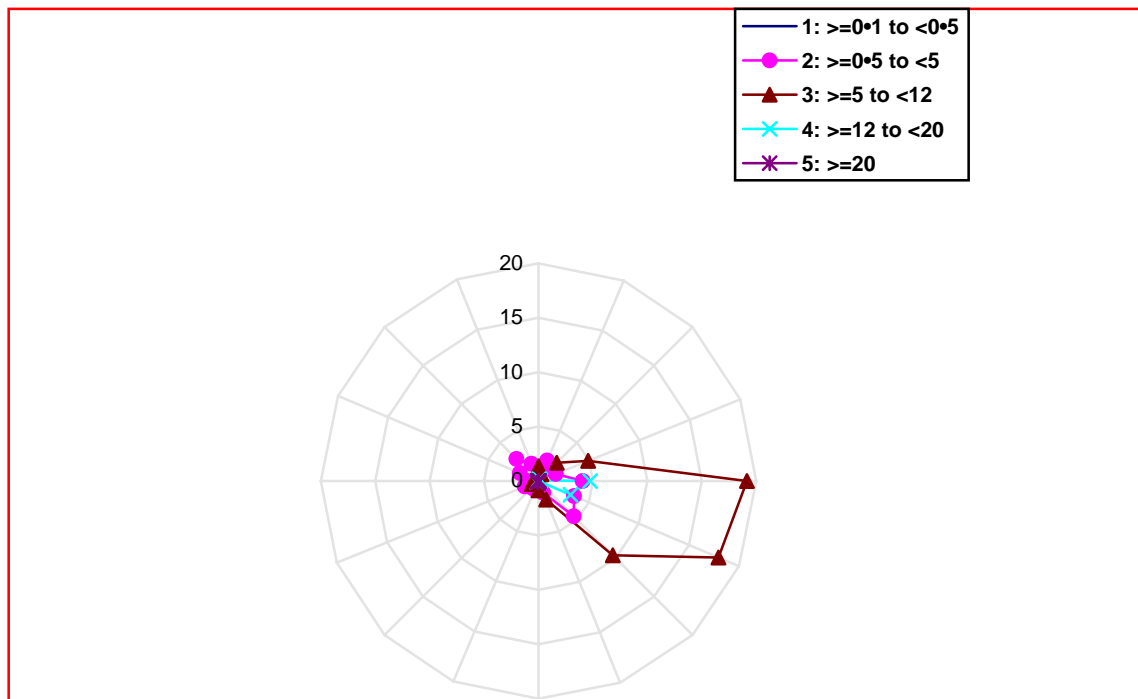
### Wind Speed Thresholds Configuration

Calm Threshold\* → 0.1 |   
0.5  
5  
12  
20 |

\* Winds Speeds below Calm Threshold are ignored in results

**Notes:**

- Wind Direction must be in degrees, eg: up to 360 degrees
- A "Measurement" in this context means a combined Wind Speed recording and Wind Direction recording
- A Wind Direction and Wind Speed measurement must be taken at exactly the same time or be daily averages



## 2.7 [Maps](#)

Maps can be generated by the user in EDMS from scanned topographic maps, CAD drawing files and scans of aerial photographs or similar. The common file formats of .bmp, .jpg and .gif are all supported. Users can add multiple maps to the system. These maps display images on which EDMS Site names, as an example, may be placed manually via mouse, or automatically (if an easting and northing are supplied with Site details) to indicate, e.g., areas of compliance versus 'hot spots'. Clicking on these 'hot

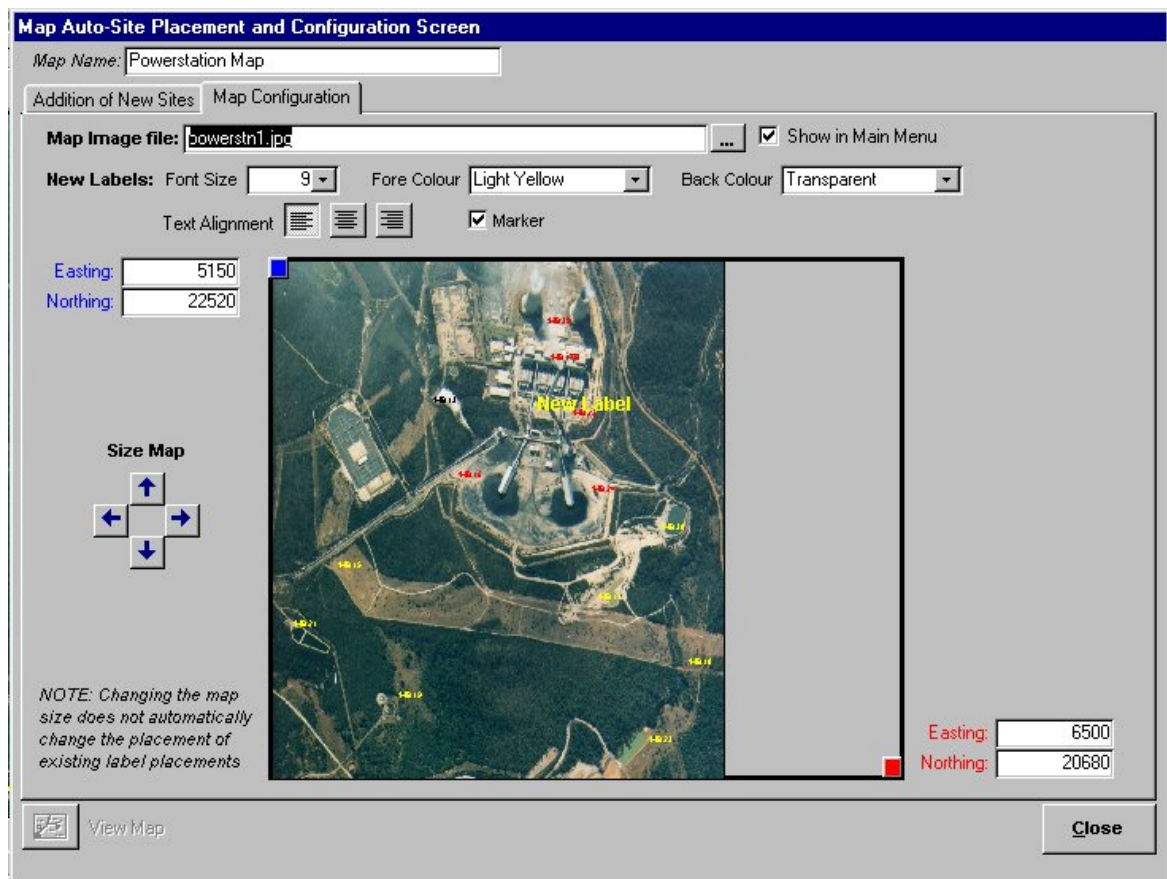
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spots' would allow data relevant to the Site to be selected and displayed, or presents screens for data entry. Setting up Maps in this way allows novice computer users to, e.g., view rainfall at a weather station (Site) for the last month on a graph and within a few seconds of starting-up the EDMS software.

Sampling stations (Sites) can be added to the image with clickable drill down capability to the underlying data for both data entry and review. Users have control over zoom ratios, hidden labels, easting and northing co-ordinate controls, map sizing plus font choices and colours.

Maps provide an alternative way of navigating and are popular with managers requiring quick access to specific data at known geographic locations.

The following illustration shows a typical map configuration using an aerial photo background.



## 2.8 [Configuration](#)

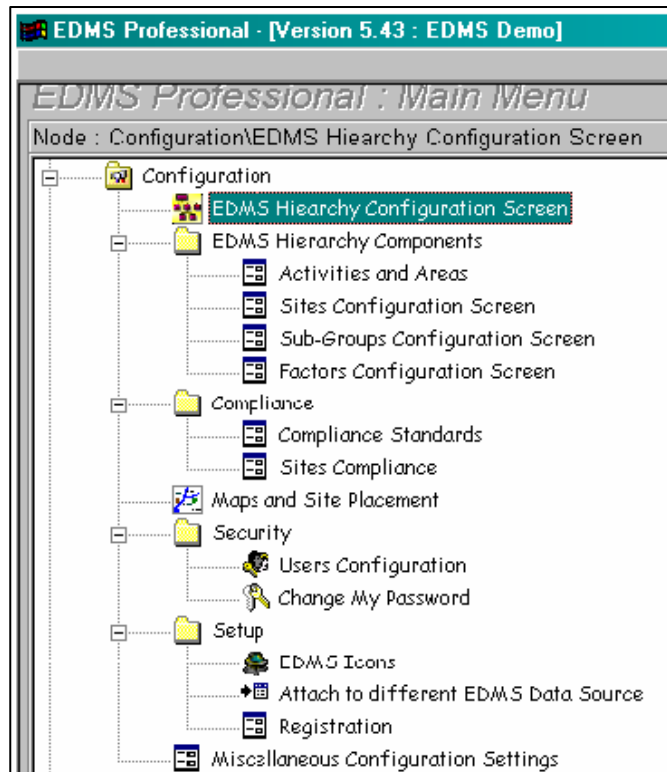
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Configuration allows the user to customise EDMS to an operation's needs. This mainly involves:

- Entering the Sites (Sampling points/stations) and Factors (analytes that will be measured) into an EDMS Hierarchy of Activities and Areas.
- Setting up Compliance Standards, i.e., regulatory or operation limits that require regular monitoring.
- Setting up maps.
- Administering users that may access EDMS and with relevant permissions.

The three important features of the configuration screen are:

1. EDMS Hierarchy Configuration
2. Compliance
3. Other Configurations



### 2.8.1 EDMS hierarchy configuration

EDMS Hierarchy Configuration refers to the establishment of the site hierarchy components, being the **Areas** of the project, the **Activities** to be monitored, nominating sampling station **Sites**, defining **Subgroups** (if applicable) and defining the **Factors** to be monitored at each sample station.

### 2.8.2 Compliance

The compliance tools allow the setting of physical detection limits, regulatory limits and project management limits for the factors being measured on the project. More than one compliance standard can be associated with each site within the EDMS Hierarchy. Thus each site may have a set of compliance standards that can help determine whether the sample data are complying with regulatory or project limits.

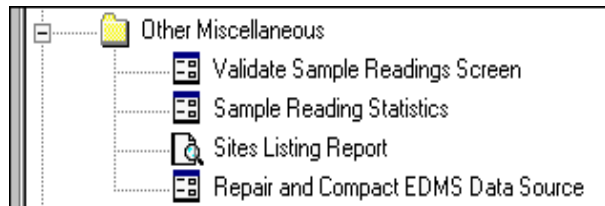
### 2.8.3 Other Configurations

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Other minor configurations of EDMS include the placement of sites onto maps or other image backgrounds, management of system security, setting of passwords and user authorities, and additional miscellaneous settings.

Some key features of the other miscellaneous functions include tools for performing additional validation checks on detection limits for defined sample data. For example, if datasets have been collected over time and are to be imported into EDMS, a validation check should be undertaken to weed out records with topographical errors and spurious data.



Sample readings statistics allows for the reporting of the numbers of sample readings for each of the areas and activities of the project site.

The site listing report generates a report showing all Sites and their placement within the EDMS Hierarchy, i.e., all Sampling Points in context of Activities and Areas they belong to.

Repair and compact are standard database tools that may be required to restore system integrity after unexpected hardware failure, power loss or other form of uncontrolled system shutdown.

## **3 GETTING STARTED – A WORKING EXAMPLE**

### **3.1 Minimum System Requirements**

It is recommended that, as a minimum, the following computer hardware system is used for the running of EDMS Version 5.43:

- A Pentium (or equivalent) computer running Microsoft Windows 95 Operating System, or later, with 100 MB or more of free Hard Disk Space (c: drive).
- For machines running Windows 95/98, 64 MB RAM minimum, 128 MB or more recommended.
- For machines running Windows NT/2000, 128 MB RAM minimum, 256 MB or more recommended.
- For machines running Windows XP, 256 MB RAM minimum recommendation, 512 MB or more recommended.

The faster the computer is, and the more memory (RAM) the quicker EDMS will respond.

For more information, feel free to contact support.

### **3.2 Installation**

EDMS installation is as automated as any other software package. Although installation is relatively straight forward, it is important to read the following installation instructions thoroughly before installing the program. Alternatively, you can contact Software/Technical Support (Chapter 4) for step-by-step instructions over the phone.

1. Run EDMS installation program, EDMS\_Installation.exe, to install EDMS – please follow screen prompts carefully. Depending upon your network, you may need a system administrator to install EDMS.
2. The EDMS installation program must be run for each user, and installed onto the C:\ drive for optimum performance. Note: having more than one user simultaneously accessing the same program installation (i.e. shared on a network) will cause problems.
3. The data source directory should be located on a Local Area Network if you would like multiple users to access EDMS. If you already have EDMS data (file edmsdata.mdb), place this onto the network and point the installation to this file.

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4. All users accessing EDMS will need full permissions to their C:\ drive and also to the directory on the network where the data is to be located.
5. The installation program installs the MS Access 97 runtime and a licence in a way that is independent of any other version of MS Access that you may have on your computer. For further information, please contact support.
6. If you have an EDMS auto-registration file (edmsreg.txt), copy this into the same directory as the edmsdata.mdb (data source directory) before or after EDMS program installation. The registration file will automatically register and remove itself the next time a user successfully logs into EDMS.
7. Installation is complete once you have successfully run the EDMS installation program and logged into EDMS (with username and password), and accessed the EDMS Main Menu.
8. If you are installing EDMS on-site for the first time, use the following information to logon to EDMS:  
Name : administrator  
Password: administrator
9. You can delete this administrator user once you have created a user account for yourself with Administrator Permission.
10. To delete user administrator, you must quit EDMS and log back in using the new account you have created for yourself. Creating and deleting users is done from the EDMS Professional Main Menu / Configuration / Users Configuration.

Each time you login to EDMS, you will be presented with a Main Menu. For each option in the menu, brief help is given at the bottom of the screen. Also note that holding your mouse pointer over buttons and parts of some screens will give you additional information.

To the bottom right of the Main Menu screen you will notice a "Full Menu" button. This button toggles between a basic menu and a comprehensive menu containing ALL the current features and configuration screens of EDMS.

Once installed, don't be afraid to experiment with the many features EDMS has. To get you started, a working example follows which is set out as a basic EDMS tutorial. Work through this example in parallel with your own site data. Should you have any questions or difficulties, please refer to Chapter 4 for sources of help.

### **3.3 [Configure Your Database](#)**

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Before starting, the first step is to configure your EDMS Hierarchy before you enter data. The example we'll use is a mine site with numerous monitoring programmes underway. The data collected for water quality has been stored in MS Excel and you are wanting to transfer it to EDMS for all your future data management requirements. This example will have a monitoring **Activity** called "Water Quality" (Level 1), two **Areas** relevant to the mine site (Creeks and Retention Dams) where the monitoring is undertaken (Level 2), several **Sites** within each Area (e.g. retention dams named RD01 and RD02) where samples are taken (Level 3) and 15 **Factors** that include physical, chemical and descriptive data that are recorded for each sample (Level 5). (Note: no Level 4 **Subgroup** applicable to this example).

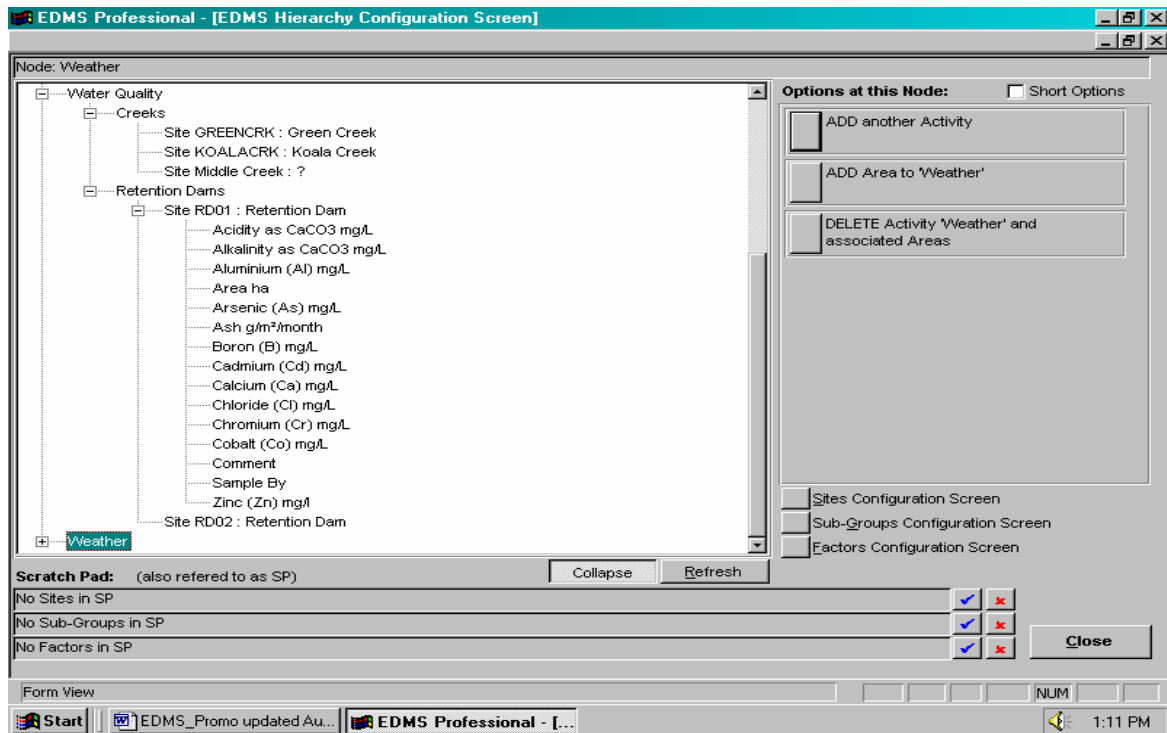
1. The first step in setting up an EDMS database is to correctly configure the hierarchy for which the data will be entered or imported.
2. Examine the data contained in your MS Excel spreadsheets and determine an appropriate structure for naming the data based on the five levels of the EDMS Hierarchy.
3. The MS Excel data from the simple example described above is illustrated below. The **Activity** called "Water Quality Monitoring" has several **Areas** relevant to the monitoring programme (creeks and retention dams), for which your **Site**, RD02, has data for 15 **Factors**.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Date	Site	Acidity	Alkalinity	AI	Area	As	Ash	B	Cd	Ca	Cl	Cr	Co	Comment	Sample By	Zn
2	01/05/02	RD02	11.9	115	12		<5	0.17	<18	<0.03	11.9	23.1	<0.05	0.18		J.Smith	0.17
3	01/11/02	RD02	29.2	164	6		<5	0.07	<18	<0.03	29.2	18.4	<0.05	<0.1		J.Smith	0.07
4	01/19/02	RD02	24.5	98	5		<5	0.1	<18	<0.03	24.5	44	<0.05	<0.1		J.Smith	0.1
5	01/26/02	RD02	27.3	78	12		6.6	0.22	<18	<0.03	27.3	15.8	0.09	0.53		J.Smith	0.22
6	02/03/02	RD02													no sample	J.Smith	
7	02/08/02	RD02	25	116	6		12.3	0.01	<18	<0.03	25	32	1.1	0.22		J.Smith	0.01
8	02/09/02	RD02	22.6	154	12		6.2	0.15	<18	<0.03	22.6	2.6	0.06	0.19		J.Smith	0.15
9	02/17/02	RD02	46	137	56		9.8	0.17	<18	<0.03	46	10.6	1.8	0.39		R.Taylor	0.17
10	02/26/02	RD02	62	140	76		11	0.17	<18	<0.03	62	15.3	1.7	0.24		R.Taylor	0.17
11	03/02/02	RD02													no sample		
12	03/09/02	RD02	50	134	13.5		<5	0.2	<18	<0.03	50	18.1	1.4	0.22		R.Taylor	0.2
13	03/18/02	RD02	61	90	5		8	0.23	<18	<0.03	61	22.7	<0.05	0.39		J.Smith	0.23
14	03/23/02	RD02	42	78	48		11.2	0.26	<18	<0.03	42	25.4	1.2	0.41		J.Smith	0.26
15	03/26/02	RD02	45	111	20		<5	0.29	<18	<0.03	45	28.1	0.08	0.51		J.Smith	0.29
16																	

4. From the EDMS Main Menu screen (refer to picture in Chapter 2 – Navigating EDMS), you can choose to configure your database either in the EDMS Hierarchy Configuration Screen or the EDMS Hierarchy Components. All the functions available in the latter sub menu may be performed from the EDMS Hierarchy Configuration Screen.
5. Once in the EDMS Hierarchy Configuration Screen (see below), you are able to configure the database by adding or subtracting **Activities**, **Areas**, **Sites**, **Subgroups** and **Factors** according to your spreadsheet data.

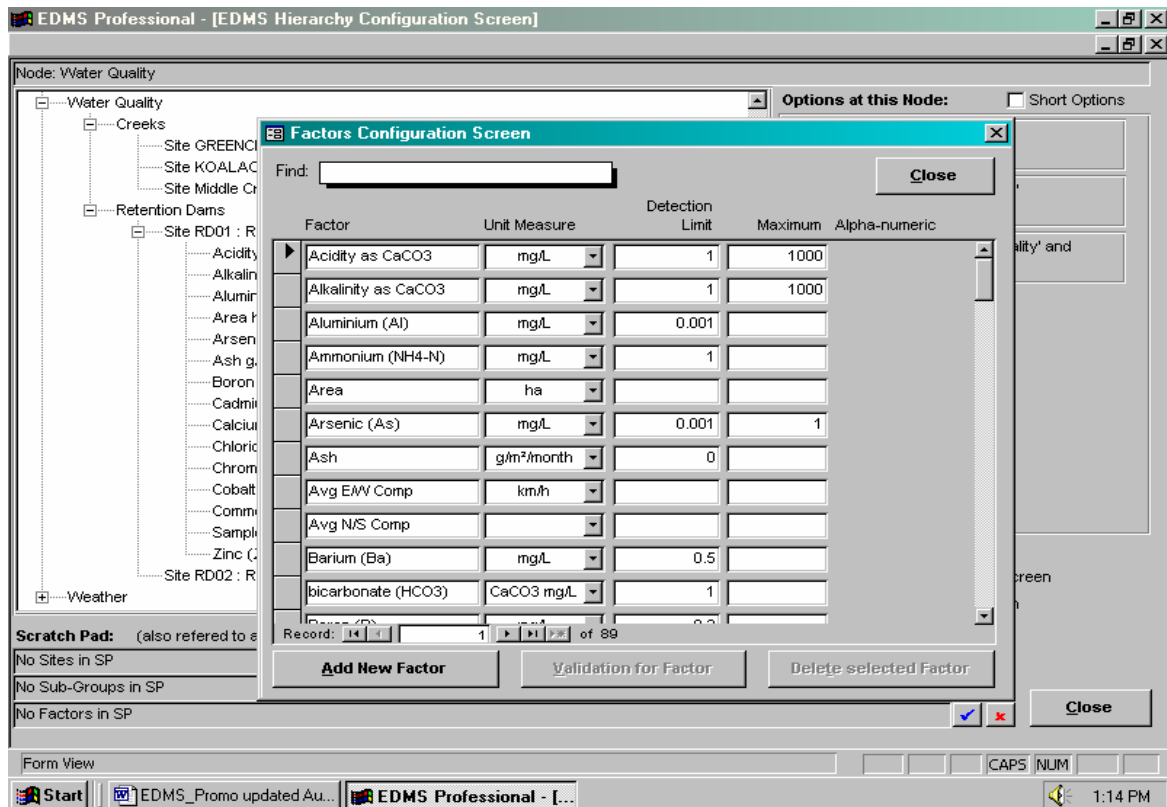
## Environmental Data Management System

- Should your project have multiple monitoring **Areas** to be set up in the database, EDMS has a useful function called the Scratch Pad. This functions allows you to copy and paste information from **Sites**, **Subgroups** and **Factors** into the multiple **Areas**.



- Configuring your **Factors** (see below) allows you to input the **Factor** name, units of measurement, and a system that nominates a valid data range (detection limit to maximum) which can be used to automatically validate the data prior to import.

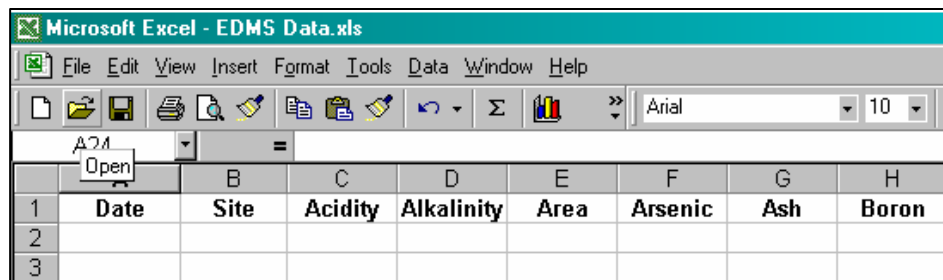
## Environmental Data Management System



### 3.4 [Configure Your Spreadsheets](#)

As explained in Section 2.5 above, the functions for getting sample data into EDMS are either by manual entry or importing from an MS Excel spreadsheet. When setting up EDMS for the first time, it is typical to obtain your data from an existing spreadsheet which will not necessarily match the required format that EDMS can recognise.

The figure to the right shows a compatible configuration for importing data from an MS Excel



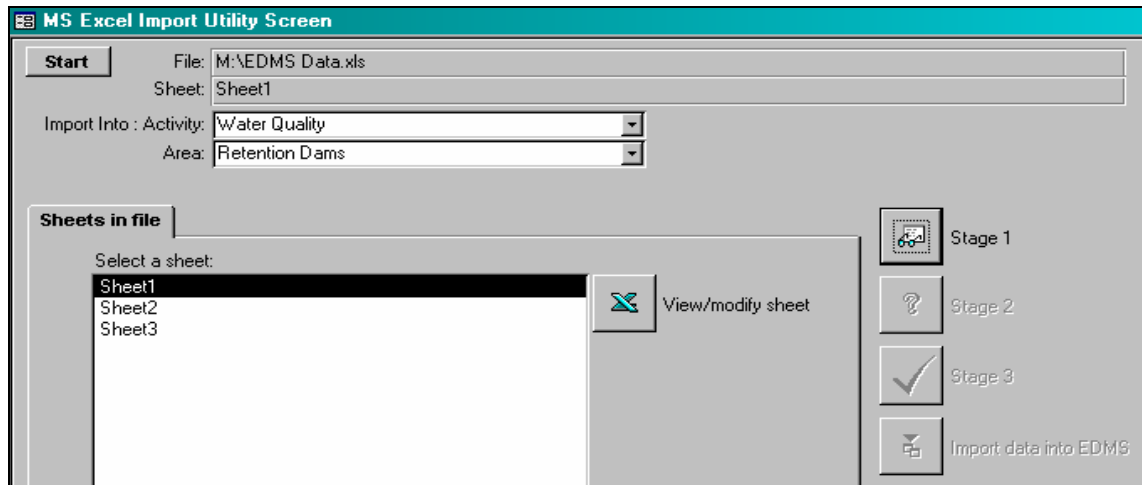
spreadsheet into EDMS. The Date and Site columns are mandatory, as are the column headings for the **Factors**. It is important to name a “**Subgroup**” column if subgroups are used.

Many commercial laboratories follow this same spreadsheet format configuration when sending out monitoring results to clients which makes importing data to EDMS easy.

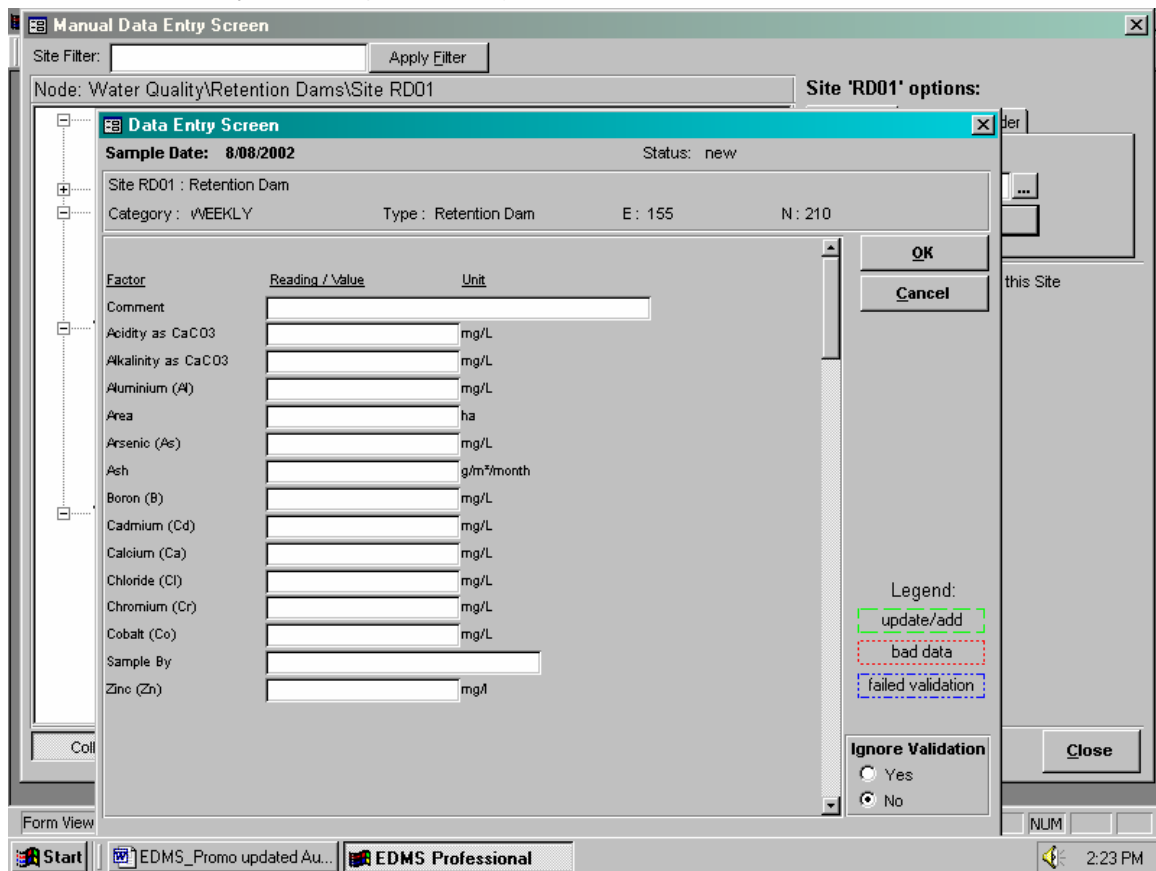
### 3.5 [Importing Your Data](#)

## Environmental Data Management System

Importing data is simply achieved by selecting the Import MS Excel Spreadsheet Screen button from the Main Menu and following the prompts (see below). Once the required information is completed for each of the fields in Stages 1, 2 and 3, the data can be imported.



Once EDMS contains all your historical data, all future data can be either be imported in the same way, or manually, by direct input of data from laboratory sheets using the Manual Data Entry Screen (see below).

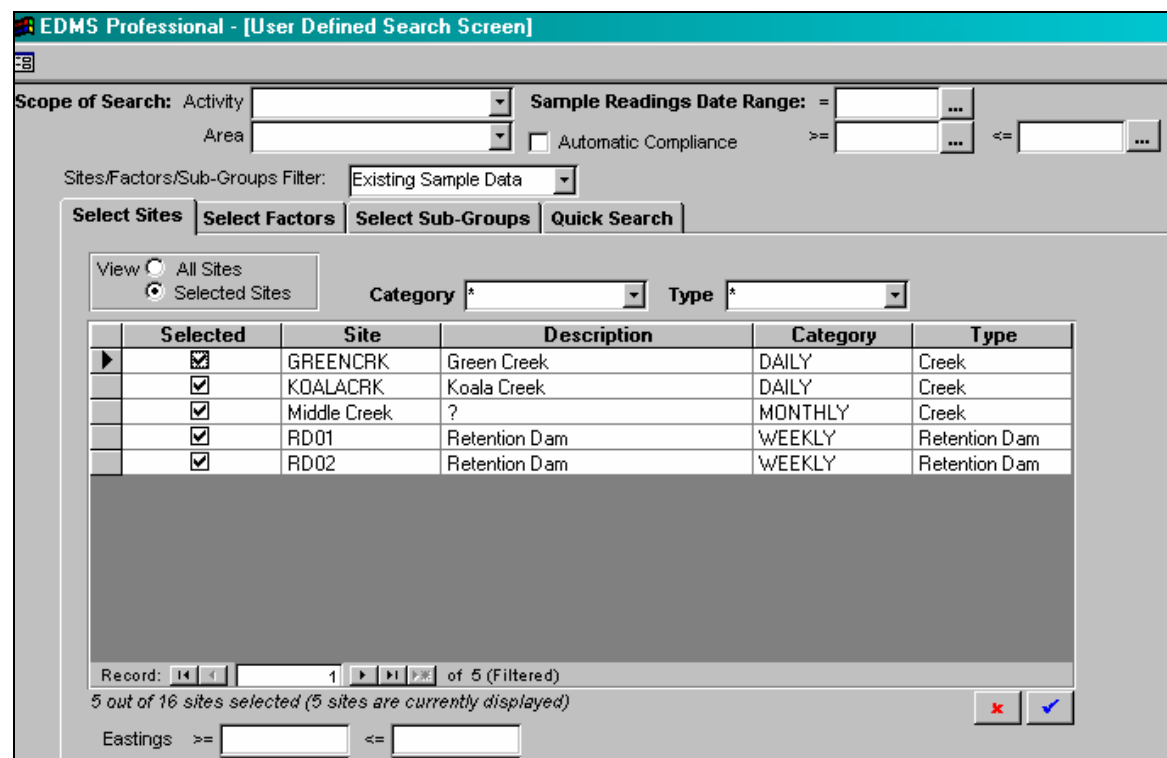


### 3.6 [Managing Your Data](#)

## Environmental Data Management System

Once your data has been entered into EDMS, you will soon learn the many functions EDMS has to manage the data, e.g. assessing for compliance, plotting data against statutory limits, printing out reports etc. The User Defined Searches Screen will allow you to control the choice of **Activities**, **Areas**, multiple **Sites**, **Factors** and **Subgroups**, the filters to be applied for date ranges, and the compliance limits to be applied, all of which can be plotted, reported, modified or statistically analysed.

The screen shot illustrated below shows the Select **Sites** tab for our water monitoring example, listing the creek and retention dam sites that have been configured and data inputted. Data of interest are selected either through nominating a date range from the drop-down calendar function or by selecting the automatic compliance button. Similarly, data can be filtered by selecting the Select **Factors** or Select **Subgroup** tabs, depending on your specific application or requirements.



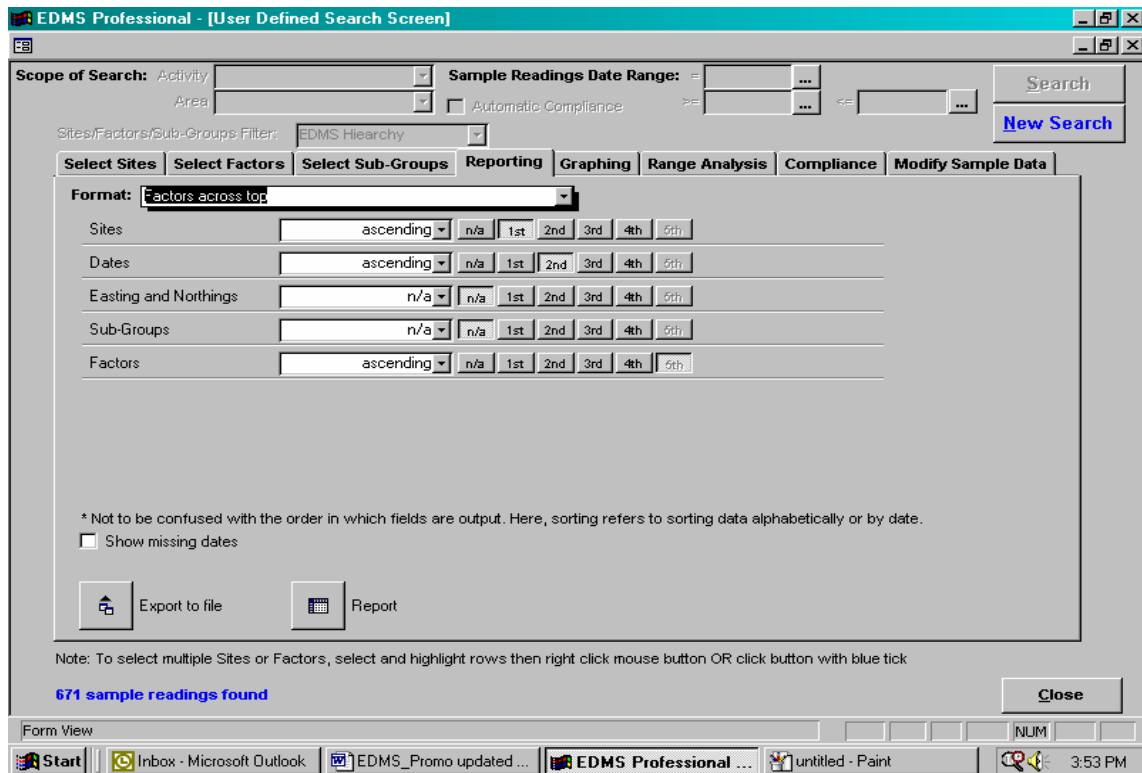
The screenshot displays the 'User Defined Search Screen' in EDMS Professional. The interface includes search filters for 'Scope of Search' (Activity and Area), 'Sample Readings Date Range' (with operators =, >=, <=), and 'Automatic Compliance'. The 'Sites/Factors/Sub-Groups Filter' is set to 'Existing Sample Data'. The 'Select Sites' tab is active, showing a table of sites with columns for 'Selected', 'Site', 'Description', 'Category', and 'Type'. The table lists five sites: GREENCRK, KOALACRK, Middle Creek, RD01, and RD02. The 'Selected' column has checkboxes, with the first four checked. Below the table, there are navigation controls for records (1 of 5 filtered) and a status message: '5 out of 16 sites selected (5 sites are currently displayed)'. There are also 'Eastings' filters and a 'Print' button.

Selected	Site	Description	Category	Type
<input checked="" type="checkbox"/>	GREENCRK	Green Creek	DAILY	Creek
<input checked="" type="checkbox"/>	KOALACRK	Koala Creek	DAILY	Creek
<input checked="" type="checkbox"/>	Middle Creek	?	MONTHLY	Creek
<input checked="" type="checkbox"/>	RD01	Retention Dam	WEEKLY	Retention Dam
<input checked="" type="checkbox"/>	RD02	Retention Dam	WEEKLY	Retention Dam

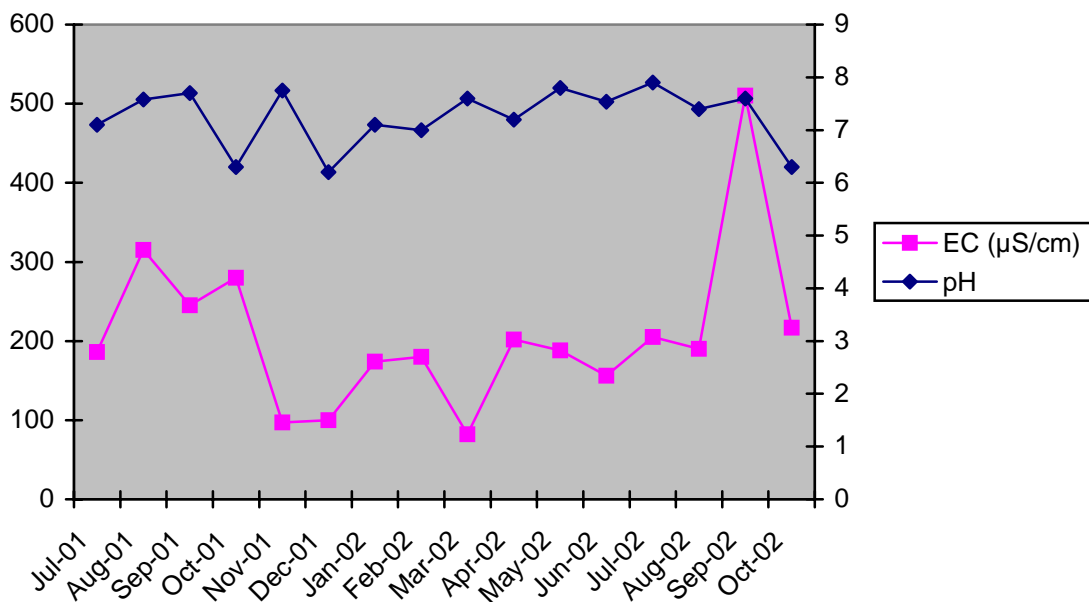
Once the dataset is defined, you can explore the many functions of EDMS including:

- **Reporting:** allows outputs to printer, text files and MS Excel spreadsheet format. Users have tools to control the sort order and grouping of data on printed page.

## Environmental Data Management System



- Graphing:** allows the user to control increments (day/month), choice of graphed elements (**Sites** or **Factors**), choice of functions (average/max/min/totals) and handling of nil data.



## Environmental Data Management System

- **Analysis:** allows basis statistics to be calculated and reported for the selected factors for each site (values reported as averages, sums, minimums, maximums or standard deviations.)

EDMS Professional - [EDMS User Defined Search Results]				
Options				
Unhide Columns...				
Factor	Statistic	Across All Sites	RD02	
EC	Count, ie: number of values	14	14	
EC	Minimum	490	490	
EC	Maximum	2621	2621	
EC	Mean, ie: simple average	1010.357	1010.357	
EC	Mode, ie: most frequent value (slowest to calculate)	990	990	
EC	Median, ie: the middle value (can be slow to calculate)	969.5	969.5	
EC	Sum	14145	14145	
EC	Standard Deviation	492.485	492.485	
EC	Variance	242541.5	242541.5	
pH	Count, ie: number of values	14	14	
pH	Minimum	5.66	5.66	
pH	Maximum	7.25	7.25	
pH	Mean, ie: simple average	6.489286	6.489286	
pH	Mode, ie: most frequent value (slowest to calculate)	6.4	6.4	
pH	Median, ie: the middle value (can be slow to calculate)	6.44	6.44	
pH	Sum	90.85	90.85	
pH	Standard Deviation	0.4461197	0.4461197	
pH	Variance	0.1990228	0.1990228	

- **Compliance** allows the user to input regulatory limits such as discharge criteria or water quality guideline values for all required **Factors** in order to compare the selected dataset against the various licence and management compliance envelopes that are in effect for the project. Results can be output to user defined report formats, printed and/or exported to file. These screens show the options to report either non-compliances or compliance statistics.

Select Sites | Select Factors | Select Sub-Groups | Reporting | Graphing | Range

**Compliance Scope:**

Compare sample readings to each Sites' Compliance Standard(s)  
 Compare samples readings to the selected Compliance Standard :

**Report Type:**

**\*Presentation Options:**

Background Colour:

Coversheet for reports/exports  
 **Show days that do comply**  
 Highlight Exported data  
 Include Groups in exports

Bold:   
 Underline  
 Italicise

\* Reports Only

Show missing dates

Select Sites | Select Factors | Select Sub-Groups | Reporting | Graphing | Range

**Compliance Scope:**

Compare sample readings to each Sites' Compliance Standard(s)  
 Compare samples readings to the selected Compliance Standard :

**Report Type:**

**Presentation Options:**

Show Nbr of Readings  
 Show Nbr Infringements  
 Show Total Infringements  
 Show % Infringements

Show missing dates

- **Modify Sample Data** allows the user to edit or delete selected sample data from the database. As this is a high-level function, the authorised system administrator who

## **Environmental Data Management System**

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establishes the dataset usually uses the built-in security system of EDMS to ensure that any sample data modification is only undertaken by them.

## **4 EDMS SALES, SERVICE AND SUPPORT**

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