

JAPAN INTERNATIONAL COOPERATION AGENCY

MINISTRY OF HOUSING AND LOCAL GOVERNMENT, MALAYSIA

**THE STUDY ON
THE SAFE CLOSURE AND REHABILITATION OF
LANDFILL SITES
IN MALAYSIA**

**FINAL REPORT
Volume 6**

**User Manual for LACMIS
(Landfill Closure Management Information System)**

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NOVEMBER 2004

YACHIYO ENGINEERING CO., LTD.

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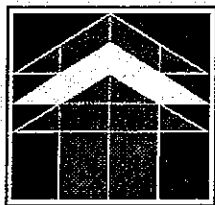
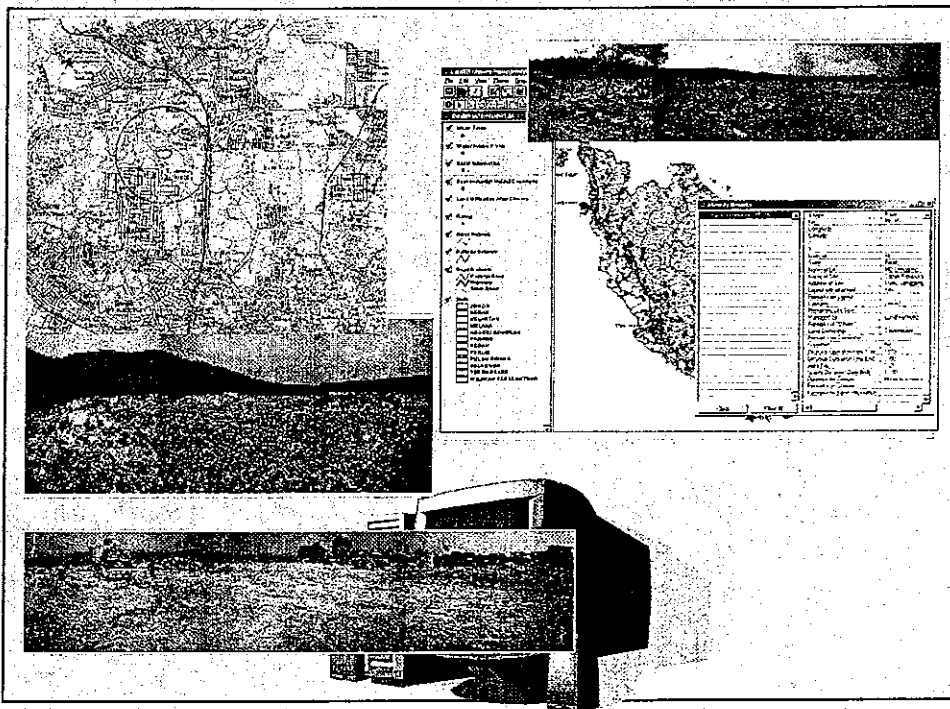
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The Final Report of “The Study on The Safe Closure and Rehabilitation of Landfill Sites in Malaysia” is composed of seven Volumes as shown below:

- Volume 1** **Summary**
- Volume 2** **Main Report**
- Volume 3** **Guideline for Safe Closure and Rehabilitation of MSW Landfill Sites**
- Volume 4** **Pilot Projects on Safe Closure and Rehabilitation of Landfill Sites**
- Volume 5** **Technical Guideline for Sanitary Landfill, Design and Operation
(Revised Draft, 2004)**
- Volume 6** **User Manual of LACMIS (Landfill Closure Management
Information System)**
- Volume 7** **Data Book**

This Report is “**Volume 6 User Manual of LACMIS (Landfill Closure Management Information System)**”.

**LANDFILL CLOSURE
MANAGEMENT INFORMATION
SYSTEM (LACMIS) INTERFACE
USER MANUAL**



**Ministry of Housing and Local Government
Malaysia**



**Japan International Cooperation Agency
Japan**

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INTRODUCTION

The Landfill Closure Information System (LACMIS) is designed to assist the user to view an interface with the data captured from the Questionnaire Survey from 101 Local Authorities in West Malaysia. LACMIS is built on ArcView GIS 3.3 and is customized to fit the needs of users of the system.

The LACMIS Manual is organised by function and the tasks needed to perform that function. Each task contains the steps needed for accomplishing the function along with relevant tips, notes, cautions and screenshots.

The functions and tasks are presented in the following order:

Chapter 1 explains how to operate the **Information Display Interface**. The function and purpose of the toolbars and buttons shown on the **Information Display Interface**, how to select the features and how to manoeuvre the displayed information are clearly explained in this chapter.

Chapter 2 describes the use of the functions displayed on the **Query Database Interface** to find data, create queries and views.

Chapter 3 explains the use of various tools and options to produce layouts, export images and tables, scale, preview and print.

Chapter 4 provides instructions on how to edit, update or add information to the database. These include the basic information database, images, photographs and graphics.

Chapter 5 covers instruction on how to add to or delete themes from the basic information database.

Chapter 6 lists the files in the LACMIS Directory and the paths from the main folder to the various subfolders.

Chapter 7 summarises the limitations of LACMIS.

An **Appendix** is attached with exercises for practice on the functions and tasks described in Chapters 2 – 5

STEPPING INTO LACMIS

When you perform an action in LACMIS, it usually applies to the active window. LACMIS's user interface changes according to what is in the active window. For example, when the LACMIS's window is active, you will see the buttons, tools and menus that are functioning in that particular window.

To make a window active, simply click inside it or on its title bar. When you open a window it automatically becomes active.

Menu bar

A **Menu** bar contains a list of pulldown menu or menus. To select from a pulldown menu, you can use the mouse or a keyboard shortcut. Some keyboard shortcuts are listed in the menus. Others depend on the graphical user interface (GUI) system you are working with. The contents of the menu bar change according to what is in the active window.

Button bar

Located beneath the **Menu** bar in the LACMIS window, this bar contains buttons that give you quick access to various controls. Click on a **Button** to select the function. The contents of the **Button** bar change according to what is in the active window.

Tool bar

Located beneath the **Button** bar in the LACMIS window, this bar contains various tools you can work with. Click on a **Tool** to choose it. This will change the cursor to reflect the **Tool** chosen. The **Tool** remains selected until another one is chosen. The **Tool** on the bar changes according to what is in the active window. However, the **Tool** bar will not be displayed if the user is working on the Project window or on a script.

The Table of Contents

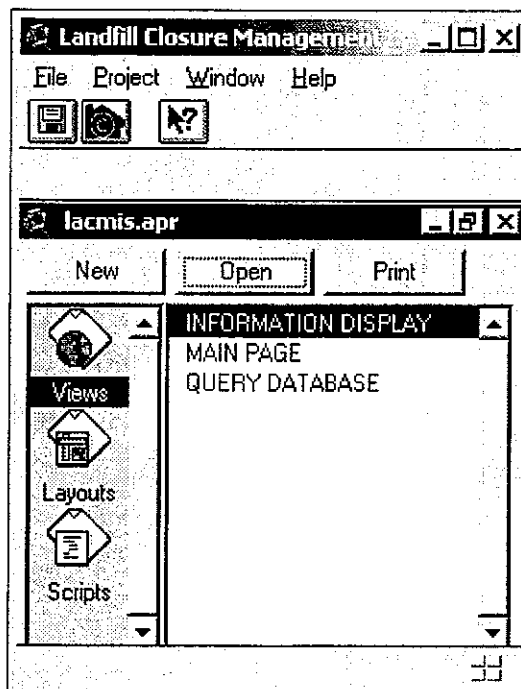
Each view has a **Table of Contents** that lists the **Themes** in the view and shows the symbols and colours they are drawn with. The **Table of Contents** is also used to control how the **Themes** are drawn.

Project Window

Three icons are available in the **Project Window**. The icons shown are **Views**, **Layouts** and **Scripts** and they are located on the left side of the **Project Window**. The icons can only be chosen one at a time before proceeding with their respective steps. For example, to see a view that is in the project, click on the **Views** icon. The list of the **Views** in the project is shown on the right window. To open one of the lists in the **Views**, click the list to select it, then click the **Open** button or double-click on the selected list. To open several views in the list, hold down SHIFT key and click on the **Views'** list to select

them, and then click the **Open** button. To create a new **View**, you can either click the **New** button or double-click the **Views** icon.

To make the **Project Window** active when you cannot see it because other windows are on top of it, use the **Window** menu. The **Project Window** is always the first window listed in that menu's list of currently open windows. You cannot close the **Project Window**, but you can move it off the page so that it is "out of the way". To restore a "hidden" **Project Window**, use the tile or cascade option in the **Window** menu.



IMPORTANT NOTE: PLEASE DO NOT DELETE THE THREE ITEMS IN THE VIEWS AS SHOWN ABOVE TO AVOID THE DISRUPTION OF THE VIEW AND DATABASE DISPLAY.

To find out what a button, tool, or menu choice does, move the cursor over the button but do not select it. A description will appear in LACMIS's **status bar**.



1 INFORMATION DISPLAY INTERFACE

This chapter explains the operation of the **Information Display Interface**. The function and purpose of the toolbars and buttons shown on the **Information Display Interface**, selection of features, manoeuvring the displayed information and examples of application are explained in the sections below.

1.1 Buttons and Tools

Click on the **Information Display Interface** button to view the buttons and tools available for use.

The following describes the buttons and tools that are available for selection to view the information required.

BUTTONS AND TOOLS FOR SELECTION ON A MAP



Select Feature

Use this tool to select features from the active themes on the view. Before using this tool, activate the theme from which you wish to select the features by clicking on the name of the theme listed in the **Table of Contents** shown on the view. Select the features by clicking on them individually or defining a box around them. To select more than one feature, hold down **SHIFT** and click on the features you want to select. Features that you select are highlighted on the view.



Clear Selected Feature

Use this button to deselect a selected feature/s in the active theme(s). To make a theme active, click on its name in the **Table of Contents** shown on the view.

BUTTONS AND TOOLS FOR MOVING AROUND A MAP



Zoom In

Use this tool to zoom in to the position you click or the box you define on a view.



Zoom Out

Use this tool to zoom out from the position you click or the area you define on a view.



Pan

Use this tool to pan the view at any time by dragging it in any direction.



Zoom to Full Extent

Use this button to zoom to the full extent of all the themes in a view. Click this button to view everything in a view.



Zoom to Active Theme

Use this button to zoom to the area covered by an active theme. Before using this button, activate the theme by clicking on the theme listed in the **Table of Contents** shown on the view.



Zoom to Previous Extent

Use this button to zoom back to the previous extent you were viewing or to go back to where you were before you zoomed or panned. LACMIS remembers your previous five extents, so you can use this option to retrace your last five steps.



Zoom to Selected Features

Use this button to zoom to features you have selected from an active theme on the view.



Zoom In

Use this tool to zoom in to the center of a view or a layout by a factor of 2.0.



Zoom Out

Use this tool to zoom out from the center of a view or a layout by a factor of 2.0.

OTHERS BUTTONS AND TOOLS WITHIN THE INTERFACE



Home

Use this button to go back to the Landfill Closure Management Information System Main Page at any time.



Pointer

Use this tool to select, move, resize and make active windows such as **Identify Window, Query Dialog Box, Theme Manager, etc.**



Open Theme Table

Use this button to open and view or print the LACMIS Database for the active theme at any time.



Measure

Use the **Measure** tool to measure distance on a view. Use the mouse to draw a line defining the distance you want to measure. The measurements are displayed in the LACMIS status bar, shown in the current distance units of the view.

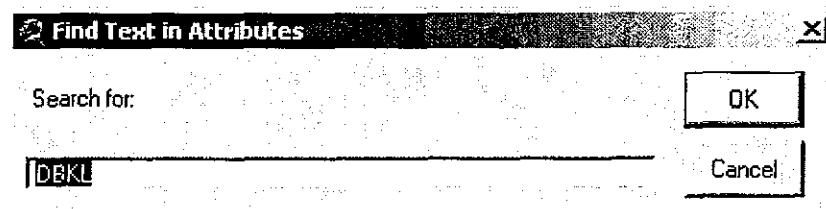


Find

Use the **Find** option to find a particular feature in a view. **Find** searches the active themes on the view until it finds a feature with the particular attribute value you specify. When a feature is found, LACMIS selects it and pans the view so that the feature is in the centre of the view.

To find a feature on a theme:

1. Click the **Find** button.
2. Type in the attribute value you wish to find. **Find** searches the first feature with the value you specified, in any of its text attribute fields (i.e. fields containing text strings). **Find** does not search in numeric fields. You do not need to enclose the text you specify in quotes. **Find** is not case-sensitive. Wildcard characters are not supported by **Find**.



3. Press **OK**. LACMIS will search the theme to find the first feature with that attribute. If one is found, it is selected and displayed in the centre of the view.

To find the next feature that matches the specified value:

1. Choose **Find** again. The value you previously specified will still be shown in the **Find** dialog box.
2. Press **OK**. **Find** will search the theme to find the next feature with that attribute.



Theme Properties

Use this button to review and change the properties of the active theme. By setting a theme's properties you can control various characteristics such as its name, how it is displayed on the view, how it is labelled, the definition of the features it will contain, etc. The properties you can set depend on the type of data source the theme is based on.



Edit Legend

Use this button to change how the active theme is displayed. Before using this button, make the theme you want to change active by clicking on its name in the **Table of Contents** shown on the view. Click **Edit Legend** to display **Legend Editor** dialog box. The **Legend Editor** allows you to change the colours and symbols used to display the features of the theme. You can also classify the features and display them with different symbols according to their tabular attributes. If the active theme is an image, you can choose the bands and colours used to display the image.

Shortcut to display the **Legend Editor**: Double-click the name of the theme you want to change.



Query Builder

This button allows you to query data according to tabular attributes by building a query expression.



Rating Information

Use this button to open tables and charts automatically and to tile up for viewing.



Update Data

Use this button to display a list of database for you to choose for updating.



Vertex Edit

Use this tool to reshape a feature or graphic by moving, adding, or deleting vertices.



Identify

Use this tool to display the attributes of a particular feature on a view.



Power Link

Use this button to bring up a dialog box and to link several formats of documents or images.



Label

Use this tool to place a simple text label for the feature in the topmost active theme that you clicked on.



Text

To add new text, click the **Text** tool and click the position where you want to add the text. A dialog box will appear that lets you enter the text and choose alignment, spacing and positioning options. To edit existing text, click the **Text** tool and click on the text you want to edit.



Draw Point

Use this tool to add graphics to a view or layout.



Initiate

This button is to add or delete a theme on the view.



Save Project

Use this button to save the project you are working on. If your project has not been saved yet, LACMIS displays a dialog box that allows you to select a name and location on which to save your project.




Help


Use this button to get help on any of the buttons, tools or menu choices. Click the **Help** button and then click any other button, tool or menu choice to get help.

1.2 Using Zoom In to View Map

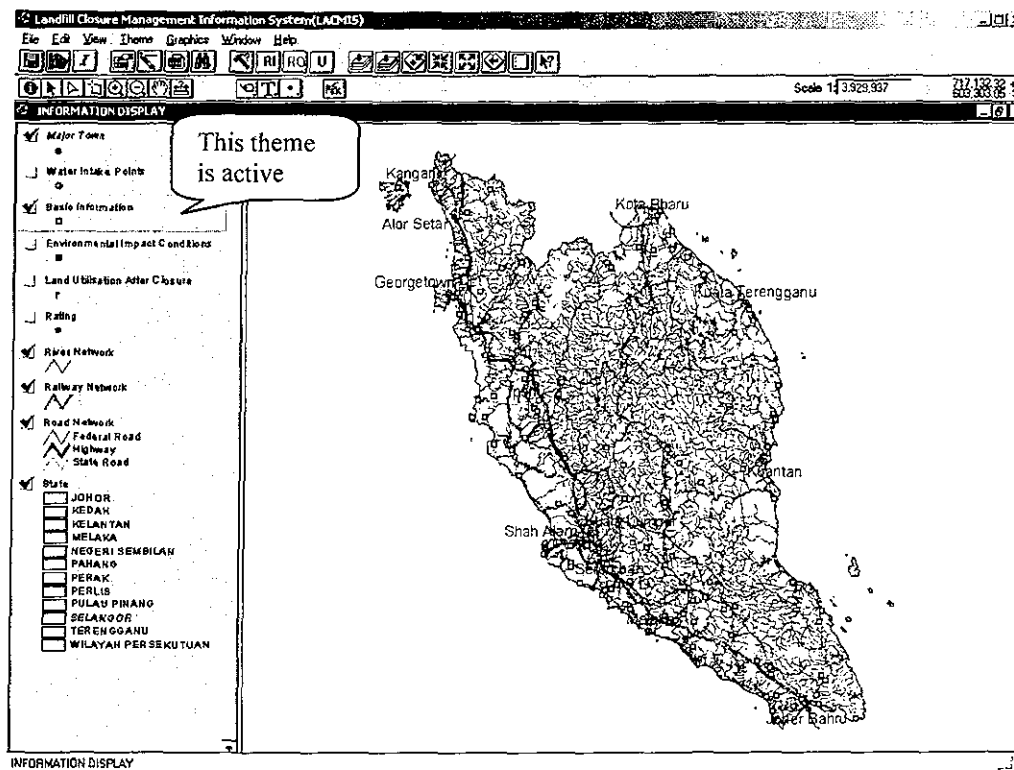
The **Zoom** tool allows you to zoom in on selected areas on an active theme.

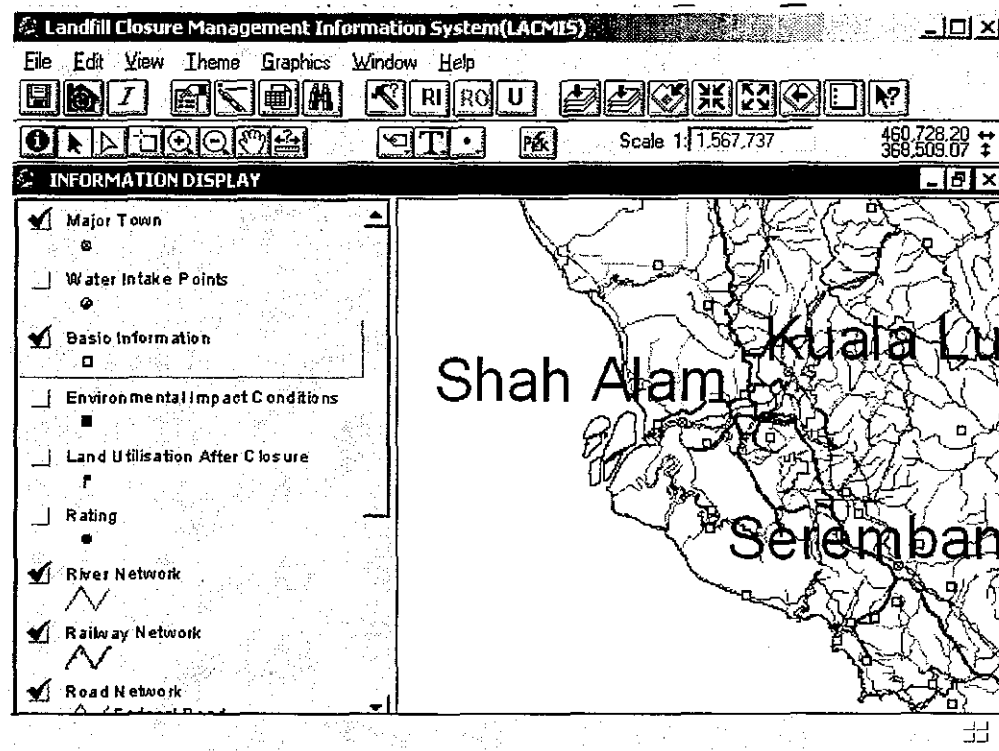
Step 1: Zoom In On Kuala Lumpur

1. Click **Information Display** button. LACMIS brings you to the **Information Display** interface.
2. In the Table of Contents, click on the Theme that you want to view to turn it on. Then click on the Theme outside its check box to make the Theme active.
3. Click Zoom In  tool.
4. Drag a box over Kuala Lumpur: position the cursor where you want one corner of the box to be, hold down the left mouse button, drag the mouse until the box covers the area you want to zoom in on, then release the button to finish. The view redraws to show you the area in the box you have defined.

If you have made a mistake, click **Zoom to Previous Extent**  button to go back to where you were before you zoomed in.

Now that you have zoomed in on Kuala Lumpur, you can see clearly the location of the landfill site.







1.3 Identify Features on The Map

The **Identify** tool allows you to display the attributes of features on a view by clicking on them with the mouse.

Select **Identify** tool and click on any feature in the active theme(s) on your view to display its attributes. Attributes of all features located at the same point are displayed.

Use the **Identify**  tool to get information on any feature on your map. When you click on a feature with this tool, LACMIS displays the attributes of the feature in a dialog box.


Step 2: To identify a feature on a map

1. Click **Identify**  tool.
2. Click on the feature you wish to identify. The feature you click on flashes in the view, and its attributes appear in the **Identify Results** dialog box.

The **Identify Results** dialog box has two panels: the left side contains a list of all of the features, records, or chart data markers you have identified so far. The right side of the dialog box displays the results of each **Identify**.

Identify Results	
1: Basic Information - DB-01	
Shape	Point
No	DB-01
Longitude	101 40 20
Latitude	03 13 40
X	101.667222
Y	3.227778
User_id	5
State	DBKL
Name of LA	DB Kuala Lumpur
Name of Site	Taman Beringin
Address of Site	Taman Beringin
Layout site attached	No
Remarks on Layout	
Category	Operation
Remaining Life Span	1.0
Managed by	Others
Remarks of "Others"	Private Company
Land Ownership	Government
Remarks on Ownership	State land
Gazetted	Yes
Disposal Operation-Year Start	1995
Disposal Operation-Year End	2004
Area (ha)	12.00
Waste Disposed Daily-T/d	2200.00
Reasons for Closure	
Remarks on Closure	
Remarks	

Step 3: To identify features on a map

1. Hold down **SHIFT** and click on the themes to activate them.
2. Click **Identify**  tool.
3. Click on the feature you wish to identify. The feature you click on flashes in the view, and its attributes of different themes appear in the **Identify Results** dialog box.

Step 4: To select alternative results of Identify Results dialog box

Click on a name on the left side of the dialog box. If you have identified a feature on a view, LACMIS will highlight or flash the feature represented by that record.

Step 5: To clear the current Identify result

Click **Clear** in the dialog box. LACMIS removes the current record displayed in the dialog box.

Step 6: To clear all the Identify results




Click **Clear All** in the dialog box. LACMIS clears all results from the dialog box.

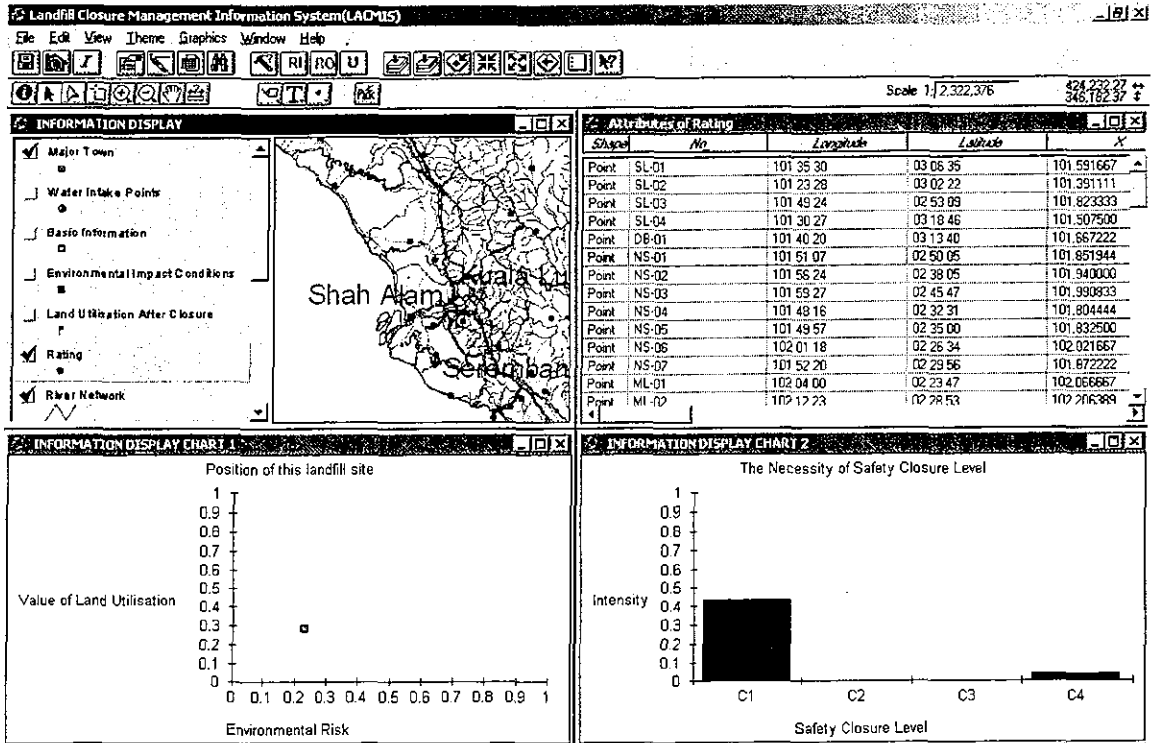
Identify Results		
1: Basic Information - DB-01	Shape	Point
2: Environmental Impact Conditions - DB-01	No	DB-01
3: Land Utilisation After Closure - DB-01	Longitude	101 49 20
4: Rating - DB-01	Latitude	03 13 40
	X	101.667222
	Y	3.227778
	User id	5
	Landfill Level	Level 2
	Remarks on Landfill Level	
	Site Condition	ex Quarry/Mines
	Remarks on Site Condition	
	Waste Covered	Weekly
	Remarks on Waste Covered	
	Type of Vegetation	no vegetation
	Remarks on Vegetation	
	Landslide	Medium
	Remarks on Landslide	slope 1:1-1.5, hight 30m
	Soil Subsidence	not noticeable
	Remarks on Soil Subsidence	
	Vector and animals	Medium
	Remarks on vector and animals	flies
	Odour, Gas and Smoke	Medium
	Remarks on Odour, Gas and Smoke	odour
	Leachate Quantity	Noticeable
	Remarks on Leachate Quantity	

Clear Clear All



1.4 Viewing Charts, Maps, Images or Photographs

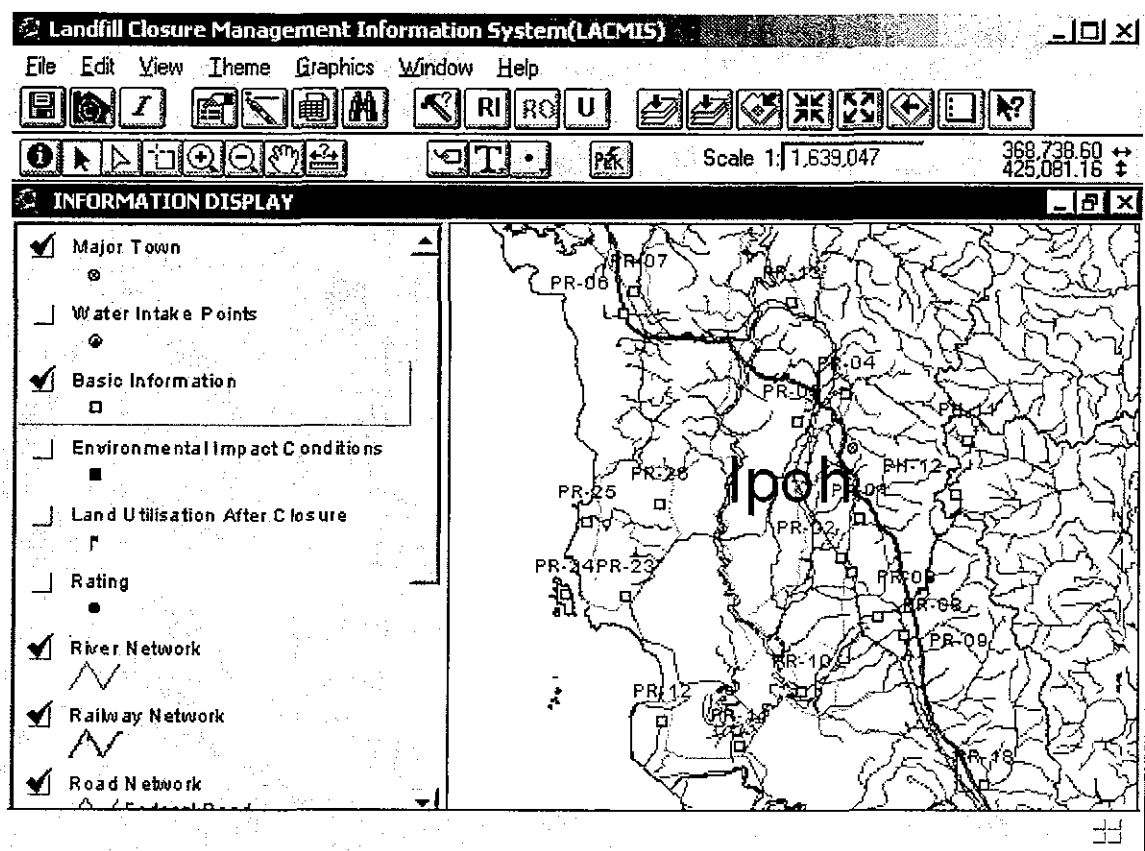
Step 7: To view charts on the map

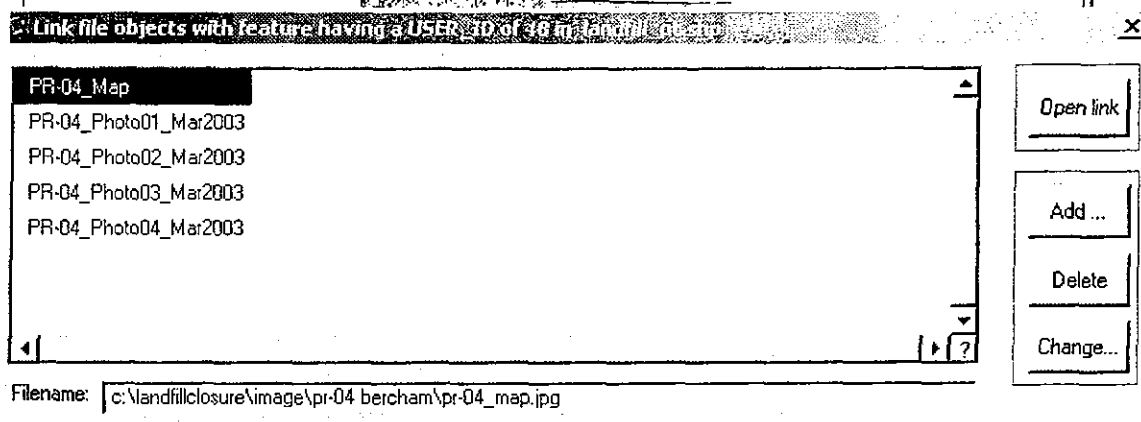
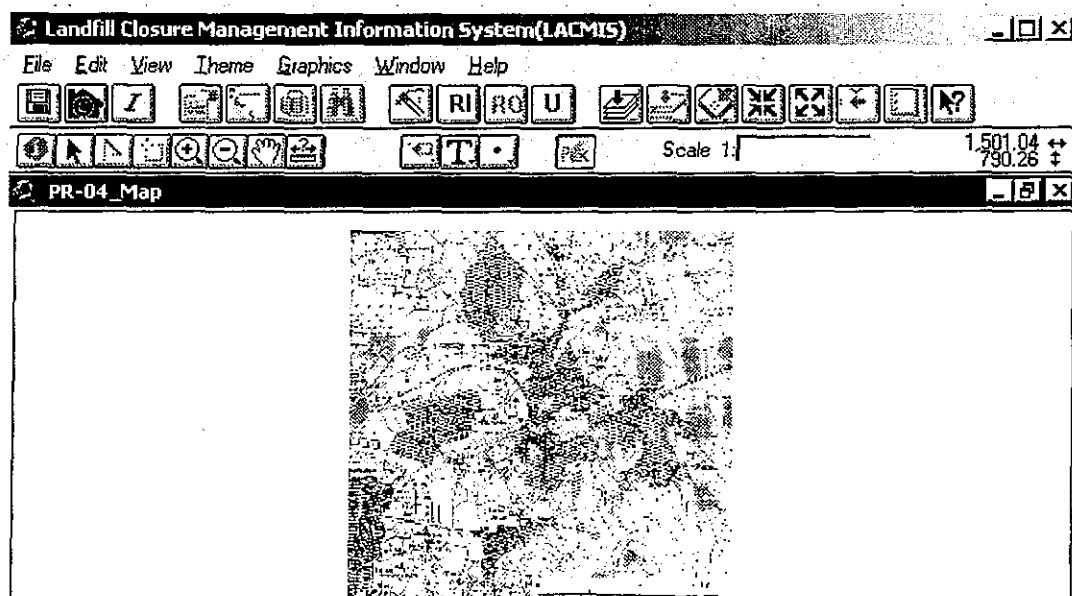
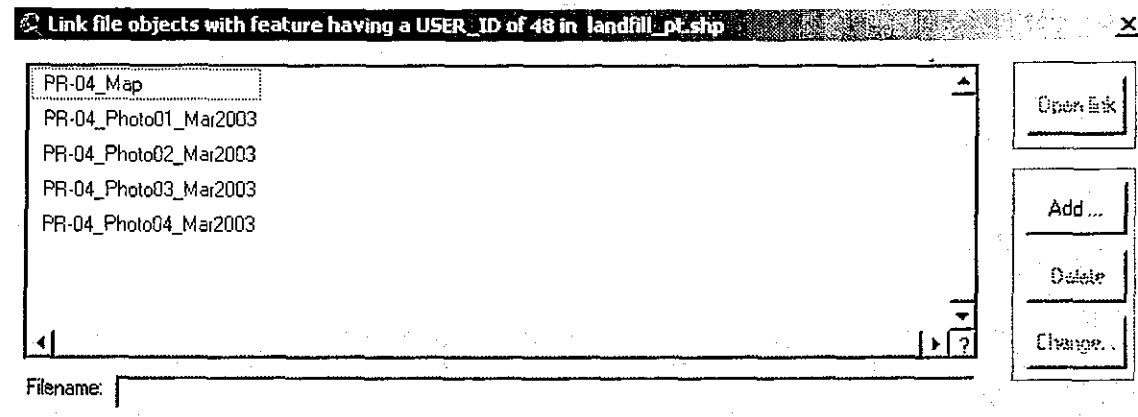
1. Click **Rating Information**  button.
2. The window will tile the view, table and two charts together in the interface.
3. If the charts do not display any data (due to too much data), click on any feature on the map or any row in the table to see the data.
4. To go back to the **Information Display** view, click **Attributes of Rating** bar to activate the window or any bar charts to activate its window. Then click **Back to Information Display**  button.
5. If you want to go back to **Main Page**, click **Back to Main Page**  button.

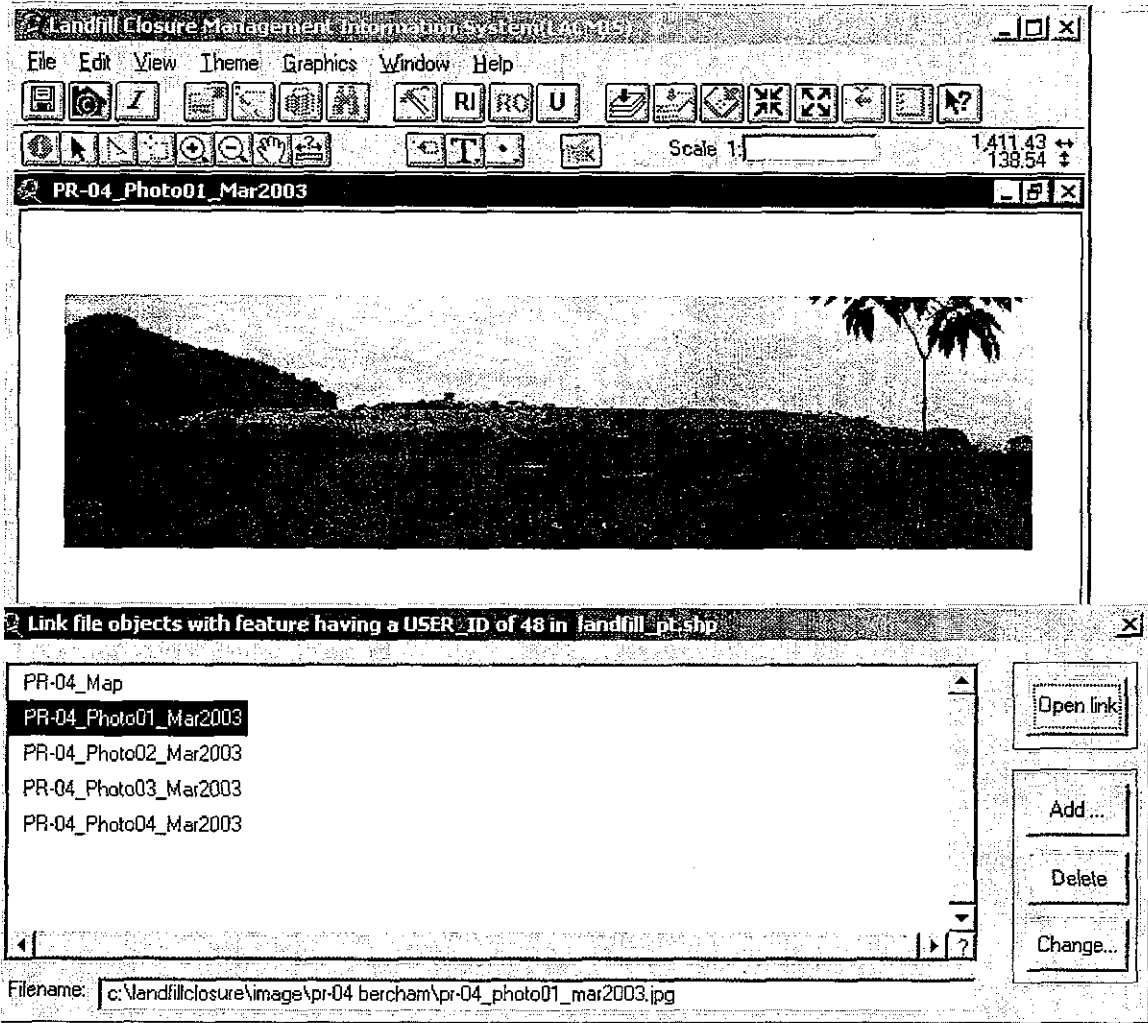


Step 8: To view maps, images or photographs

1. Click **Zoom In**  tool to zoom in on the map for Ipoh.
2. Make sure the **Basic Information** theme is visible and active. Click **Power Link**  button.
3. Click on the landfill site **PR-04**. A linking dialog box pops up with a list of images and photos.
4. Select a **PR-04_Map**. Click **Open Link**. Notice that the path of the map is shown under the **Filename**. Continue to select the photographs that you want to view from the list. Close the linking dialog box after viewing.







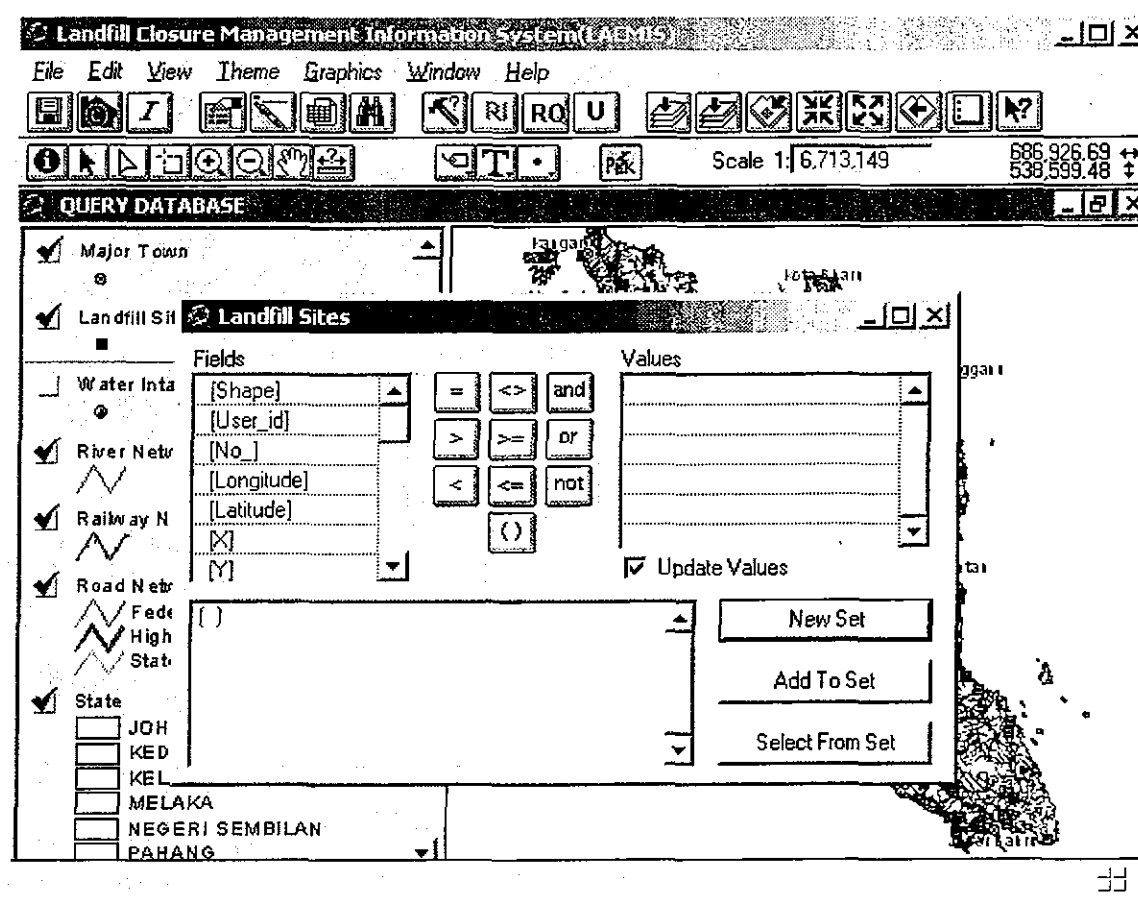
2 QUERY DATABASE INTERFACE

This chapter explains the use of query functions on database. The versatile functions allow the user to view the requested information quickly. It also helps users in decision-making process.


2.1 Procedures on Creating A Query

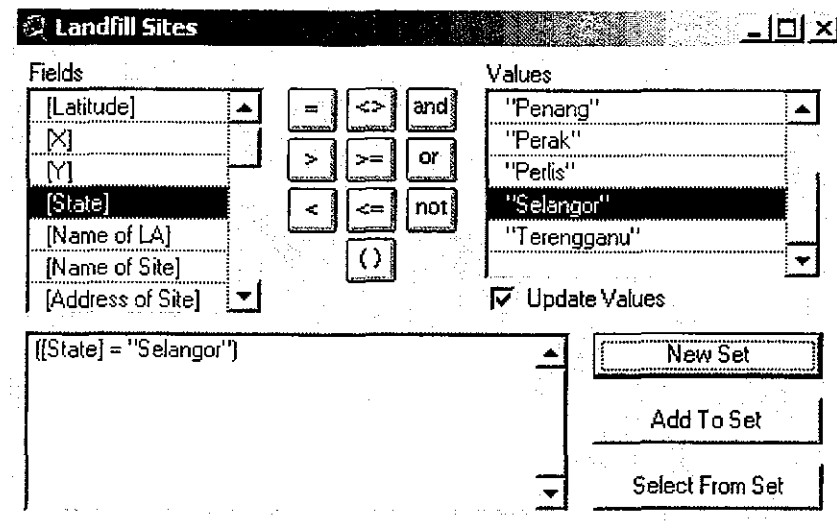
Step 1: To create a Query on Landfill Sites in Selangor

1. Click on the **Query Database** button, LACMIS will bring you to the interface for **Query Database**.
2. **Landfill Sites** query builder dialog box will appear on the screen. In the query builder dialog box, create queries according to the steps illustrated in the application below.

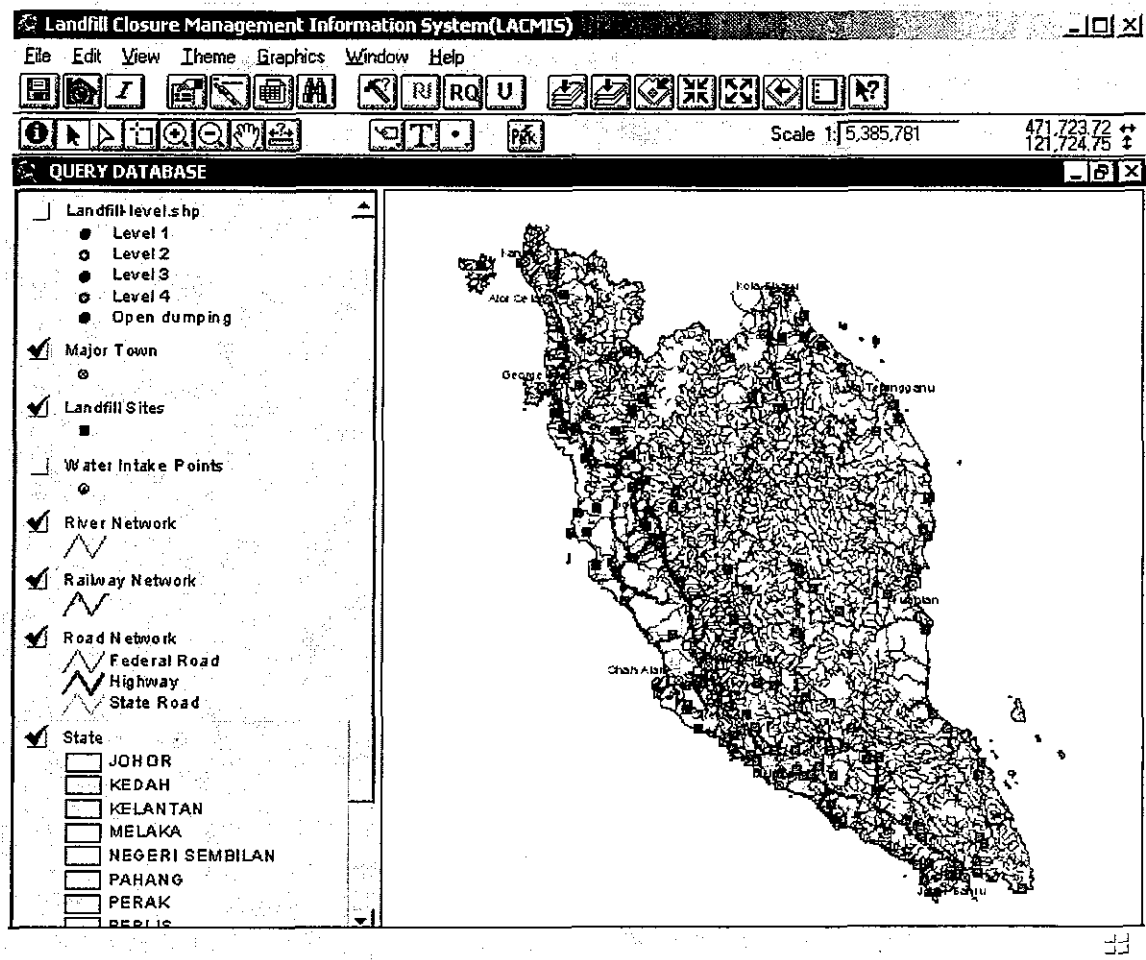
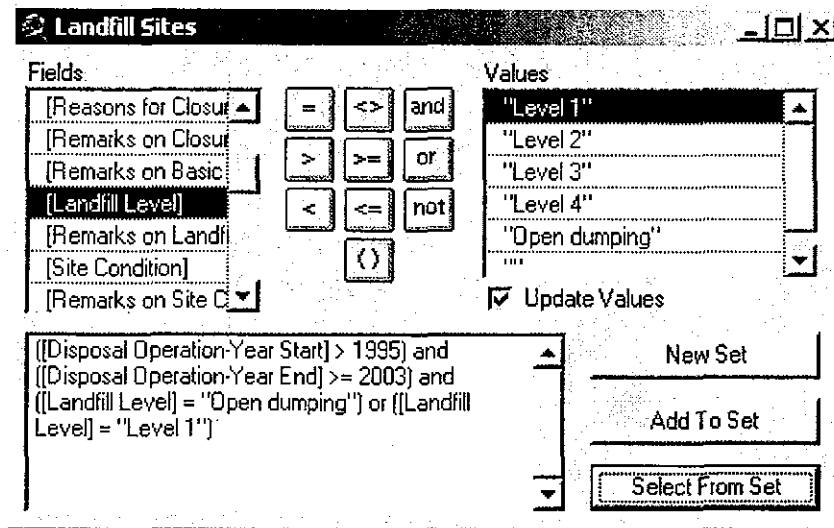


- State Selangor
- Commencement of operation 1995
- Status In operation
- Landfill Level Open Dumping (Level 1)

3. Double-click **State** in the **Fields** list, click the  operator button, and then double-click **"Selangor"** in the **Values** list.
4. Press **New Set**. The Landfill Sites in Selangor will be highlighted in yellow.



10. Press **Select From Set**. The result of Example 1 is highlighted in yellow as shown on the map.



A Note About Query



Query

The **Query** button allows you to select features by defining a query based on their attributes.

Building A Query

To build a query, choose a **Field**, then an **Operator**, then a **Value**. You build a query by double-clicking on these options with the mouse or by typing your query directly into the query text box. By default, the query is contained within parentheses, but the parentheses may not be required, depending on the complexity of your query. If the **Update Values** choice is on, click once on a field name to list its values in the **Values** list. Field names are always enclosed in square brackets ([]). If the value you want to use in the query is not in the **Values** list, type it into the query text box.

For example, to select all the landfill area of more than 5 ha, you could use the query:

```
( [area] > 5 )
```

Strings such as names are always quoted in queries. Queries on non-indexed fields are case insensitive, so you can select Selangor with:

```
( [State] = "Selangor" )
```

Use * as a multiple character wildcard. For example, to select Terengganu you could use the query:

```
( [State] = "Teren*" )
```

Use * as a multiple character wildcard to search for word/s that are combined with other words in the same cell.

```
( [Existing Land Utilisation] = "*housing*" )
```

To select all the Name of Site with names starting with the letters M to Z, you could use:

```
( [Name of Site] >= "m" )
```

Complex queries can be built by combining expressions together with the **And** and **Or** operators. For example, to select all the Local Authorities that have more than 1,500 square feet and a garage for three or more cars, use the query:

```
( [area] > 1500) and ( [garage] > 3 )
```

Use the **Not** operator to exclude. For example, to select all the Selangor District except Kuala Langat, use the query:

```
( [State] = "Selangor") and ( not ([District] = "Kuala Langat") )
```

Queries can compare the values of two fields. For example to find all the counties with a declining population, use the query:

```
( [pop1990] < [pop1980] )
```

Dialog box options

Fields

This lists the fields in the theme or table you are querying. If the **Update Values** choice is on, click once on a field to see all its values listed in the **Values** list. Double-click on a field to place it into the query text box. If you type in the name of a field instead of clicking in this list, field names are not case sensitive, so typing Area, area or AREA are all allowed.

Fields that have been hidden do not appear in the **Fields** list. If field name aliases have been defined these aliases appear in the **Fields** list.

Operators

Use these operators to specify relationships between **Fields** and **Values** in a query. Either click or double-click an operator to place it into the query text box.

- = equals
- > greater than
- < less than
- <> not equal to
- >= greater than or equal to
- <= less than or equal to
- () expressions enclosed in parentheses are evaluated first.
- and both expressions are true, e.g. [area] >= 100 and [area] <= 200
- or at least one expression is true, e.g. [rainfall] < 20 or [slope] > 35
- not excludes, e.g. not [name] <= "california"

The mathematical operators + - * / and arbitrary Avenue expressions can also be used in queries.

To enclose an expression in parentheses, select it in the query text box by dragging over it with the mouse, and then click the () operator. Parentheses will enclose the selected part of the query.

Values

This lists the values for the chosen **Fields**. Only unique values are listed. So for example if 5 features or records in the theme or table you are querying have the same value for the chosen field, this value is only listed once in the **Values** list. Double-click a value to place it into the query text box. If the value you want to use is not in the list, type it into the query text box. Values cannot be displayed for tables containing more than 32765 records.

Update Values

By default, the **Values** list updates each time you choose a field. If there are a lot of values, it may take a moment for the values to be updated. Click this choice off if you don't want to update the values. This is particularly helpful if your query compares one field to another and you don't need to see their values, or if want to type specific values into the query text box instead of choosing them from the **Values** list.

Query text box

This is where your query is displayed as you build it.

Button On Performing A Query On A View

New Set button

Makes a new selected set containing the features or records selected in your query. Features or records not in this set are deselected.

Add To Set button




Adds the features or records selected in your query to the existing selected set. If there is no existing selected set, the features or records specified in the query become a new set. Use this option to widen your selection.

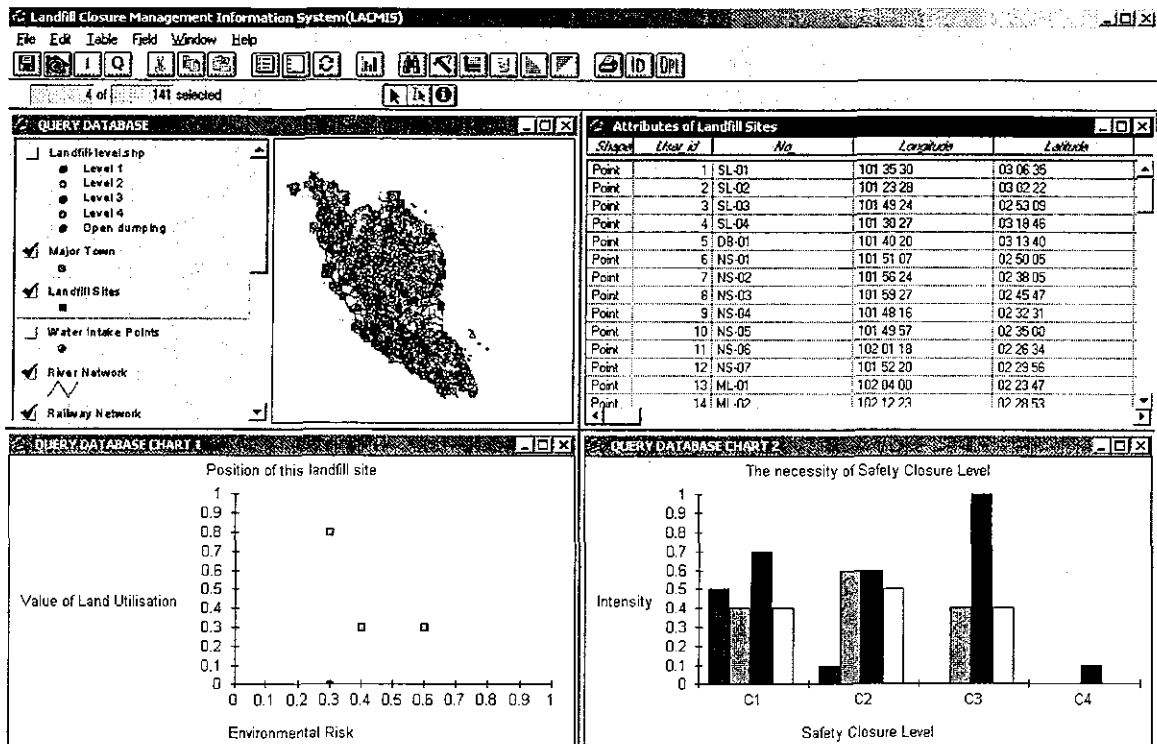
Select From Set button

Selects the features or records in your query from the existing selected set. Only those features or records in this existing set that are selected in your query will remain in the selected set. Use this option to narrow down your selection.

2.2 Viewing Charts on A Map

Step 2: To view charts on a map

1. Click Rating Query .
2. The window will open the table on the entire database together with the 2 charts. The window will tile up the view, table and 2 charts automatically.
3. The query that has been done through the **Query Builder** dialog box will show in the charts. However, the limitation to show the bar chart is up to 25 records.
4. Viewing on different records can be seen in the charts by clicking on one of the feature on the **Landfill Sites** theme in the view. Alternatively, clicking on one of the records in the table will also be shown in the charts.
5. To go back to the **Query Database View**, you need to click on the **Attributes of Landfill Sites** table to activate it and then click **Back to Query Database**  button to go back to **Query Database View**. Alternatively, to go back to the **Main Page**, click **Back to Main Page**  button.



3 CREATE, PRINT AND EXPORT LAYOUTS OR TABLES

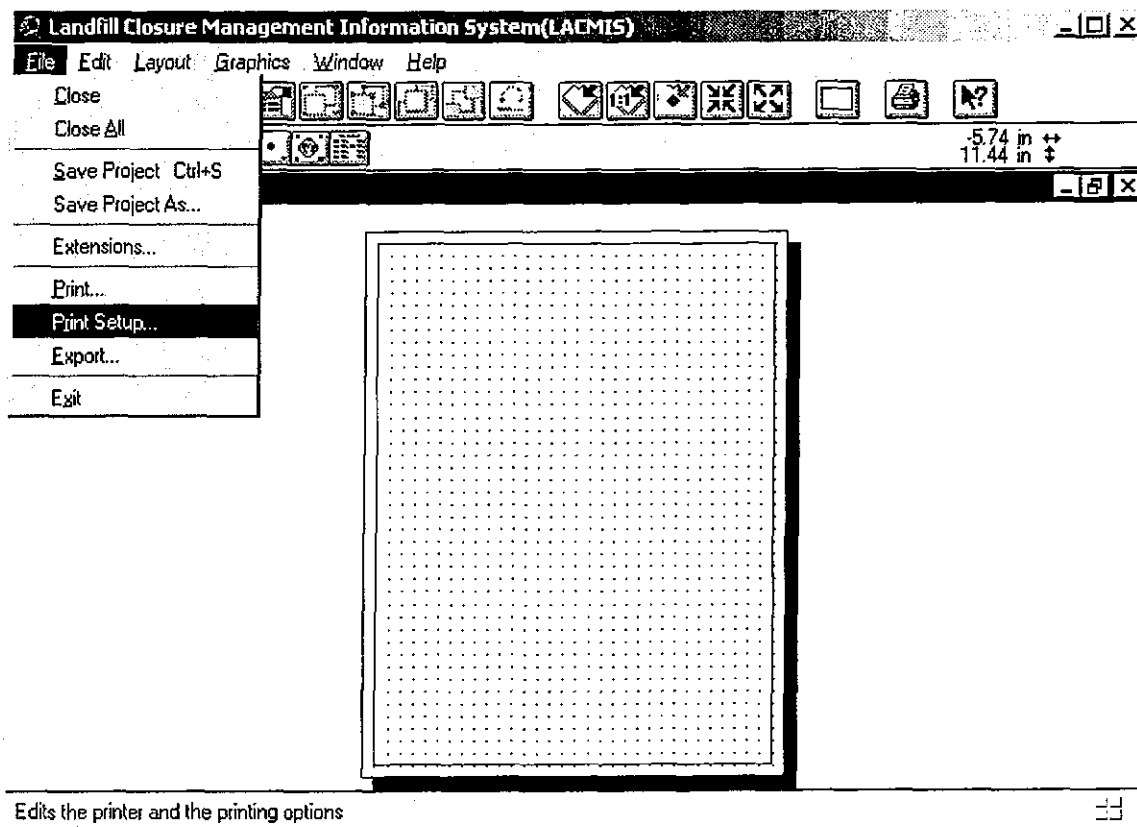
This chapter explains how to produce a layout to be printed, print it and also export it as an image file.

3.1 Create, Print and Export A Layout

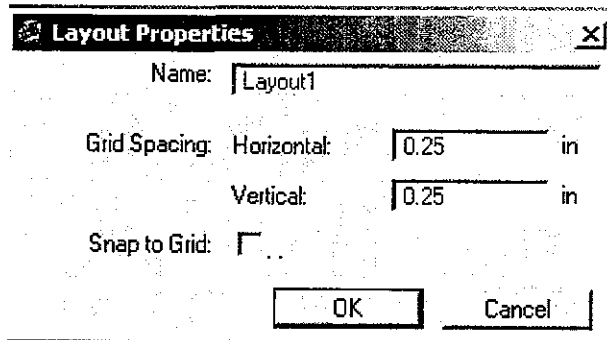
3.1.1 Create A Layout


Step 1: To create a Layout

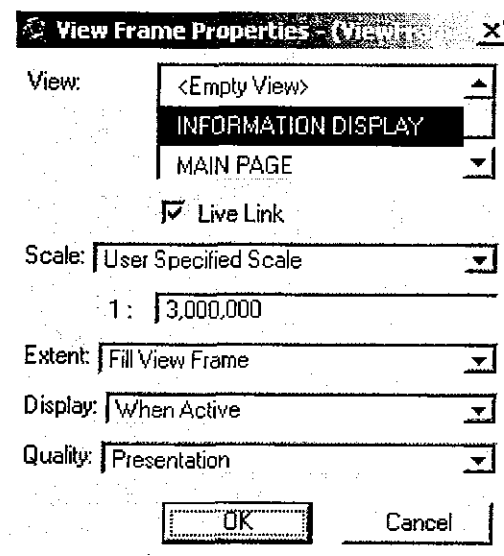
1. On the **Information Display View**, make sure the theme that you want to create in layout is a check box. Click to close the **Information Display View**.
2. The **Project Window** will be seen in the interface with the **Layouts** icon shown. Click **Layouts** and click **New**.
3. The **Layout** window will be shown. To set up the page, click on the **File** menu and click **Print Setup**.

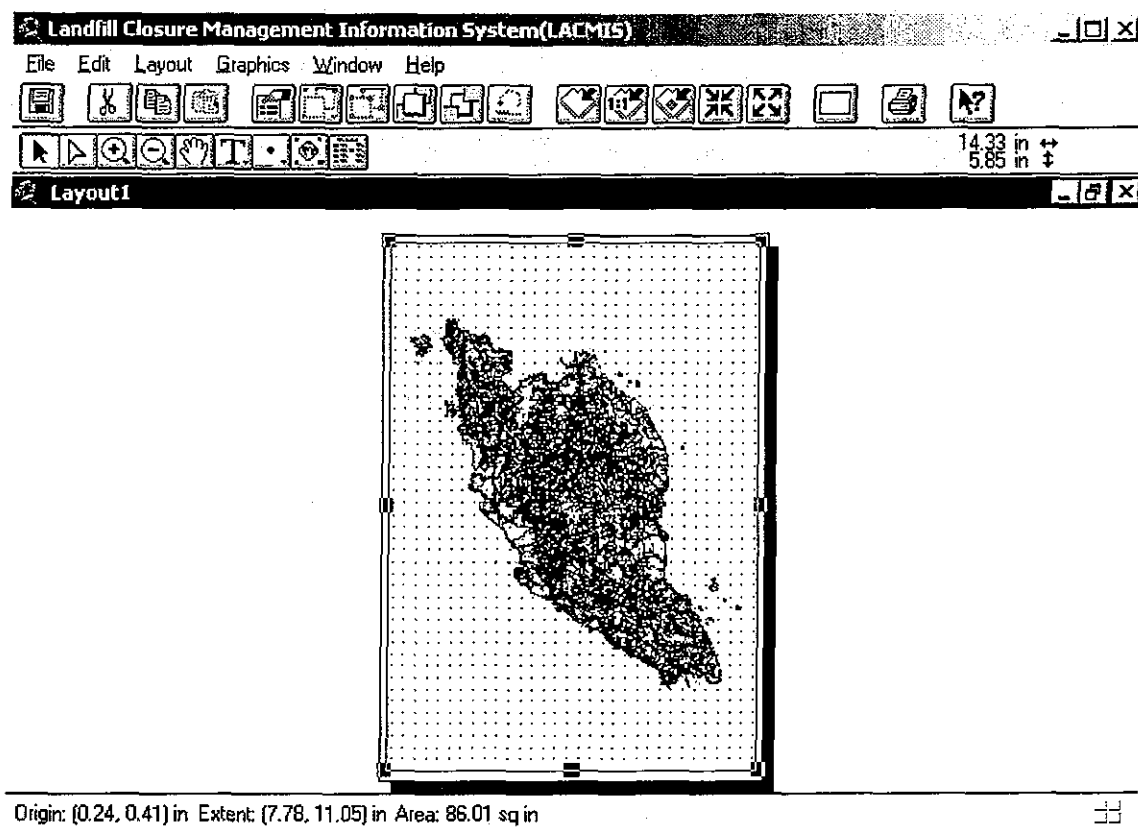


4. Change the setting of the printer and also the paper size according to your needs. For this exercise, use an A4 paper.
5. Click **Layout** menu and click **Properties**. Click **Snap to Grid** to uncheck the box. Then click **OK**.

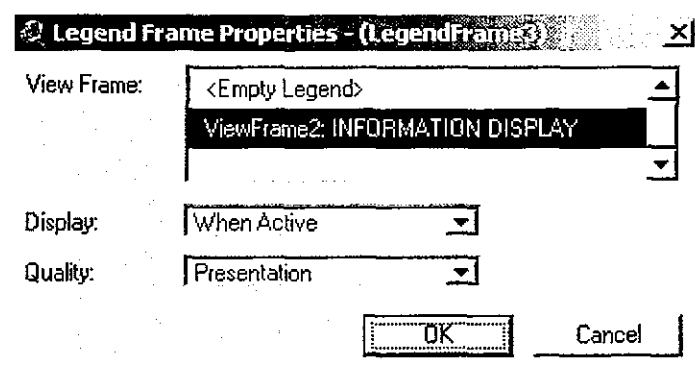


6. Click **View Frame**  tool. Move the cursor to where you want one corner of the view frame to be placed, hold down the left mouse button, and drag out a box to define the frame. Release the mouse button when the frame is the size you want. The **View Frame Properties** dialog box appear and select **Information Display**. Click **Scale** and change to **User Specified Scale**. Type in **3,000,000** underneath the drop-down list. Then click **OK**.

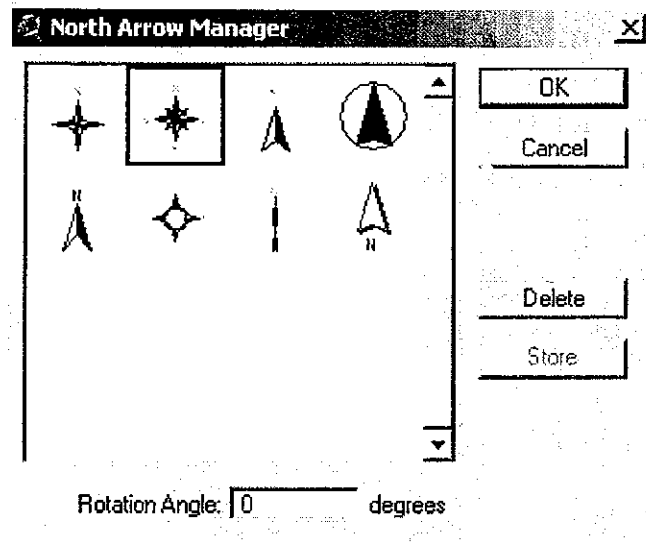





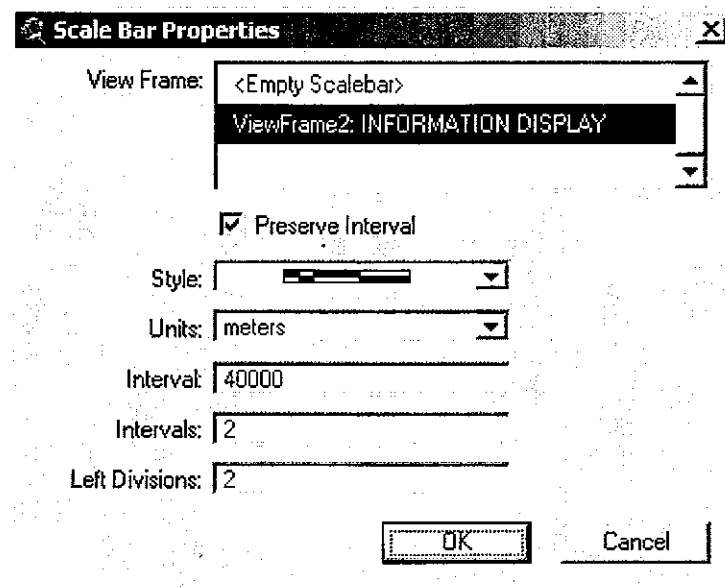
7. Click **View Frame** tool and hold down on the tool to select **Legend Frame** tool. Use the mouse to define where you want the legend to be drawn. The **Legend Frame Properties** dialog box appears. Choose the name of the view frame already in the layout that you want this legend to be associated with. Press **OK**.




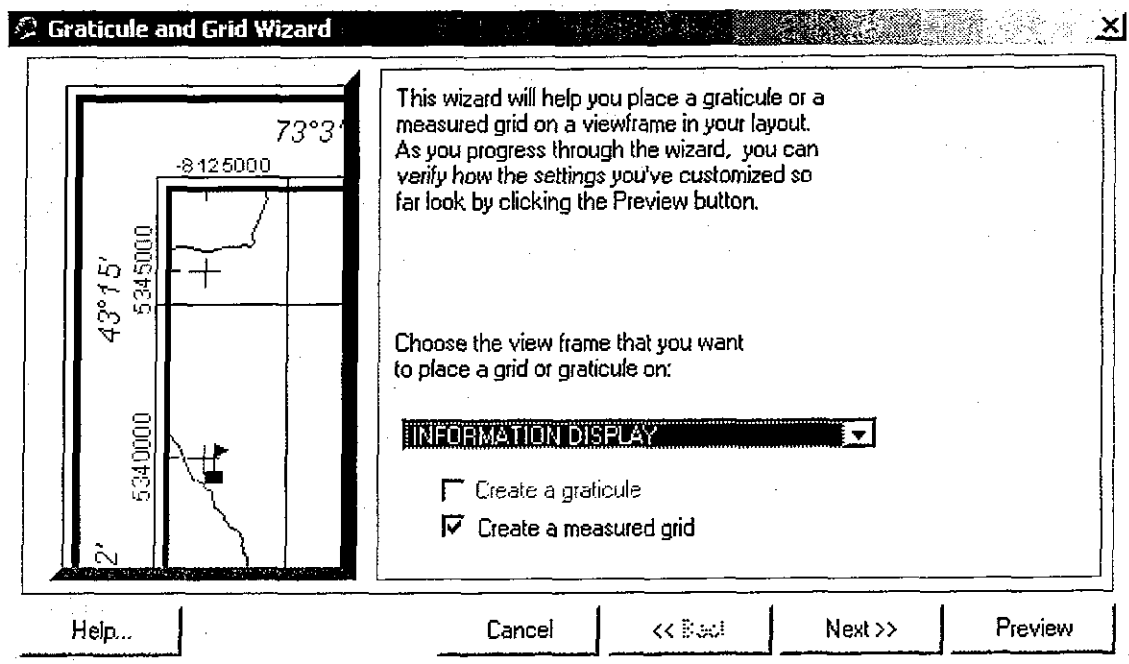
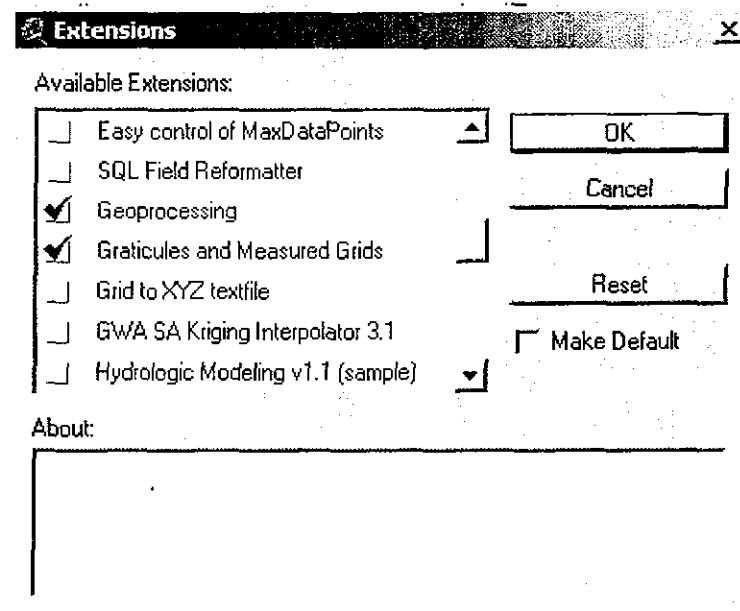
8. Click **North Arrow Frame** tool. Use the mouse to click on the layout where you want the north arrow to be drawn. The **North Arrow Manager** dialog box appears. Choose the north arrow style you want to use, and set the rotation angle, if desired. Press **OK**.



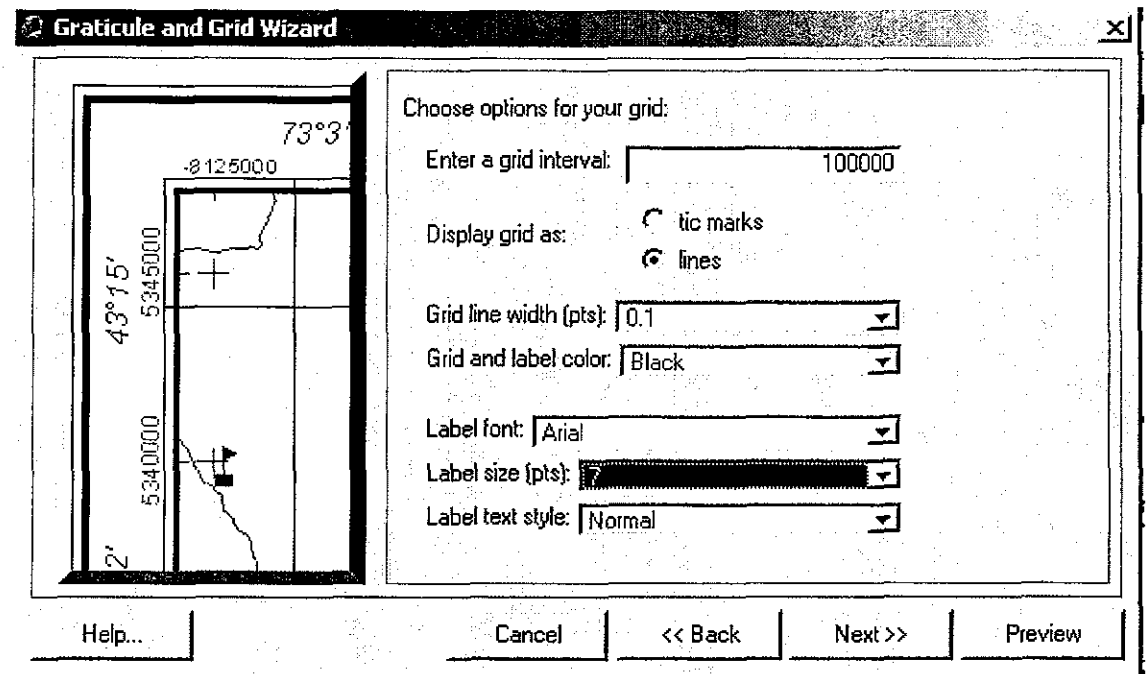
9. Click **Scale Bar Frame**  tool. Use the mouse to define where you want the scale bar to be drawn. The **Scale Bar Properties** dialog box appears. Choose the name of the view frame already in the layout that you want the scale bar to be associated with, and choose the other properties of the scale bar as shown below.



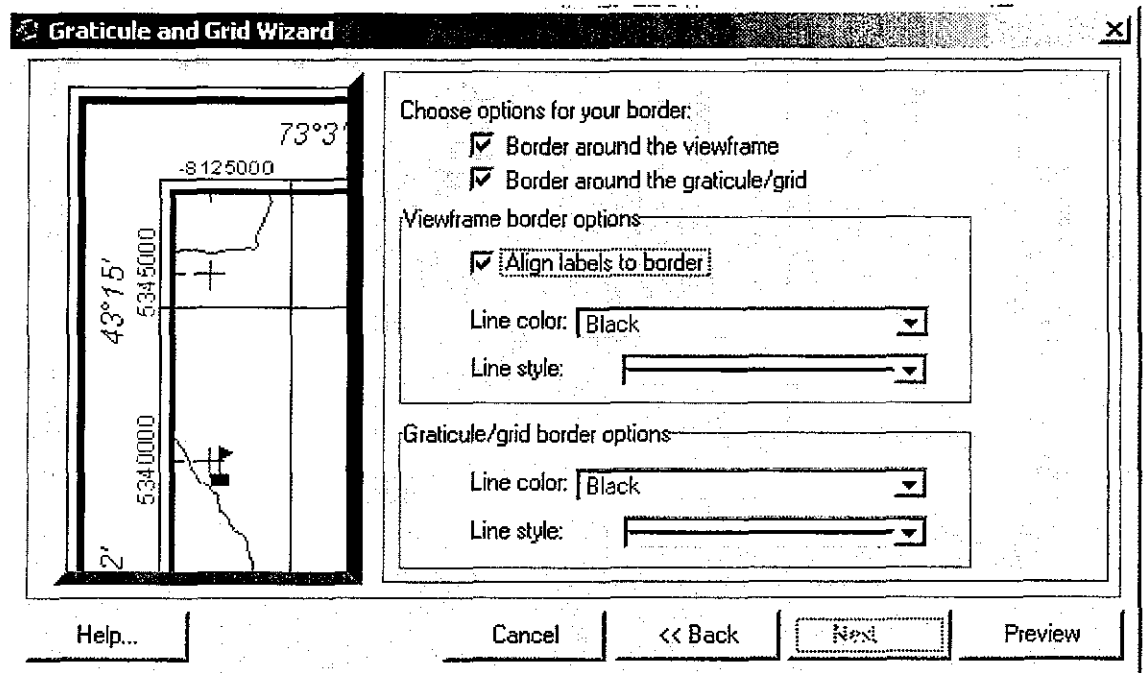
10. Grids can also be put on the layout based on the view frame. Click **File** menu and click **Extensions** to load the **Graticules and Measured Grids**. Click on the **Graticules and Measured Grids**  button. The **Graticules and Grid Wizard** dialog box appears.

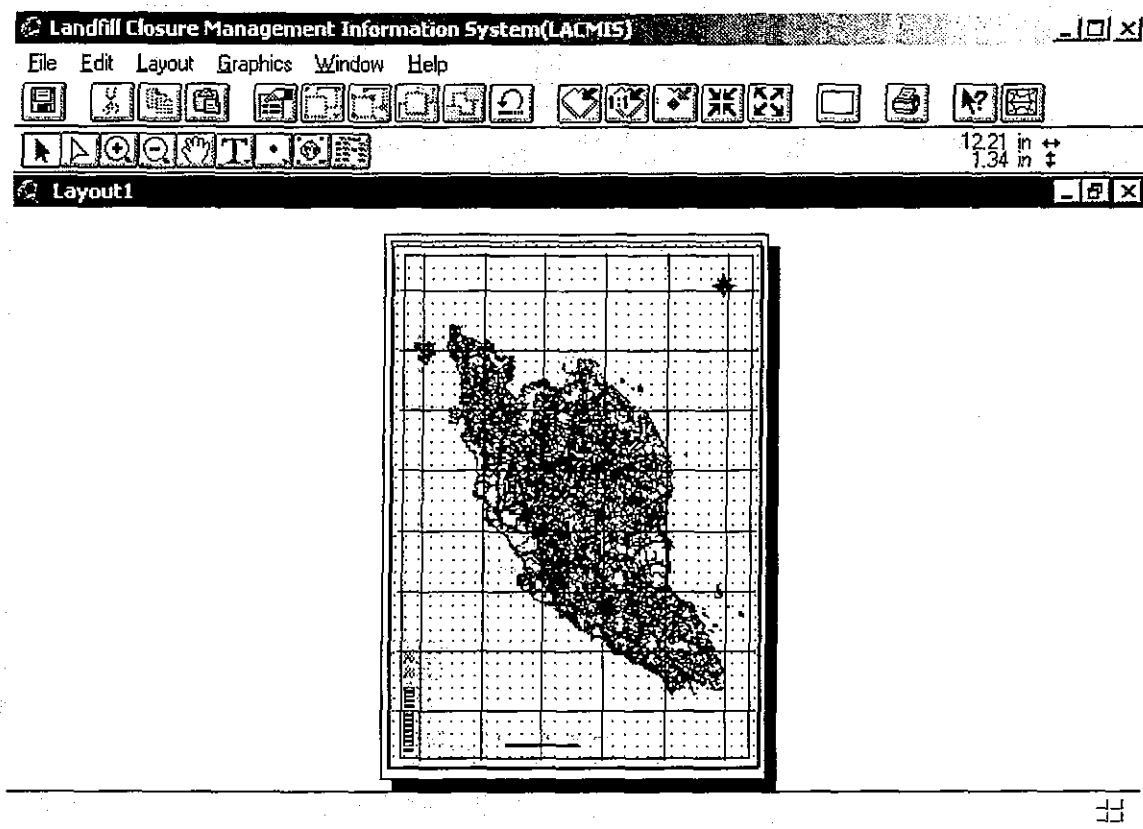


11. Click **Next**. Change accordingly to the view shown below.



12. Click **Next**. Check box for all the conditions and click on **Preview** button. Then click **Finish** button. The layout will look like as below.





3.1.2 Print A Layout

Step 2: To print a Layout

1. Click on **File** menu and click **Print**. Set up the **Printer** before printing to fit to the size of the paper that the layout is in.

3.1.3 Export A Layout

You can export a layout to a graphics file in any number of supported output formats. In this way, you can use this file in other applications. For example, you could enhance or edit the graphic in a graphics program, or import the file into a word processor or desktop publishing program.



Step 3: To export a Layout

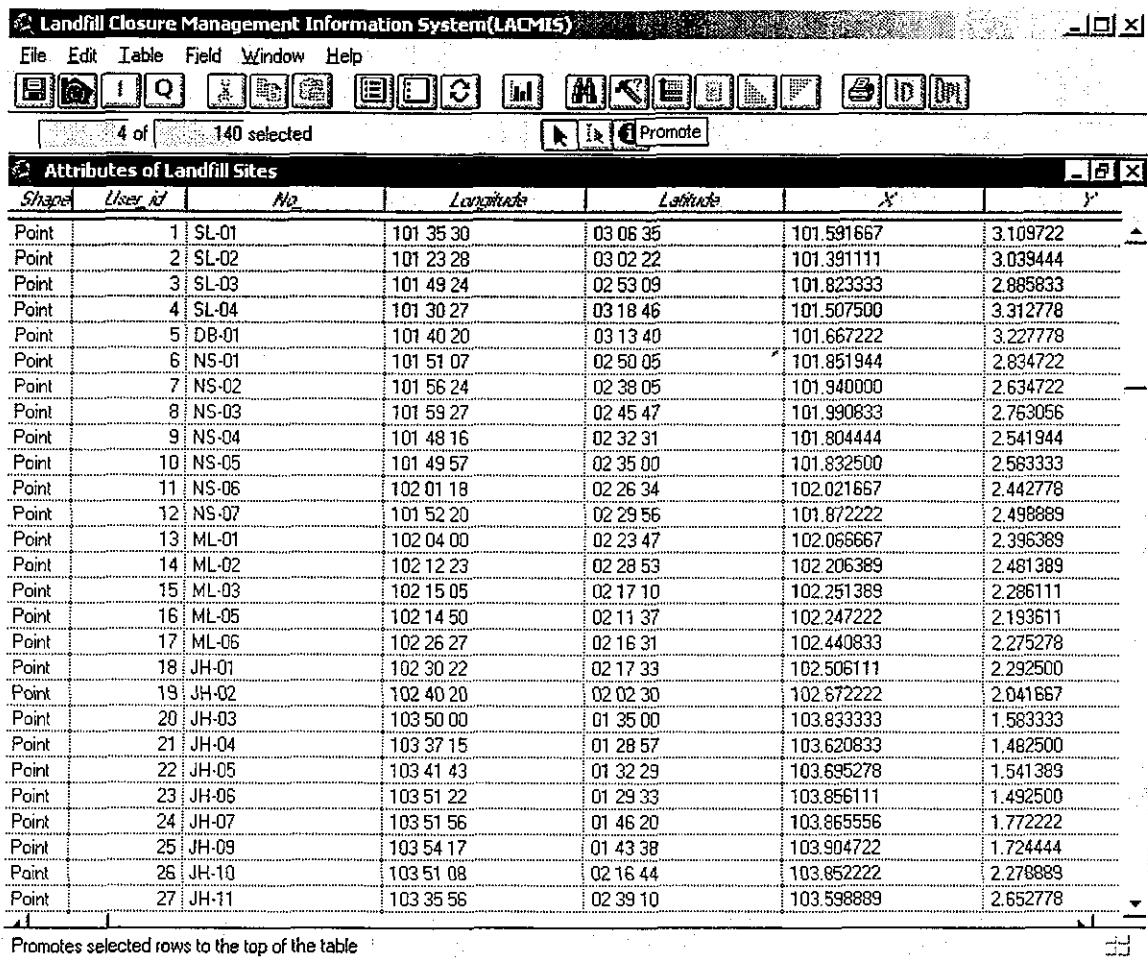
1. Go to **Layout1** and make the layout active.
2. From the **File** menu, choose **Export**.
3. In the dialog that appears, choose the file format you want to export the layout to from the dropdown list of file types. If an **Options** button appears after you have chosen the file type, press it to set specific options for this file type.
4. Specify the name and location of the file you wish to create.
5. Press **OK**.

3.2 Create, Print And Export A Table

3.2.1 Create A Table

Step 4: To create a Table

1. On the **Query Database View**, use the query results that have been generated in **Section 2.1: No. 2**. Click **Open Theme Table**  button to view the table.
2. The table should be highlighted in yellow, and if it is not promoted yet to the top of the table, click **Promote**  button and all the selected row will be place on the top of the table.



Shape	User_id	No	Longitude	Latitude	X	Y
Point	1	SL-01	101 35 30	03 06 35	101.591667	3.109722
Point	2	SL-02	101 23 28	03 02 22	101.391111	3.039444
Point	3	SL-03	101 49 24	02 53 09	101.823333	2.885833
Point	4	SL-04	101 30 27	03 18 46	101.507500	3.312778
Point	5	DB-01	101 40 20	03 13 40	101.667222	3.227778
Point	6	NS-01	101 51 07	02 50 05	101.851944	2.834722
Point	7	NS-02	101 56 24	02 38 05	101.940000	2.634722
Point	8	NS-03	101 59 27	02 45 47	101.990833	2.763056
Point	9	NS-04	101 48 16	02 32 31	101.804444	2.541944
Point	10	NS-05	101 49 57	02 35 00	101.832500	2.583333
Point	11	NS-06	102 01 18	02 26 34	102.021667	2.442778
Point	12	NS-07	101 52 20	02 29 56	101.872222	2.498889
Point	13	ML-01	102 04 00	02 23 47	102.065667	2.396389
Point	14	ML-02	102 12 23	02 28 53	102.206389	2.481389
Point	15	ML-03	102 15 05	02 17 10	102.251389	2.286111
Point	16	ML-05	102 14 50	02 11 37	102.247222	2.193611
Point	17	ML-06	102 26 27	02 16 31	102.440833	2.275278
Point	18	JH-01	102 30 22	02 17 33	102.506111	2.292500
Point	19	JH-02	102 40 20	02 02 30	102.672222	2.041667
Point	20	JH-03	103 50 00	01 35 00	103.833333	1.583333
Point	21	JH-04	103 37 15	01 28 57	103.620833	1.482500
Point	22	JH-05	103 41 43	01 32 29	103.695278	1.541389
Point	23	JH-06	103 51 22	01 29 33	103.856111	1.492500
Point	24	JH-07	103 51 56	01 46 20	103.865556	1.772222
Point	25	JH-09	103 54 17	01 43 38	103.904722	1.724444
Point	26	JH-10	103 51 08	02 16 44	103.852222	2.278889
Point	27	JH-11	103 35 56	02 39 10	103.598889	2.652778

3. Click **"No_"** field name to active it. Click **Field** menu and click **Summarize**. **Summary Table Definition** dialog box will appear.

Landfill Closure Management Information System (LACMIS)

File Edit Table Field Window Help

Sort Ascending
Sort Descending
Remove Index

Attributes of Table

Shape	User_id	Summarize...	Longitude	Latitude	X'	Y'
Point		Calculate...	101 35 30	03 06 35	101.591667	3.109722
Point		Statistics...	101 23 28	03 02 22	101.391111	3.039444
Point	3	SL-03	101 49 24	02 53 09	101.823333	2.885833
Point	4	SL-04	101 30 27	03 18 46	101.507500	3.312778
Point	5	DB-01	101 40 20	03 13 40	101.667222	3.227778
Point	6	NS-01	101 51 07	02 50 05	101.851944	2.834722
Point	7	NS-02	101 56 24	02 38 05	101.940000	2.634722
Point	8	NS-03	101 59 27	02 45 47	101.990833	2.763056
Point	9	NS-04	101 48 16	02 32 31	101.804444	2.541944
Point	10	NS-05	101 49 57	02 35 00	101.832500	2.583333
Point	11	NS-06	102 01 18	02 26 34	102.021667	2.442778
Point	12	NS-07	101 52 20	02 29 56	101.872222	2.498889
Point	13	ML-01	102 04 00	02 23 47	102.066667	2.396389
Point	14	ML-02	102 12 23	02 28 53	102.206389	2.481389
Point	15	ML-03	102 15 05	02 17 10	102.251389	2.286111
Point	16	ML-05	102 14 50	02 11 37	102.247222	2.193611
Point	17	ML-06	102 25 27	02 16 31	102.440833	2.275278
Point	18	JH-01	102 30 22	02 17 33	102.506111	2.292500
Point	19	JH-02	102 40 20	02 02 30	102.672222	2.041667
Point	20	JH-03	103 50 00	01 35 00	103.833333	1.583333
Point	21	JH-04	103 37 15	01 28 57	103.620833	1.482500
Point	22	JH-05	103 41 43	01 32 29	103.695278	1.541389
Point	23	JH-06	103 51 22	01 29 33	103.856111	1.492500
Point	24	JH-07	103 51 56	01 46 20	103.865556	1.772222
Point	25	JH-09	103 54 17	01 43 38	103.904722	1.724444
Point	26	JH-10	103 51 08	02 16 44	103.852222	2.278889
Point	27	JH-11	103 35 56	02 39 10	103.598889	2.652778

Creates a summary table grouped by the active field

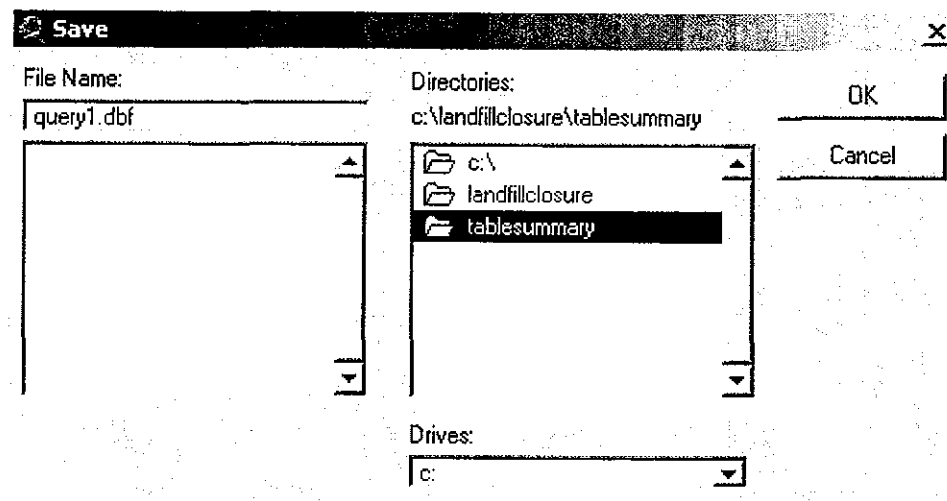
Summary Table Definition

Save As... c:\docume~1\user\locals~1\temp\sum3.dbf OK

Field: Shape Add

Summarize by: Merge Delete

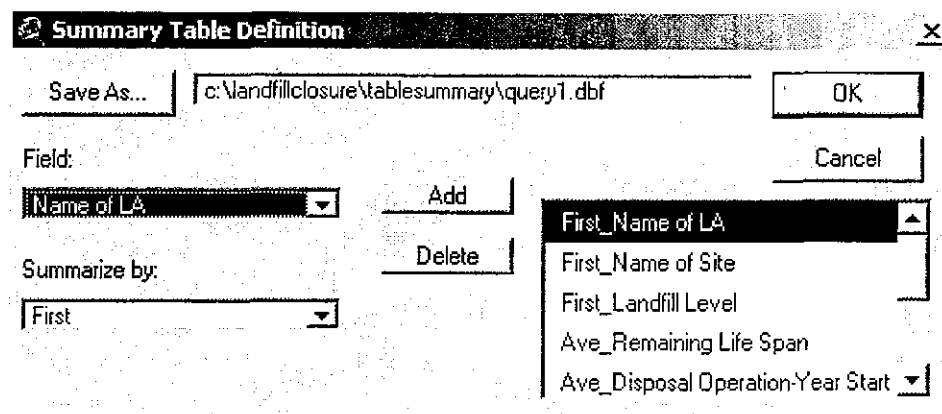
- Click **Save As** button to put the file in the proper directory. The **Save** dialog box will appear. Select the directory to put the file. Here click on **c:\landfillclosure\tablesummary**. Save the file name as **Query1.dbf**. Click **OK**.



5. Select the field name that you need to put in the summary table. Click the **Field** drop down list. Click the selection and click **Add**. If you do not want the field name in the list, select from the added list on the right side and click **Delete**. After the addition is made, click **OK**.

Items to add:

- No.
- Name of LA
- Name of Landfill Site
- Landfill Level
- Disposal Operation-Year Start
- Disposal Operation-Year End
- Area
- Environmental Risk
- Value of Land Utilisation
- Necessity of Closure Level C1
- Necessity of Closure Level C2
- Necessity of Closure Level C3
- Necessity of Closure Level C4
- Total number and Area of sites



6. The **query1.dbf** will show up on the table.

The screenshot shows the LACMIS application window. The title bar reads "Landfill Closure Management Information System(LACMIS)". Below the title bar is a menu bar with "File", "Edit", "Table", "Field", "Window", and "Help". A toolbar contains various icons for file operations and data management. Below the toolbar, it indicates "0 of 4 selected". The main window displays a table titled "query1.dbf".

No	Count	First Name of LA	First Name of Site	First Landfill Level	Yes/Dispos
SL-01	1	MP Petaling Jaya	Kelana Jaya	Level 1	
SL-02	1	MP Klang	Telok Kapas	Level 1	
SL-03	1	MP Kajang	Sungai Kenbong	Open dumping	
SL-04	1	MP Selayang	Kundang	Level 1	

3.2.2 Print A Table

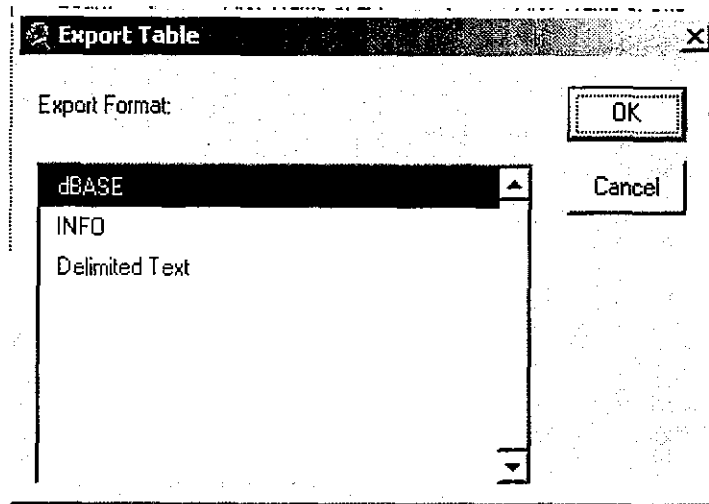
Step 5: To print a Table

1. Click **File** menu and click **Print**. Set up the printer and size of the paper before printing. You can also change the field name on the table to suit your needs.

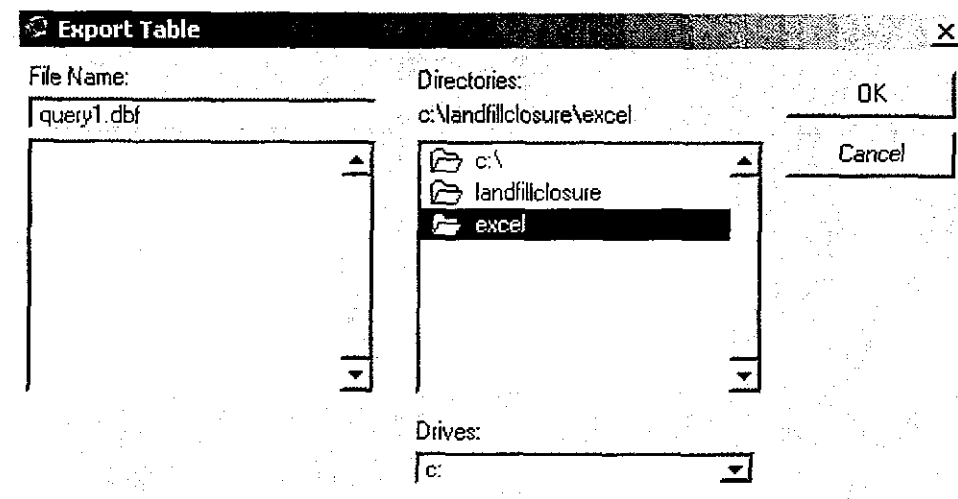
3.2.3 Export A Table

Step 6: To export a Table

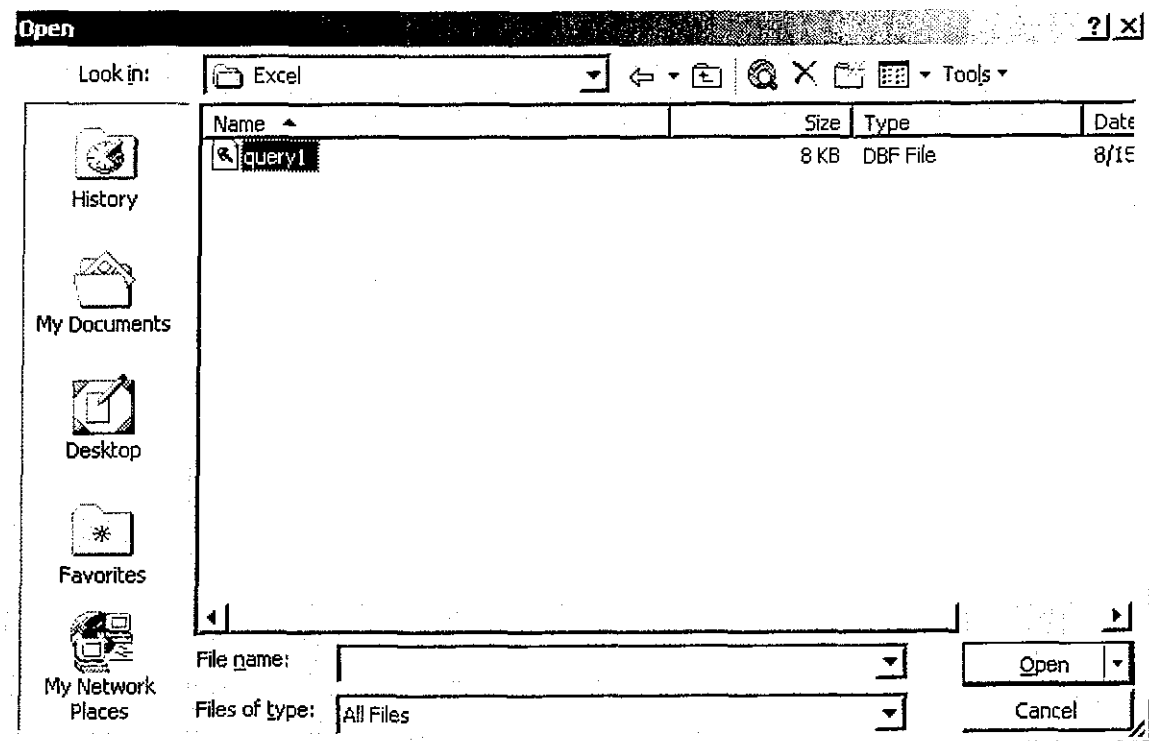
1. Click **File** menu and click **Export**. **Export Table** dialog box will appear.



2. Click **dBASE** format and click **OK**. The **Export Table** dialog box appears and click on the directory to save the file. Choose the **c:\landfillclosure\excel**. Save the file name as **Query1.dbf**. Click **OK**.



3. Open **Microsoft Excel**. Click **File** menu and click **Open**. Open the **query1.dbf** and make amendment on the cell width. You can use **Excel** function to total up the **Area** field. When you have finished, save the **Excel** file as **Query1sum.xls** in **c:\landfillclosure\excel**. You can also print the table in **Excel**.



4 UPDATING THE DATABASE

This chapter describes how to update existing information that is already in the database with new/additional information and to display them on screen. The following instructions will guide the user on matters regarding registration of an object and updating its attributes on the map.

4.1 Registering A Point on The Map

Step 1: To register a point on the map

1. To update database, go to **Information Display View**. Click **Information Display** button if you are in **Main Page** to open the **Information Display View**.
2. Click the **Draw Point** button and click it on the map. Then click **Graphics** menu and click **Size and Position**. You can enter the coordinate in Rectified Skew Orthomorphic projection for **X** and **Y** position. Then the graphic that is still in selected position will be placed to the coordinate that has been keyed in.

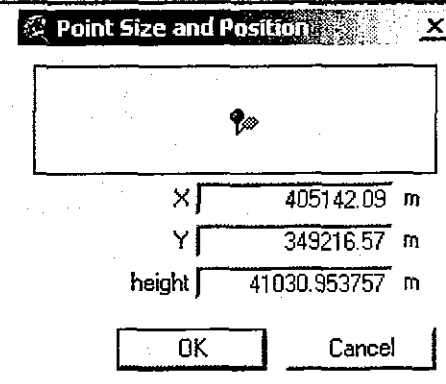
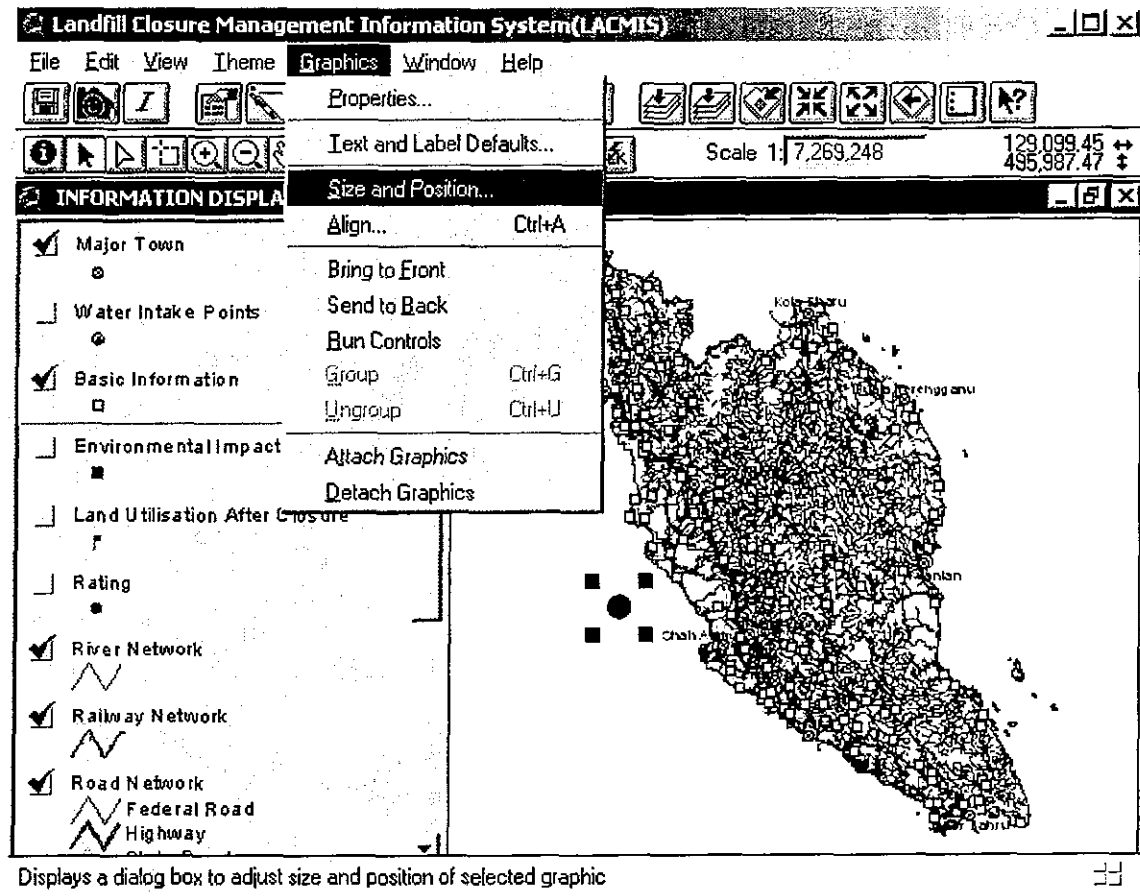
Key in the following coordinate:

X: 405142.09m

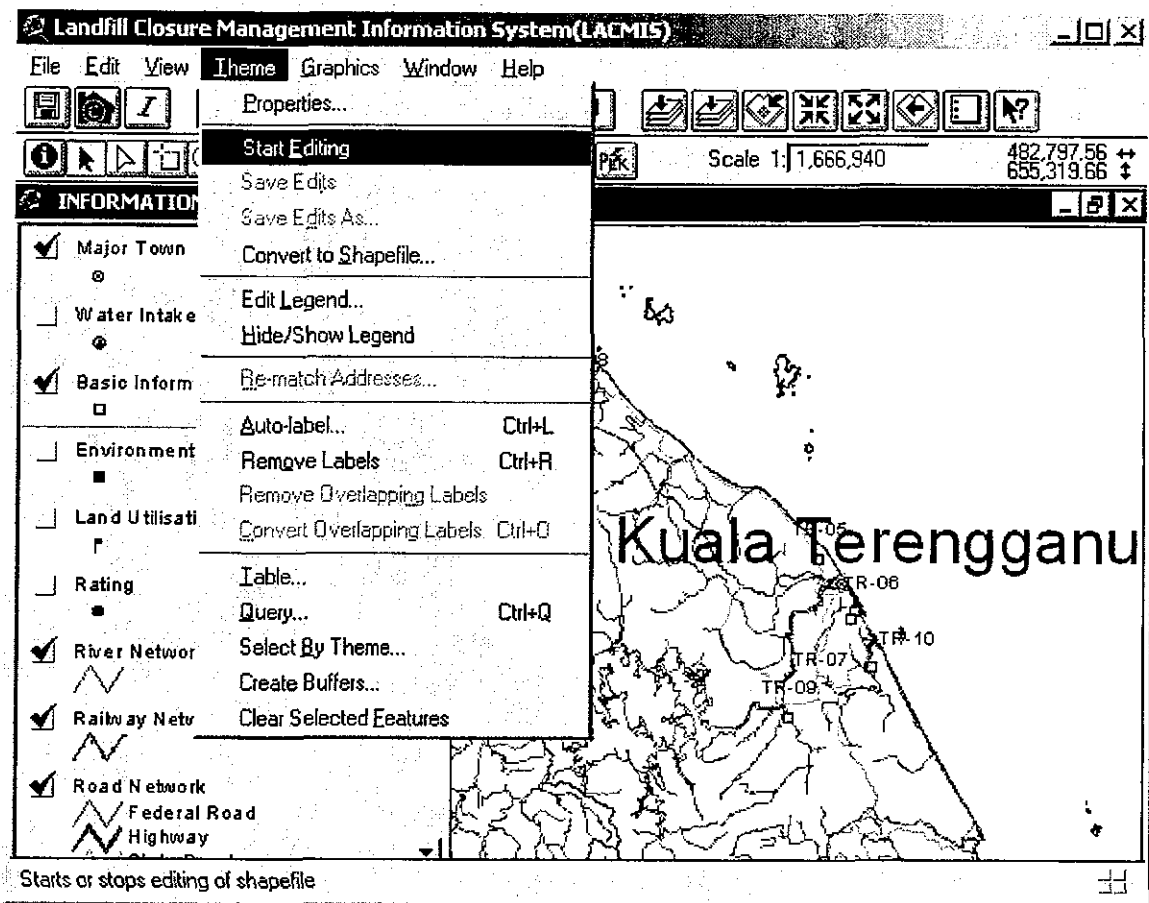
Y: 349216.57m

After keying in, follow No. 3 to No. 4. Then, delete the graphic after **Stop Editing**.

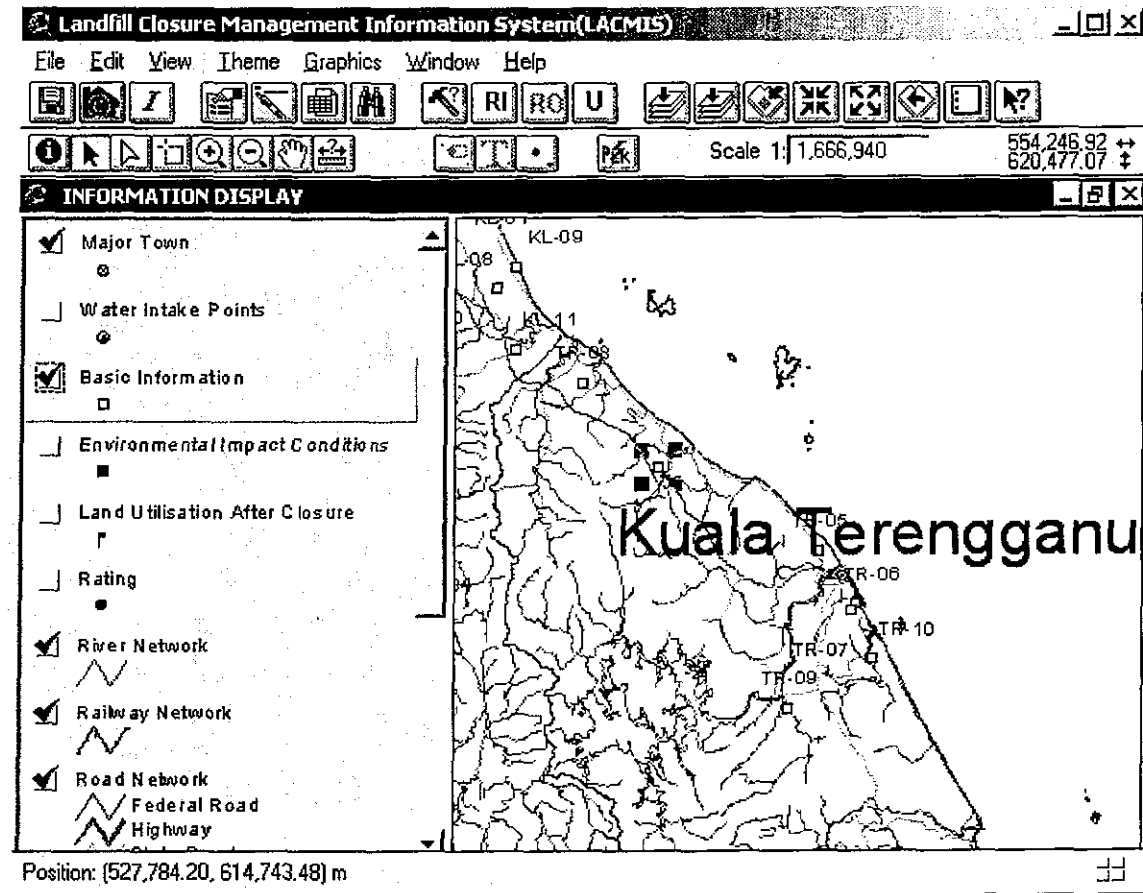
Note: If you do not have the coordinate but roughly know the position of the landfill site, skip No. 2 and go to No. 3 after No. 1. For the following procedures, explanation on how to put in the point will be shown.

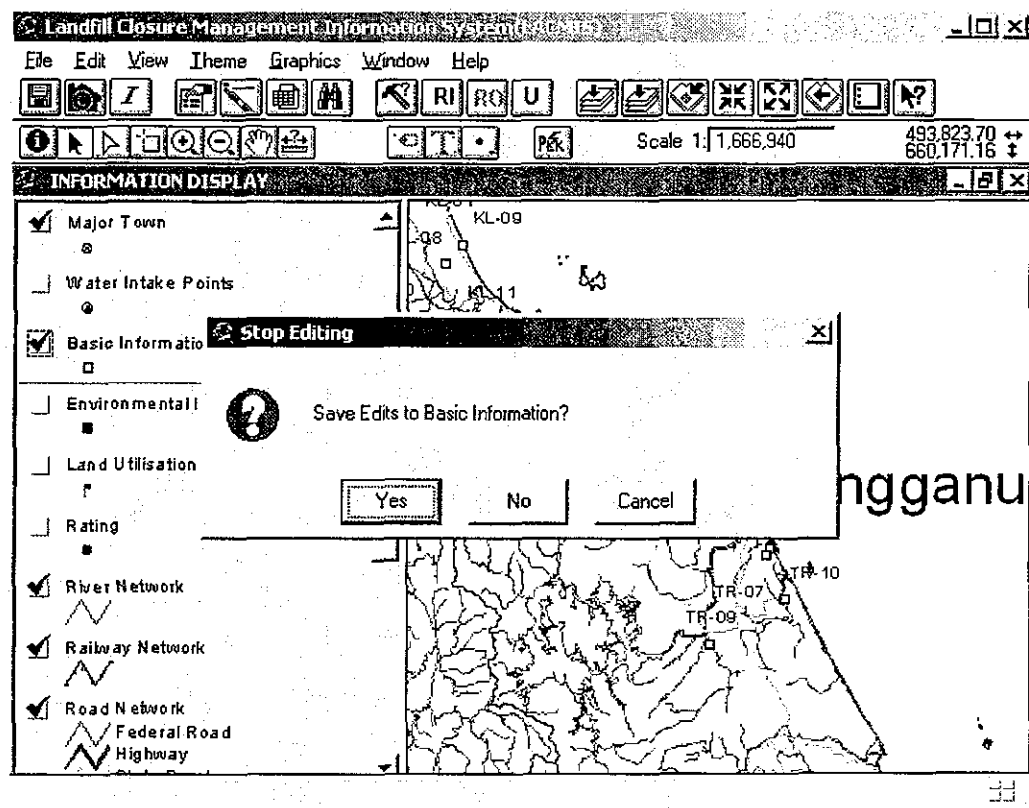
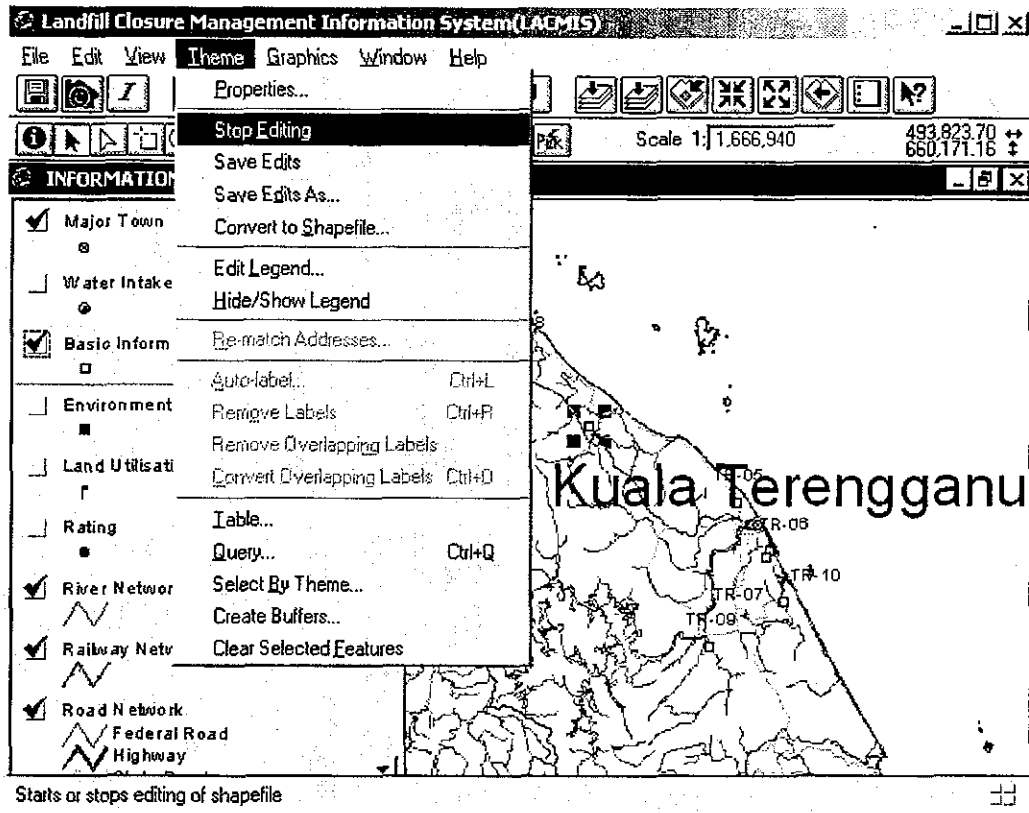



- To update a theme, click on it to activate it in the **Table of Contents**. Then click **Theme** menu and click **Start Editing** to make it editable. The theme is editable if the check box area is surrounded surrounded by a dotted line. You can zoom in to the area that you want to put in the point. For example, zoom in to Terengganu state. The landfill site that needs to be put in is located in Kg. Apek, Bandar Permaisuri, Setiu, Terengganu.

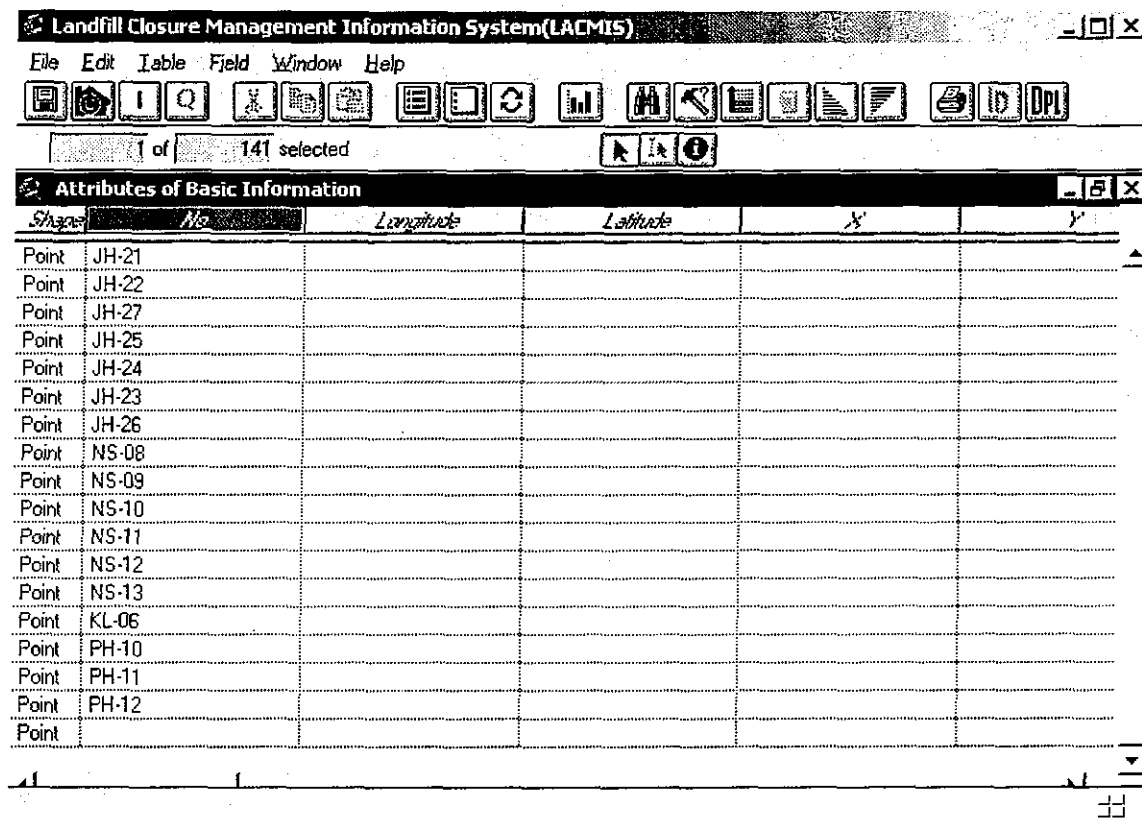


4. Click **Draw Point** button to insert a point on the map as shown in the figure below. The point is highlighted with the four corners of black dot. Then, click **Theme** menu again and click **Stop Editing** to stop editing the shapefile. The **Stop Editing** dialog box will appear and click **Yes**. The dotted line surrounding the check box will disappear. This means that the theme is ineditable.





5. After **Stop Editing**, you will notice that the point is highlighted in yellow. Click **Open Theme Table** button to see the table. Scroll down to see the row that has been generated from the point. The row is highlighted in yellow.
6. Click **Table** and click **Start Editing** to make the **Table** editable. You will notice that the style of the field name on the table has changed from *Italic* to **Normal**. To locate the latest assigned No. for that landfill site in Kg. Apek, Bandar Permaisuri, Setiu, Terengganu, sorting on the No. should be done first. Click on the field name "*No*" and then click **Sort Ascending**  button. Check on the No. that is given under the code "**TR**" which stands for Terengganu State.



Shape	No.	Longitude	Latitude	X	Y
Point	JH-21				
Point	JH-22				
Point	JH-27				
Point	JH-25				
Point	JH-24				
Point	JH-23				
Point	JH-26				
Point	NS-08				
Point	NS-09				
Point	NS-10				
Point	NS-11				
Point	NS-12				
Point	NS-13				
Point	KL-06				
Point	PH-10				
Point	PH-11				
Point	PH-12				
Point					

Landfill Closure Management Information System(LACMIS)

File Edit Table Field Window Help

1 of 141 selected

Attributes of Basic Information

Shape	No	Longitude	Latitude	X	Y
Point	SL-05				
Point	SL-06				
Point	SL-07				
Point	SL-08				
Point	SL-09				
Point	SL-10				
Point	SL-11				
Point	TR-01	103 26 02	04 12 22	103.433889	4.206111
Point	TR-02	103 26 54	04 31 37	103.448333	4.526944
Point	TR-03	103 26 43	04 31 24	103.445278	4.523333
Point	TR-04	103 24 00	04 15 42	103.400000	4.261667
Point	TR-05	103 05 28	05 22 55	103.091111	5.381944
Point	TR-06	103 10 03	05 16 01	103.167500	5.266944
Point	TR-07	103 09 44	05 15 12	103.162222	5.253333
Point	TR-08				
Point	TR-09				
Point	TR-10				
Point					

7. Key in the name of the landfill site by clicking **Edit** button. Then click once in the cell and type in as below:

No_ : TR-11
User_ID: 141


Landfill Closure Management Information System(LAC-MIS)

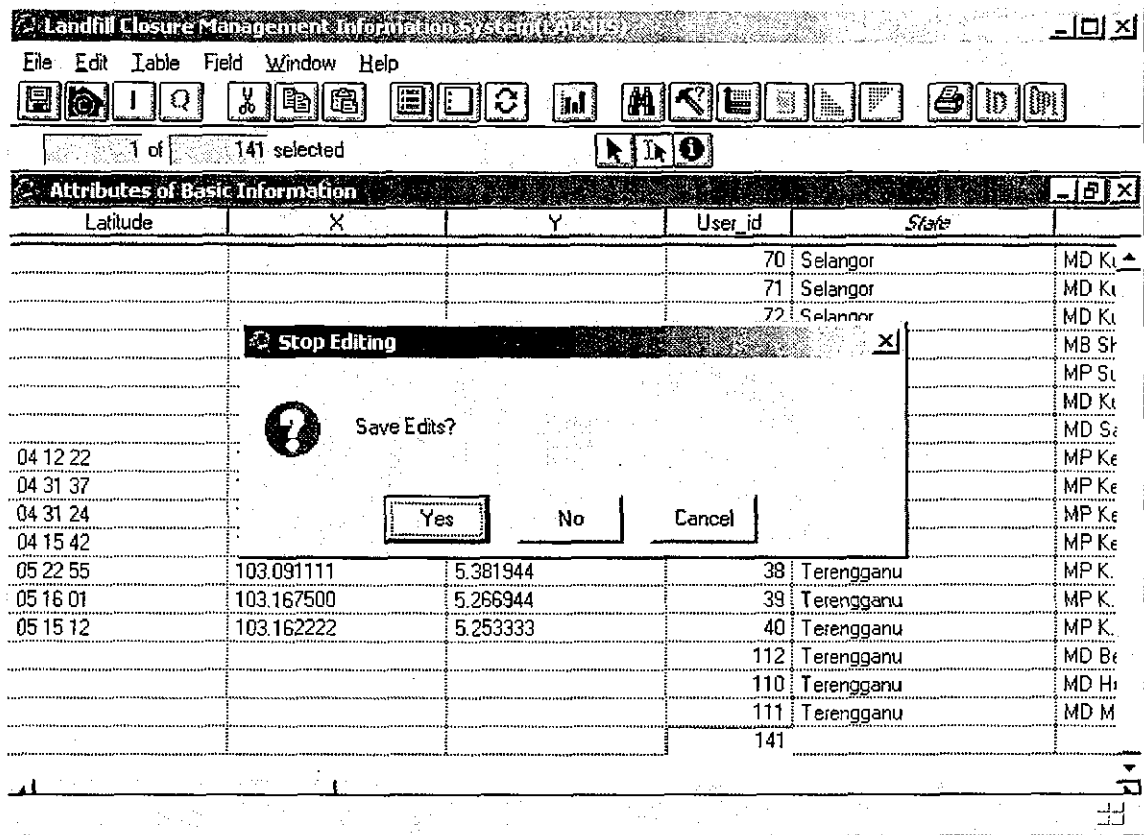
File Edit Table Field Window Help

1 of 141 selected

Attributes of Basic Information


Latitude	X	Y	User_id	State	
			70	Selangor	MD Kl
			71	Selangor	MD Kl
			72	Selangor	MD Kl
			98	Selangor	MB Sk
			99	Selangor	MP Su
			100	Selangor	MD Kl
			101	Selangor	MD Sa
04 12 22	103.433889	4.206111	34	Terengganu	MP Ke
04 31 37	103.448333	4.526944	35	Terengganu	MP Ke
04 31 24	103.445278	4.523333	36	Terengganu	MP Ke
04 15 42	103.400000	4.261667	37	Terengganu	MP Ke
05 22 55	103.091111	5.381944	38	Terengganu	MP K
05 16 01	103.167500	5.266944	39	Terengganu	MP K
05 15 12	103.162222	5.253333	40	Terengganu	MP K
			112	Terengganu	MD Be
			110	Terengganu	MD Hi
			111	Terengganu	MD M
			141		

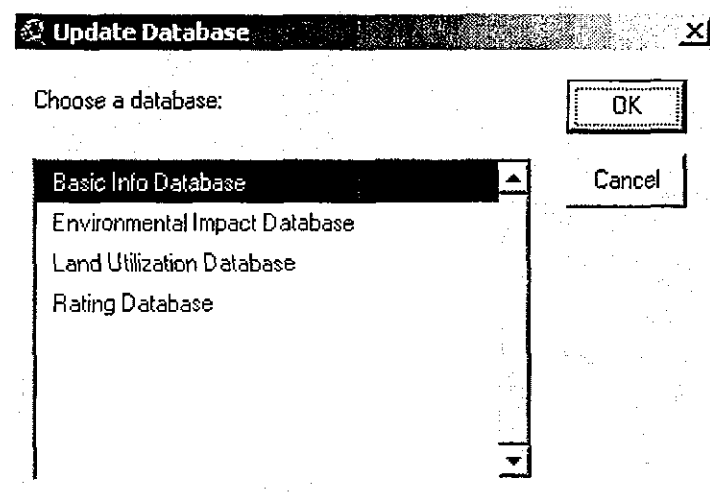
- After keying the information, click **Table** menu and click **Stop Editing**. The **Stop Editing** dialog box will appear and click **Yes**. Once you have finished editing, go back to the view again by clicking on the **Back to Information Display**  button.



4.2 Update Database Files

Step 2: To update database in Files

1. Click **Update Database**  button. The **Update Database** dialog box will appear with the list of database from which you can choose to update. Select the **Basic Info Database** and click **OK**. The table on the **Basic Information** database will be shown.



2. Click **Table** menu and click **Start Editing**. After **Start Editing**, you will notice that the style of the field name is changed from Italic to Normal. This database is in dbf format and a row needs to be added in.

The screenshot shows the LACMIS software interface. The 'Table' menu is open, and the 'Start Editing' option is selected. The main window displays a table with the following data:

No	Name of LA	Name of Site
	MP Petaling Jaya	Kelana Jaya
	MP Klang	Telok Kapas
	MP Kajang	Sungai Kenbong
	MP Selayang	Kundang
	DB Kuala Lumpur	Taman Beringin
	MP Nilai	Pajam
	MP Nilai	Kuala Sawah
	MP Seremban	Sikamat
	MP Port Dickson	Quarters MPPD
	MP Port Dickson	Bukit Palung
	MP Port Dickson	Pengkalan Kempas
	MP Port Dickson	Sua Betong
	MD Alor Gajah	Air Molek
	MD Alor Gajah	Pulau Sebang
	MB Melaka	Krubong
	MB Melaka	Krubong A*
	MB Melaka	Kota Laksamana
	MD Jasin	Lipat Kajang
	MD Jasin	Batang Melaka*
	MD Jasin	Kuala Bera*

Starts or stops editing of table values

- Click **Edit** menu and click **Add Records**. A row at the bottom of the **Table** is inserted.

Landfill Closure Management Information System (LACMIS)

File Edit Table Field Window Help

Undo Edit Ctrl+Z
 Redo Edit Ctrl+Y
 Add Field...
Add Record Ctrl+A
 Delete Field
 Delete Records
 Select All
 Select None
 Switch Selection

No	Name of LA	Name of Site
-01	MP Petaling Jaya	Kelana Jaya
-02	MP Klang	Telok Kapas
-03	MP Kajang	Sungai Kenbong
-04	MP Selayang	Kundang
-01	DB Kuala Lumpur	Taman Beringin
-01	MP Nilai	Pajam
-02	MP Nilai	Kuala Sawah
-03	MP Seremban	Sikamat
-04	MP Port Dickson	Quarters MPPD
NS-05	MP Port Dickson	Bukit Palung
NS-06	MP Port Dickson	Pengkalan Kempas
NS-07	MP Port Dickson	Sua Betong
ML-01	MD Alor Gajah	Air Molek
ML-02	MD Alor Gajah	Pulau Sebang
ML-03	MB Melaka	Krubong
ML-04	MB Melaka	Krubong A*
ML-05	MB Melaka	Kota Laksamana
ML-06	MD Jasin	Lipat Kajang
ML-07	MD Jasin	Batang Melaka*

Adds a new record at the bottom of the table

Landfill Closure Management Information System (LACMIS)

File Edit Table Field Window Help

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Basic Info Database

State	No.	Name of LA	Name of Site
Kelantan	KL-08	MD Bachok	Kg. Sungai Gali, Telong
Kelantan	KL-09	MD Bachok	Kg. Hujung Repek, Repek
Perak	PR-21	MD Gerik	Tapak Pelupusan Sampah MI
Perak	PR-22	MD Gerik	Tapak Pelupusan Sampah MI
Kelantan	KL-10	MD Machang	Air Berlaga
Kelantan	KL-11	MD Pasir Puteh	Tapak Pelupusan Bukit Gedo
Kelantan	KL-12	MD Tumpal	Tapak Pelupusan Sampah Kc
N.Sembilan	NS-08	MP Port Dickson	Tapak Pelupusan Sampah Bt.
N.Sembilan	NS-09	MD Jelebu	Tapak Pelupusan Sampah Pe
N.Sembilan	NS-10	MD Jelebu	Tapak Pelupusan Sampah Sc
N.Sembilan	NS-11	MD Jempol	Tapak Pelupusan Sampah MI
N.Sembilan	NS-12	MD Jempol	Tapak Pelupusan Sampah MI
N.Sembilan	NS-13	MD Rembau	Tapak Pelupusan Sampah Ch
Kelantan	KL-13	MD Tanah Merah	KG. Cat Rimau
Perak	PR-23	MP Manjung	Tapak Pelupusan Sampah Sc
Perak	PR-24	MP Manjung	Tapak Pelupusan Teluk Cemf
Perak	PR-25	MP Manjung	Tapak Pelupusan Sampah Pe
Perak	PR-26	MP Manjung	Tapak Pelupusan Sampah Be

5. Type in the information as shown below:

- State: Terengganu
- No: TR-11
- Name of LA: MD Setiu
- Name of Site: Tapak Pelupusan MDS
- Address of Site: Kg. Apek, Bandar Permaisuri, Setiu
- Layout site attached:
- Remarks on Layout:
- Category: Operation
- Remaining Life Span: 4
- Managed by: Local Authority
- Remarks on "Others":
- Land Ownership: Government
- Remarks on Ownership:
- Gazetted: Yes
- Disposal Operation-Year Start: 2000
- Disposal Operation-Year End: 2007
- Area (ha): 5.4
- Waste Disposed Daily (t/d): 16
- Reasons for Closure:
- Remarks on Closure:
- Remarks on Basic Information:

- When you have finished typing it in, click **Table** menu and click **Stop Editing**. The **Stop Editing** dialog box will appear and click **Yes**. Notice that the style of the field name on the **Table** changes back to Italic.

The screenshot shows the LACMIS application window with the 'Table' menu open. The menu options include 'Properties...', 'Chart...', 'Stop Editing', 'Save Edits', 'Save Edits As...', 'Find...', 'Query...', 'Promote', 'Join', 'Remove All Joins', 'Link', 'Remove All Links', and 'Refresh'. The main table contains the following data:

No	Name of LA	Name of Site
	MD Bachok	Kg. Hujung Repek, Repek
	MD Gerik	Tapak Pelupusan Sampah MD Jalar
	MD Gerik	Tapak Pelupusan Sampah MD Jalar
	MD Machang	Air Berlaga
	MD Pasir Puteh	Tapak Pelupusan Bukit Gedong
	MD Tumpat	Tapak Pelupusan Sampah Kol
	MP Port Dickson	Tapak Pelupusan Sampah Bt. 1 Bt. 2
	MD Jelebu	Tapak Pelupusan Sampah Per
	MD Jelebu	Tapak Pelupusan Sampah Sg
	MD Jempol	Tapak Pelupusan Sampah MD Jalar
	MD Jempol	Tapak Pelupusan Sampah MD Jalar
	MD Rembau	Tapak Pelupusan Sampah Cha Chen
	MD Tanah Merah	KG. Cat Rimau
	MP Manjung	Tapak Pelupusan Sampah Sur
	MP Manjung	Tapak Pelupusan Teluk Cemp
	MP Manjung	Tapak Pelupusan Sampah Pa
	MP Manjung	Tapak Pelupusan Sampah Ber
	MD Setiu	Tapak Pelupusan MDS

The status bar at the bottom of the window reads: "Starts or stops editing of table values".



Landfill Closure Management Information System (LACMIS)

File Edit Table Field Window Help

1 of 141 selected

Basic Info Database

State	No	Name of LA	Name of Site
Kelantan	KL-09	MD Bachok	Kg. Hujung Repek, Repek
Perak	PR-21	MD Gerik	Tapak Pelupusan Sampah MD Jalar
Perak	PR-22	MD Gerik	Tapak Pelupusan Sampah MD Jalar
Kelantan	KL-10	MD Machang	Air Beilaga
Kelantan	KL-11	MD Pasir Puteh	Tapak Pelupusan Bukit Gedor
Kelantan	KL-12	MD Tumpat	Tapak Pelupusan Sampah Kol
N.Sembilan	NS-08	MP Port Dickson	Tapak Pelupusan Sampah Bt. 2
N.Sembilan	NS-09	MD Jelebu	Tapak Pelupusan Sampah Pel
N.Sembilan	NS-10	MD Jelebu	Tapak Pelupusan Sampah Sg
N.Sembilan	NS-11	MD Jempol	Tapak Pelupusan Sampah MD Jalar
N.Sembilan	NS-12	MD Jempol	Tapak Pelupusan Sampah MD Jalar
N.Sembilan	NS-13	MD Rembau	Tapak Pelupusan Sampah Che
Kelantan	KL-13	MD Tanah Merah	KG. Cat Rinau
Perak	PR-23	MP Manjung	Tapak Pelupusan Sampah Sunc
Perak	PR-24	MP Manjung	Tapak Pelupusan Teluk Cempi
Perak	PR-25	MP Manjung	Tapak Pelupusan Sampah Pai
Perak	PR-26	MP Manjung	Tapak Pelupusan Sampah Bef
Terengganu	TR-11	MD Setiu	Tapak Pelupusan MDS

6. To check whether the **Basic Information** is linked to the landfill site point, click **Back to Information Display**  button. Zoom in to the point highlighted in yellow. Use **Identify**  tool to click on the highlighted feature. The **Identify Results** dialog box will show the attributes of the feature.

Identify Results		
1: Basic Information - TR-11	Shape	Point
	No	TR-11
	Longitude	
	Latitude	
	X	
	Y	
	User id	141
	State	Terengganu
	Name of LA	MD Setiu
	Name of Site	Tapak Pelupusan MDS
	Address of Site	Kg. Apek, Bandar Permaisuri, Setiu
	Layout site attached	
	Remarks on Layout	
	Category	Operation
	Remaining Life Span	4.0
	Managed by	Local Authority
	Remarks of "Others"	
	Land Ownership	Government
	Remarks on Ownership	
	Gazetted	Yes
	Disposal Operation-Year Start	2000
	Disposal Operation-Year End	2007
	Area (ha)	5.40
	Waste Disposed Daily-T/d	16.00
	Reasons for Closure	
	Remarks on Closure	
	Remarks	


Clear Clear All

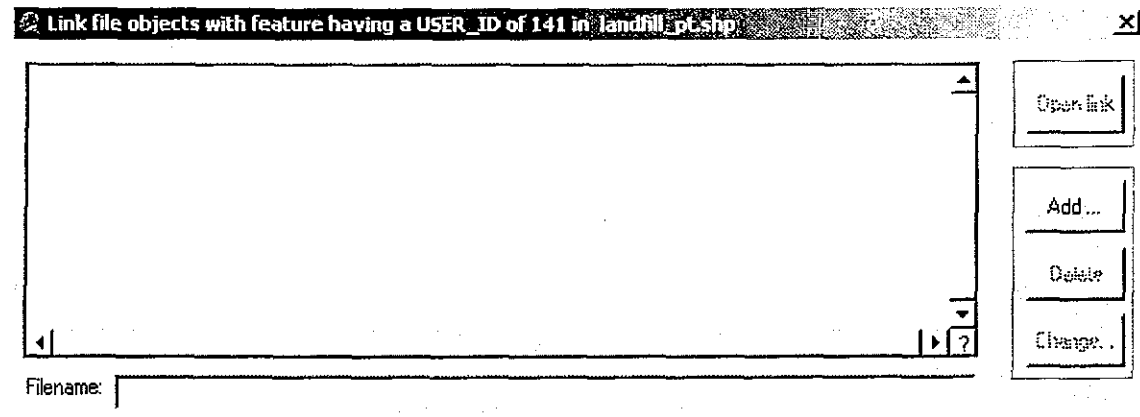
- The whole database can also be updated. This is done by opening the dbf format in the directory of **c:\landfillclosure**. The dbf file can be opened in **Mircosoft Excel** for amendment. However, note that the field name of the dbf file cannot be deleted or the character changes as the charts in LACMIS cannot detect it. The updated file must be saved in dbf format again with the same name as the old file.

4.3 Update Images or Photographs

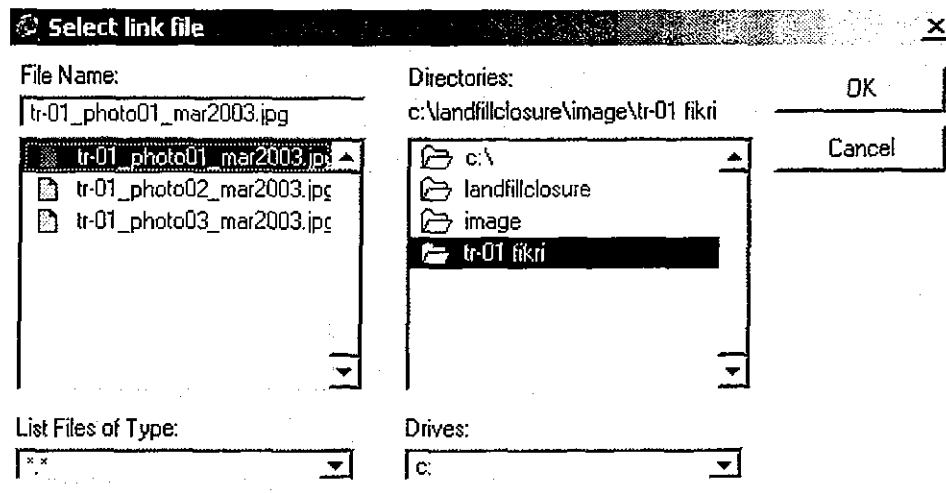
Images or photographs can be put in the directory that will be used for linking purposes. In this application, image folder and photo folder are created in **c:\landfillclosure** directory. New images and photographs can be put into appropriate folder for linking. To overwrite the old images or photographs in the folder, name of the images and photographs must be the same. This will automatically link the path name to the old path with the same name.

Step 3: To update image or photograph

- If you are not already on the **Information Display View**, go to **Information Display View**. Click **Power Link**  button.
- Click on the highlighted landfill point that has just been created. The **Link** dialog box appears.



3. Click **Add...** button to add in the images or photographs that you need to attach to the point. A **Select link file** dialog box will appear. Select the path where the photograph was located. In this example, the path is `c:\landfillclosure\image\tr-01 fikri\tr-01_photo01_mar2003.jpg`. Click **OK**.



4. The **Link file objects** dialog box appears for you to key in the description that you want to show in the list of the **Link** dialog box. Key in the information of the photo as shown below:

TR-11_Photo01_March2003

Then click **OK**.

5. You can add in the photographs by repeating *No. 3 to No. 4*. When you have finished adding in the photographs, you can view them by clicking the **Open Link** button after selecting the photographs that you want to view. Close the window when you do not want to view the photographs anymore.

