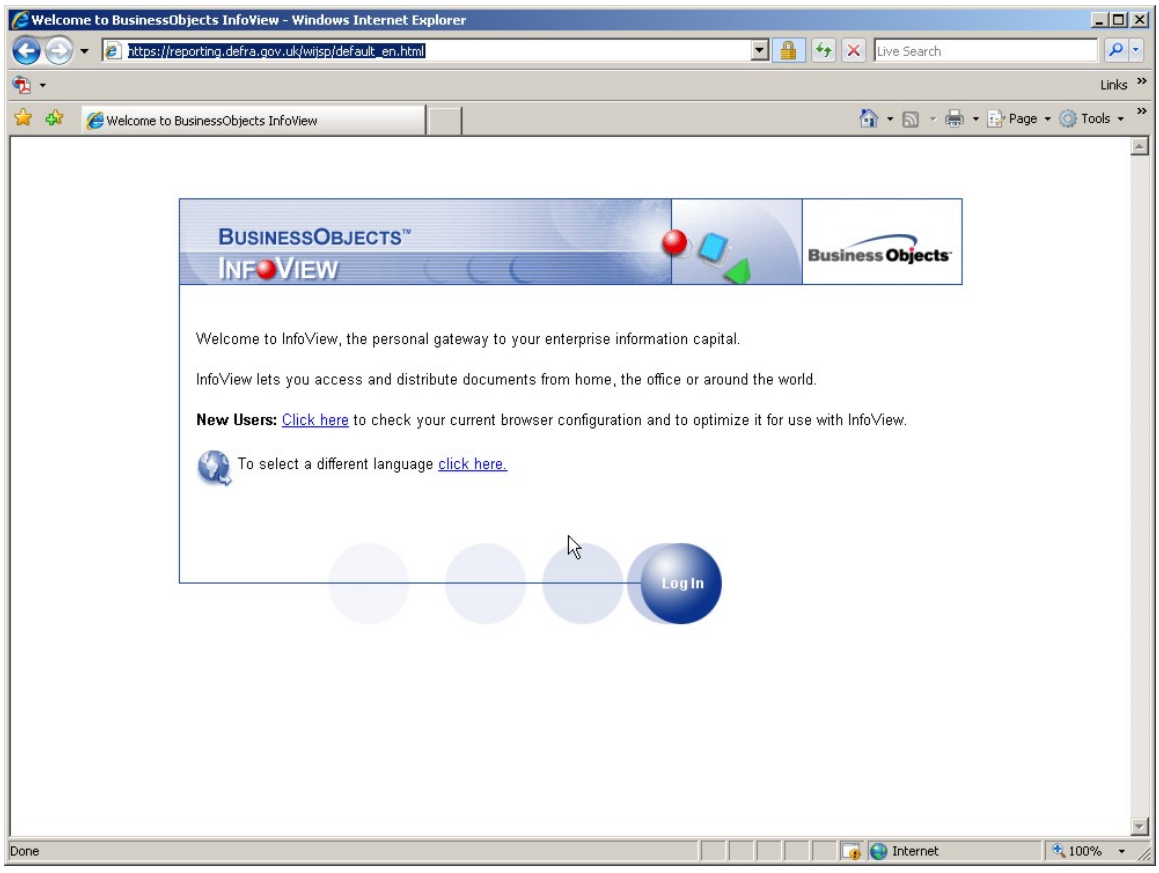
BUSINESS OBJECTS FOR MERMAN

16 – 17 OCTOBER 2007



WORSKHOP HOSTED AND PRESENTED BY BODC

Mark Charlesworth & Corallie Hunt

CONTENTS

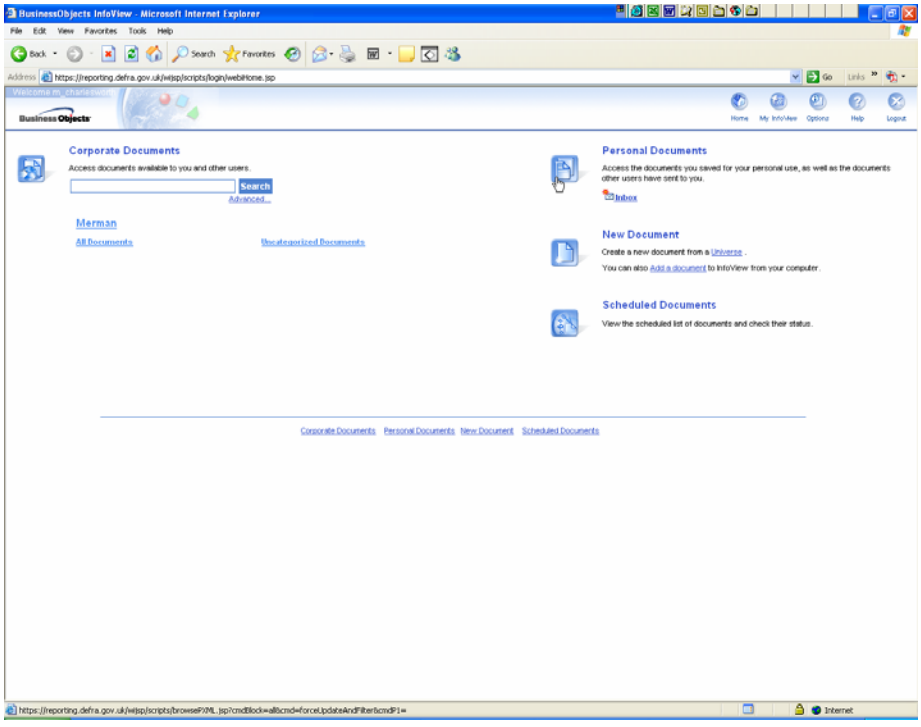
This manual follows on from the Power Point Presentation given at the start of the Workshop

1.0 Overview of Business Objects Homepage

1.1 What is a BO document?

A document is the results (report) of a query. When you save a document in BO you save both the query and the report (results).

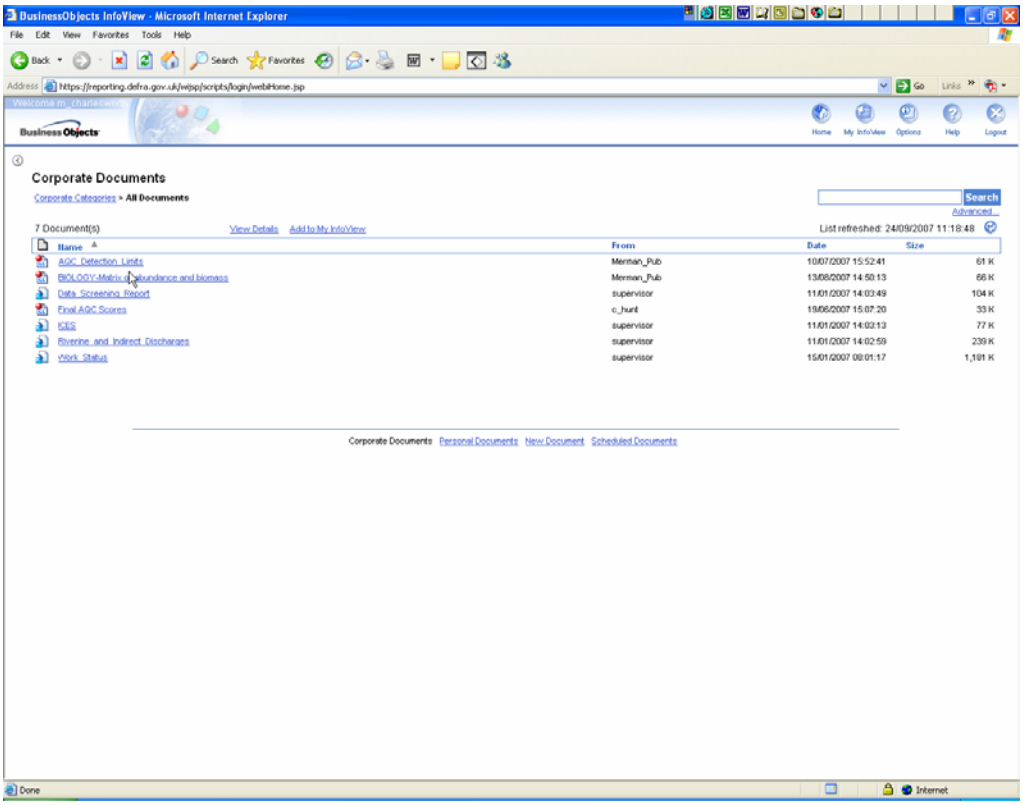
- Corporate Documents – documents of use to all MERMAN Users
- Personal Documents – documents for individuals
- New Documents – prepare new queries
- Universe – for building custom queries



2.0 Corporate Documents

2.1 Running Corporate Documents

1. Select ‘All Documents’ or ‘Corporate Documents’ and a list of the available documents are shown:

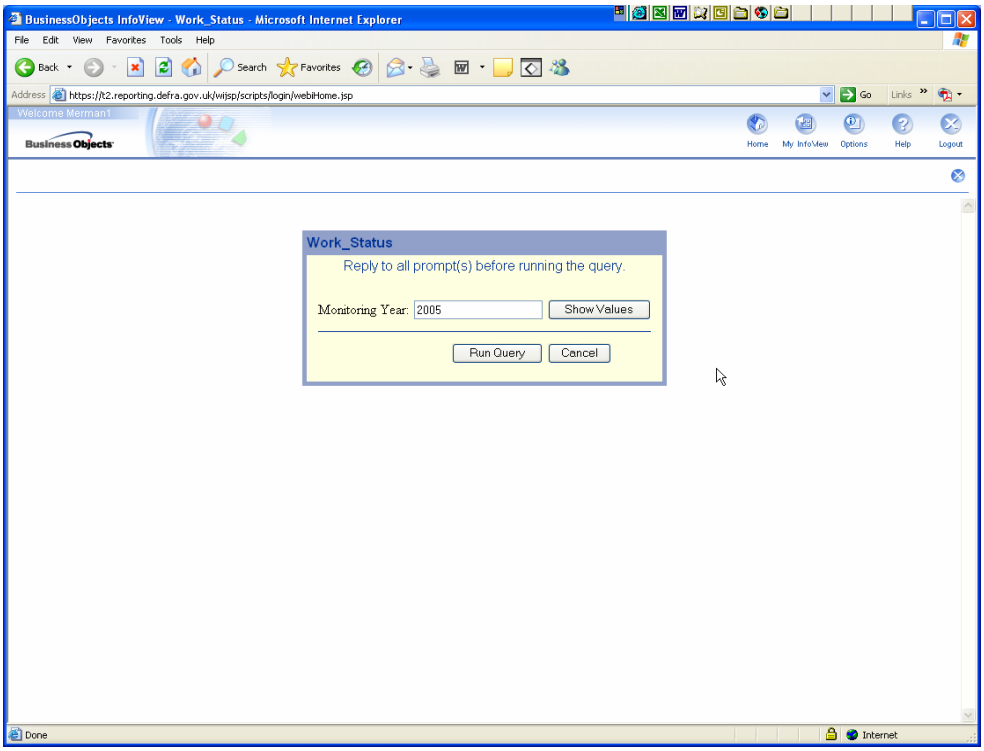


2. Click a document to open it. Depending on which document you select you are then prompted to select some or all categories. If you know the value you may type in directly, or alternatively click ‘show values’ and select.
3. Then click on ‘Run Query’ and the report will return the results. The results are those that exist in the database at the time of running the report.

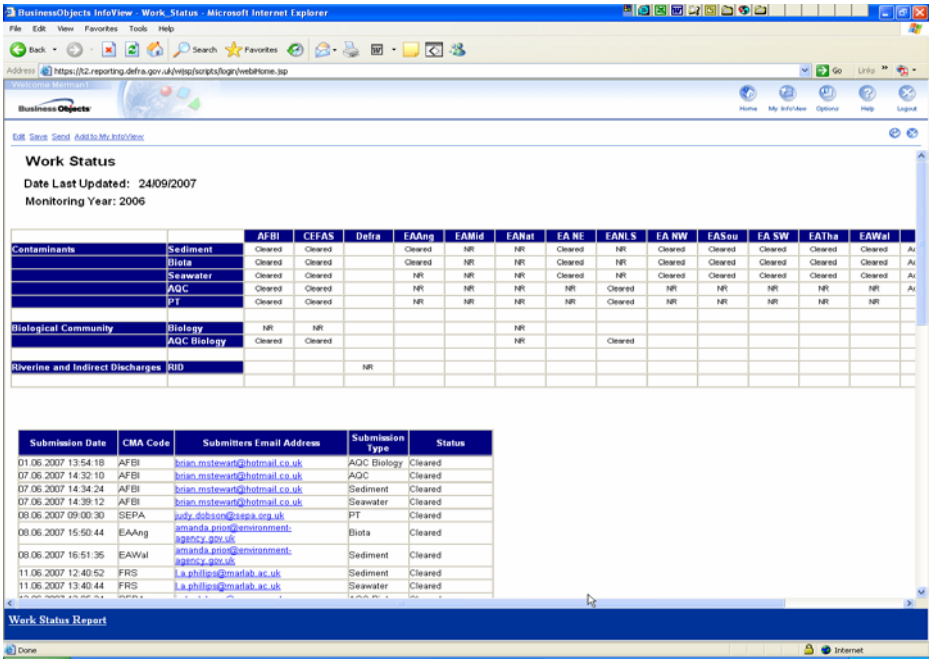
2.2 Work Status Report

- The work status report shows the status of submissions for a specific year.

1. Select Year of Interest and select ‘Run Query’



2. The submissions for that year by CMA and Data Type are shown. ‘Accepted’ means that the file has been loaded, once the file has been checked and unheld it then becomes ‘cleared’.

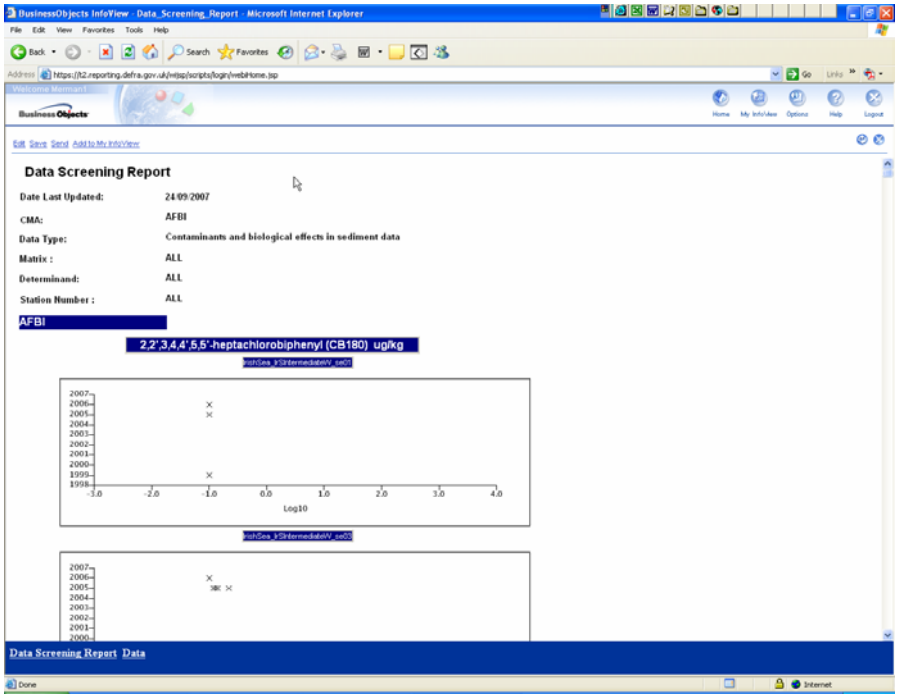


3. To run a report again using different criteria select the refresh button in the top right of the report.
4. To close the report, click on the X in the top-right hand corner.

2.3 Data Screening Report

- Designed to show results on a log scale for each determinand across all years so that any outliers may be easily identified, particularly incorrect use of units.

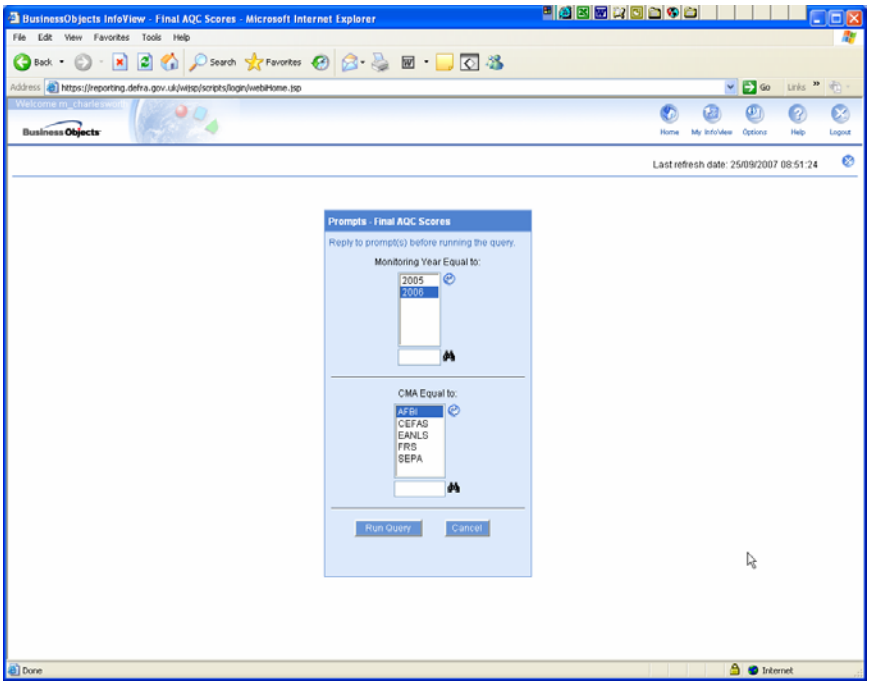
1. Select some or all of the fields CMA, Data Type, Matrix, Determinand Code and Station Number.
2. The results are grouped by determinands for each station and show years on the x-axis and log results on the y axis. If only one years data exists the x-axis defaults to 0 – 2500 years which may confuse at first!



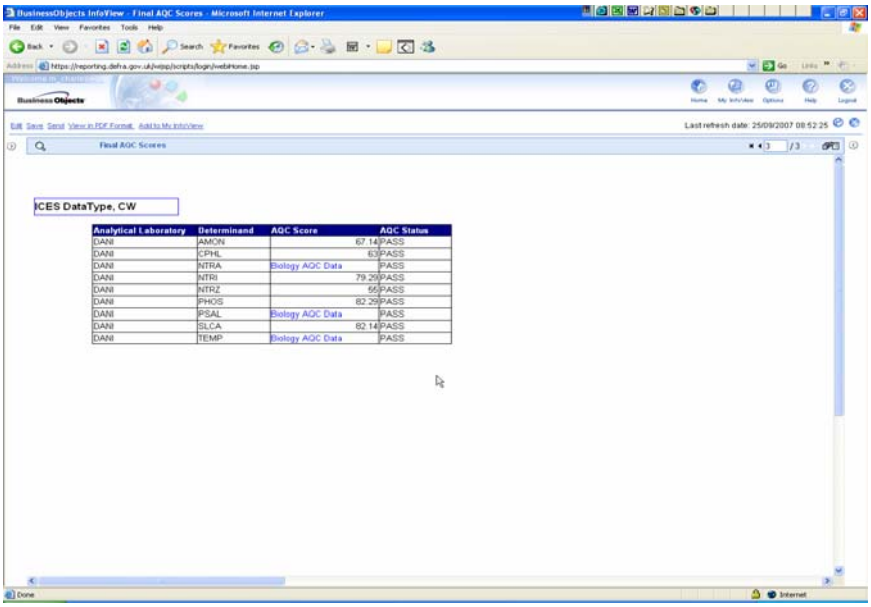
2.4 Final AQC Scores

- The Final AQC Scores shows the AQC results for each determinand that has AQC information.
- The document was created by Corallie specifically so that a Responsible Officer could (and should) check the AQC status of each determinand at the end of a submission round before the monitoring results are cleared to be passed to ICES.

1. Select the 'Final AQC Scores' from Corporate Documents and choose the monitoring year and CMA of interest.
2. Click on the refresh arrows to get updated lists of all the years.
3. Run query.

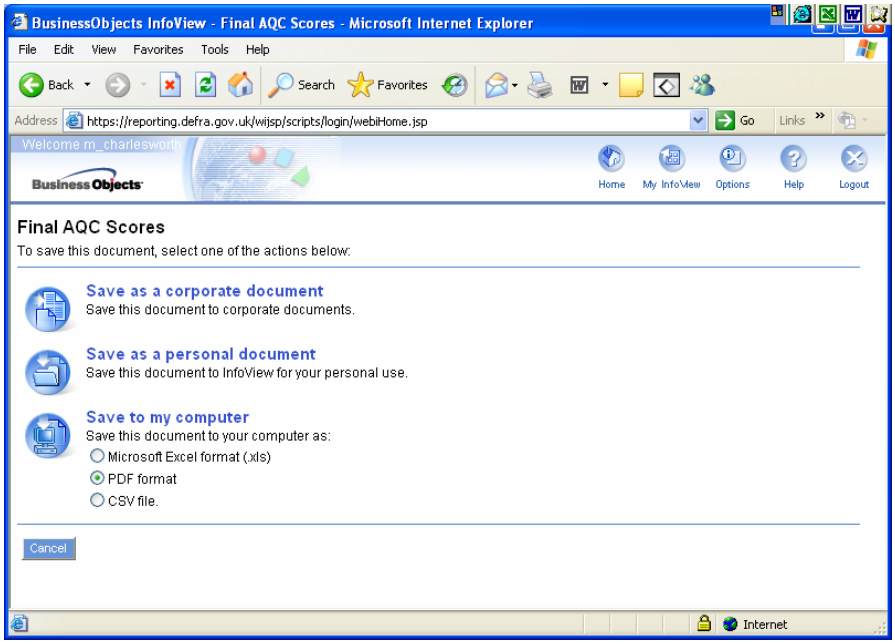


4. The results are shown on 3 pages with a new table for each data type.
5. Use the arrows on the right of the blue shaded bar to move between pages.
6. If the determinand has been automatically passed using the biology AQC spreadsheet then this is highlighted.

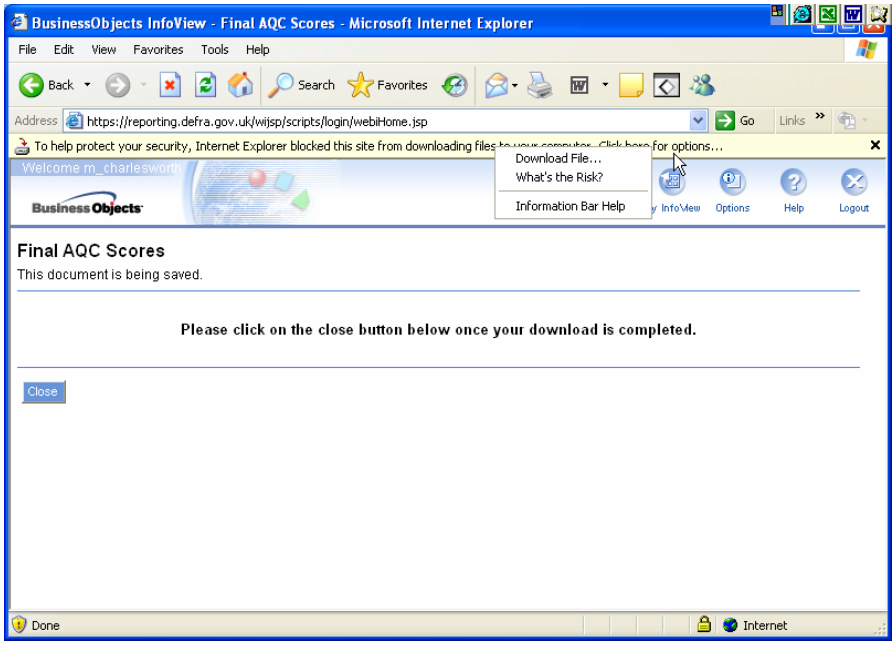


2.5 Saving

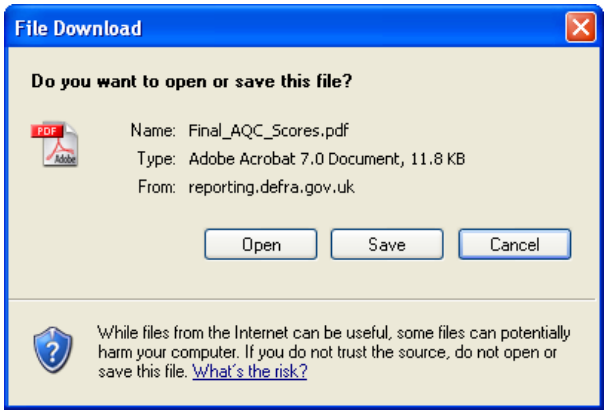
- There are 3 options for saving
- The report may be saved to any PC as a pdf, excel, .csv file or it may be saved as a personal document in Business Objects.
- If you save it to your PC it is just saved as the report (the results of a query).



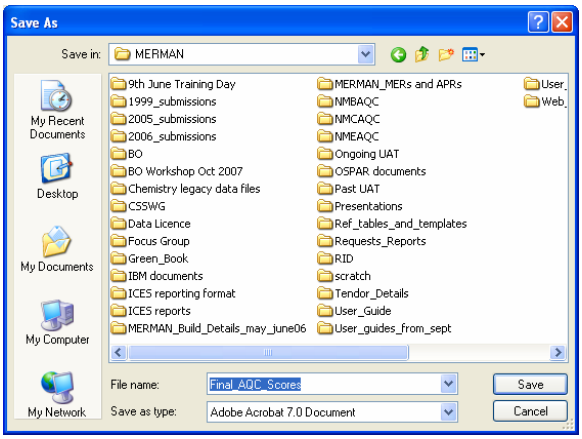
1. Open the Final AQC Scores document and select your own CMA and 2006 for the monitoring year.
2. Click save, select the pdf format, and the select '**Save to my computer**'.
3. Open a new folder specifically for saving reports for this workshop.
4. Depending on security settings for internet explorer you may get a cream bar at the top of the page saving '**To help protect your security, internet explorer……**'.
5. If you do get the above message, right-click on the bar and select download file.
6. You will return to the screen above where you will have to select PDF format and **'Save to my Computer'** again.



7. You will then be asked to save or open.



8. If you select save, navigate to where you wish to save, name appropriately and click save.

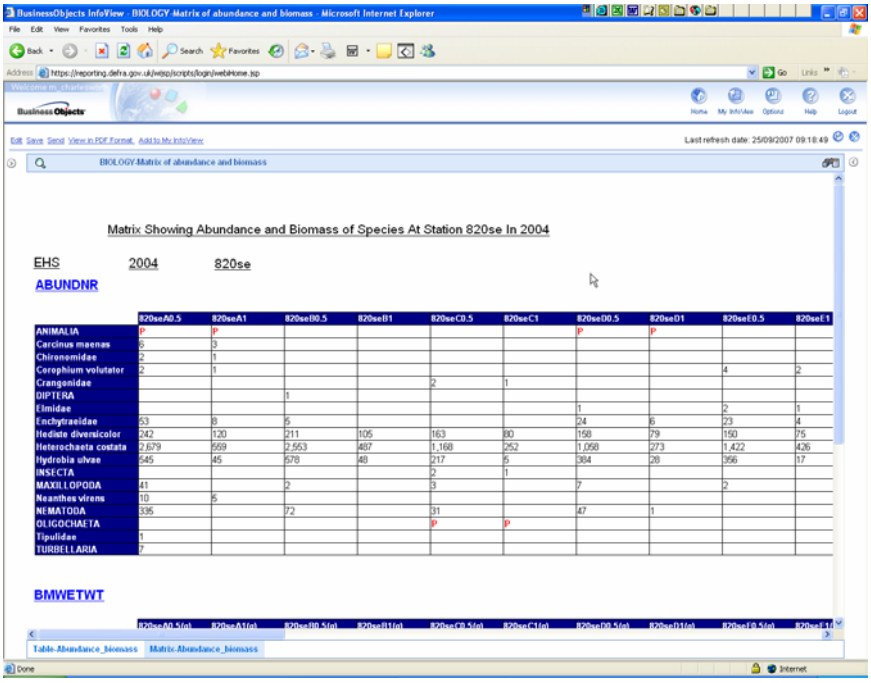


9. Once the download is complete select close.

2.6 Biology Abundance Matrix

- This document has been designed by Corallie to show the results of benthic invertebrates at a single station in a single year in the matrix format of samples as columns and species as rows.

1. Navigate to corporate documents and open the 'Biology Abundance Matrix' document.
2. Click on the refresh arrows to get the updated station names.
3. Choose a year and station and run. (e.g. 2001 and Anglia Medway Se01)
4. You are presented with a report that has two tabs.
5. The first tab (sheet) shows the abundance and biomass for each species across all samples for that station, the second tab (sheet) shows the matrix.



6. Save this report as an **excel** file to your PC.
7. Open the excel file and take a look at the two sheets in the file.

2.7 EXERCISE: Corporate Documents

Try running the other corporate documents in your own time.

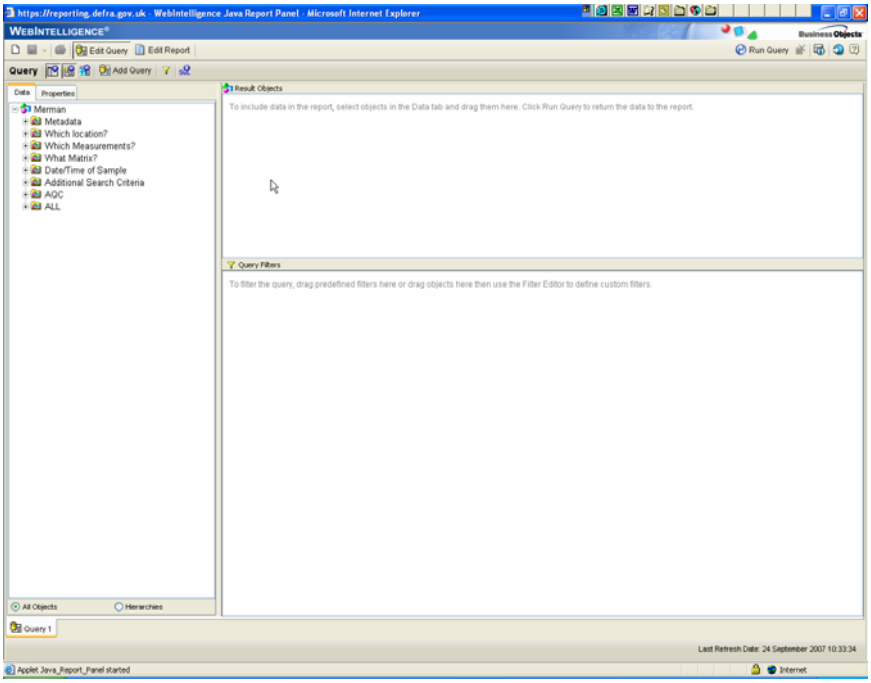
3.0 The Universe

3.1 Overview

- The Universe is a way of getting from the complex MERMAN data tables to a more meaningful way of querying and extracting data.
- The Universe is selected from the BO homepage and it will open a new window 'Web Intelligence' that requires Java applets to be installed the first time of use.
- It has a page which shows the query '**Edit Query'** and a page that shows the results of that query '**Edit Report'**. The Edit Query allows you to build your query which may be run by selecting '**Run Query'**.

- The left hand pane of the Edit Query screen shows the fields that may be chosen to be used in queries which are broadly split into categories:
    1. Location
    2. Measurements (determinands)
    3. Matrix (what the determinand was measured in)
    4. Date/Time of sample
    5. All other search criteria
    6. AQC

- Clicking on the + opens up each category.



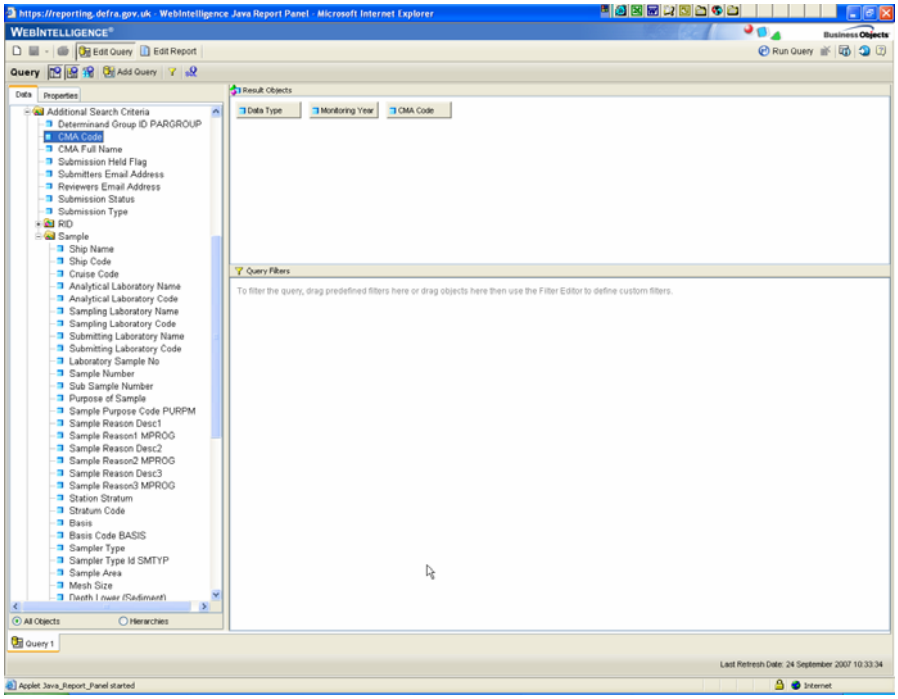
- The upper right hand pane (**Objects Pane**) shows the fields (e.g. determinand code, CMA etc) that you wish to be included in the query.
- The lower right hand pane (**Filter Pane**) allows you to restrict queries by specific codes within a field (e.g. Pb, CEFAS).

3.2 Starting a Simple Query

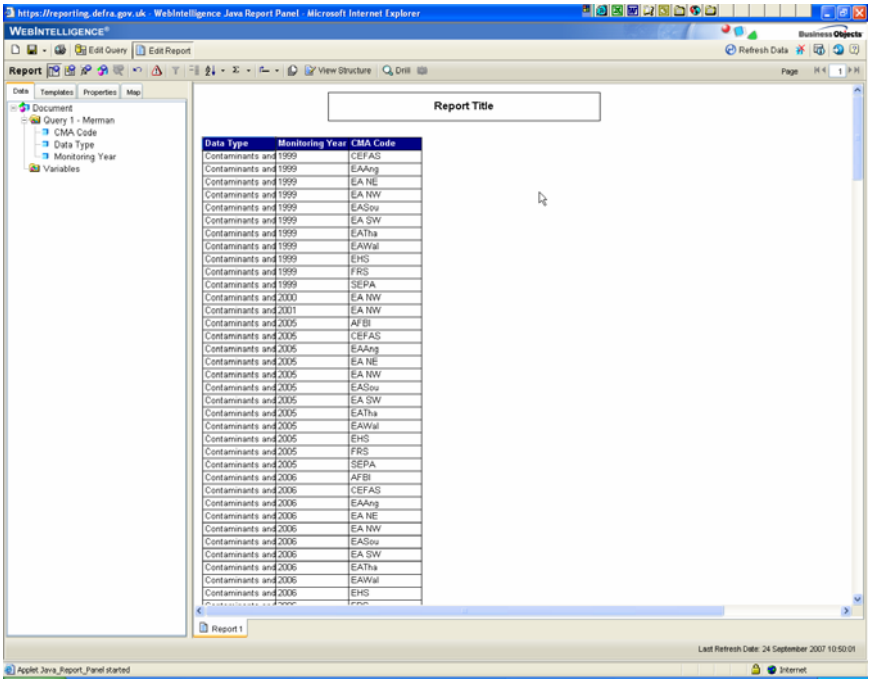
1. To add an object from the left hand pane to the objects or filter panes, click and drag or double click.
2. To remove an object, click on it and hit delete.

3.3 Running a simple query

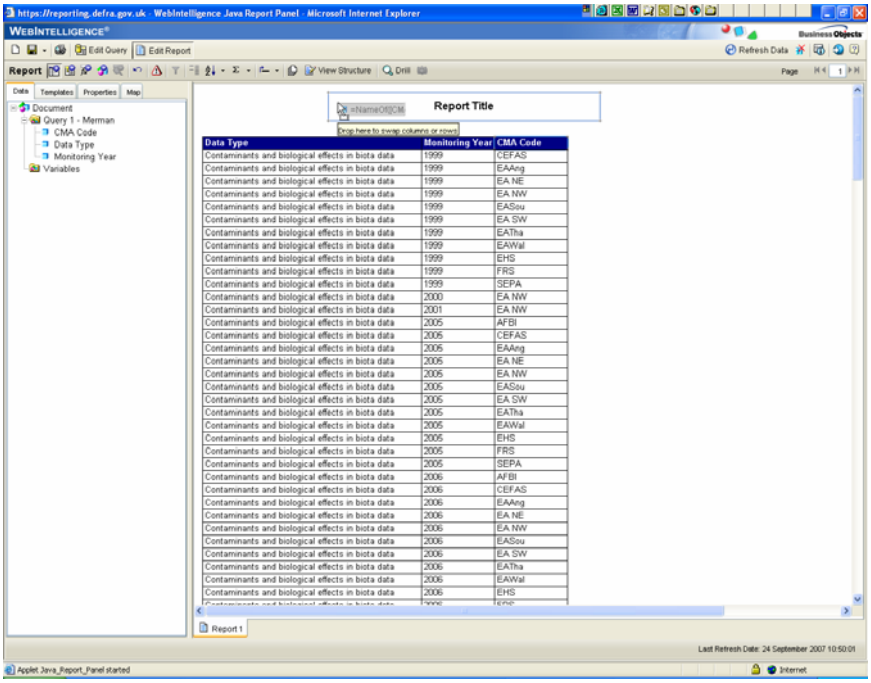
1. Select Data type from the folder 'Which Measurements?'
2. Select Monitoring Year from 'Date/time of sample'
3. Select CMA Code from 'Additional Search Criteria'.



4. Click on **Run Query** and you will be presented with the results which shows which years, data types and CMAs have data in MERMAN.



5. Expand column width by clicking and moving on arrows which appear when you hover the mouse arrow between columns.
6. Columns may be easily moved into a different order by clicking on the column heading and dragging it to the right or left of a different column heading. A rectangular box will appear to highlight the positioning of the column.
7. Pick up the monitoring year by clicking on the column header and dragging it to the left of the Data Type column. Remember your the column heading has to overlaid on to the left-hand side of the other one, you should see a blue rectangle to reflect this.
8. Drop the column when you are happy.

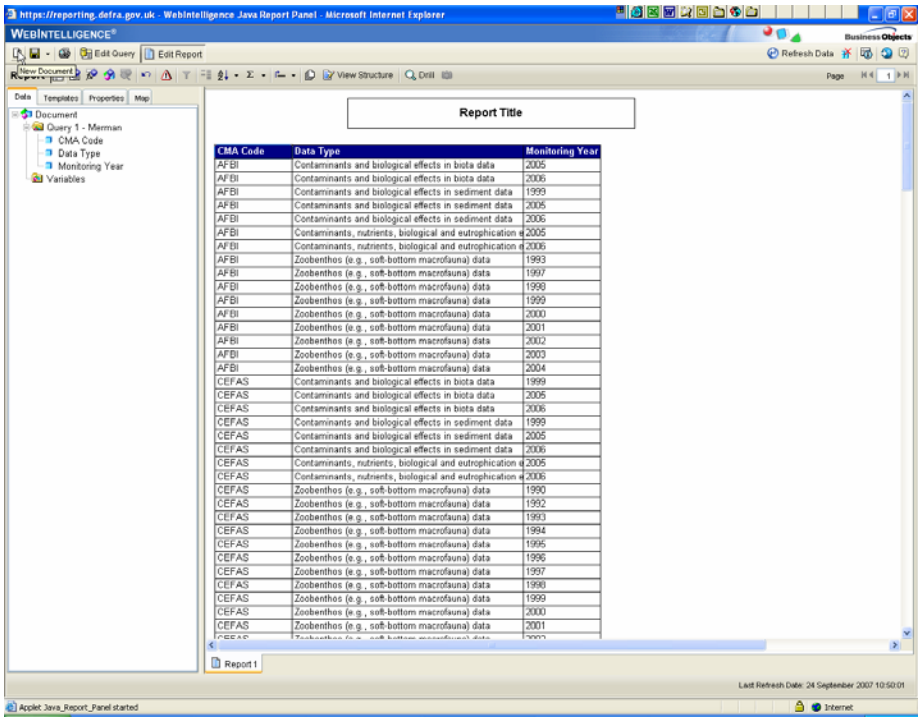


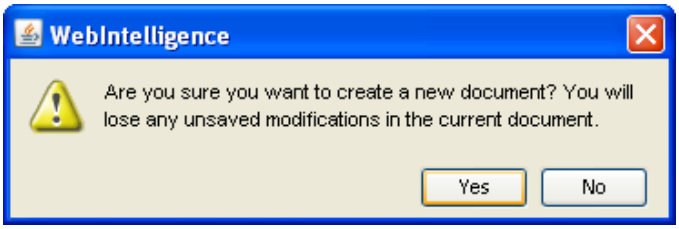
9. **Note** that the data are sorted according to which columns appear first.

3.4 EXERCISE: Running Queries

Toggle between Edit Query and Edit Report to get a feel for what a document is made up of.

We do not need to save this document so click on new document and select yes when prompted to loose any unsaved modifications.

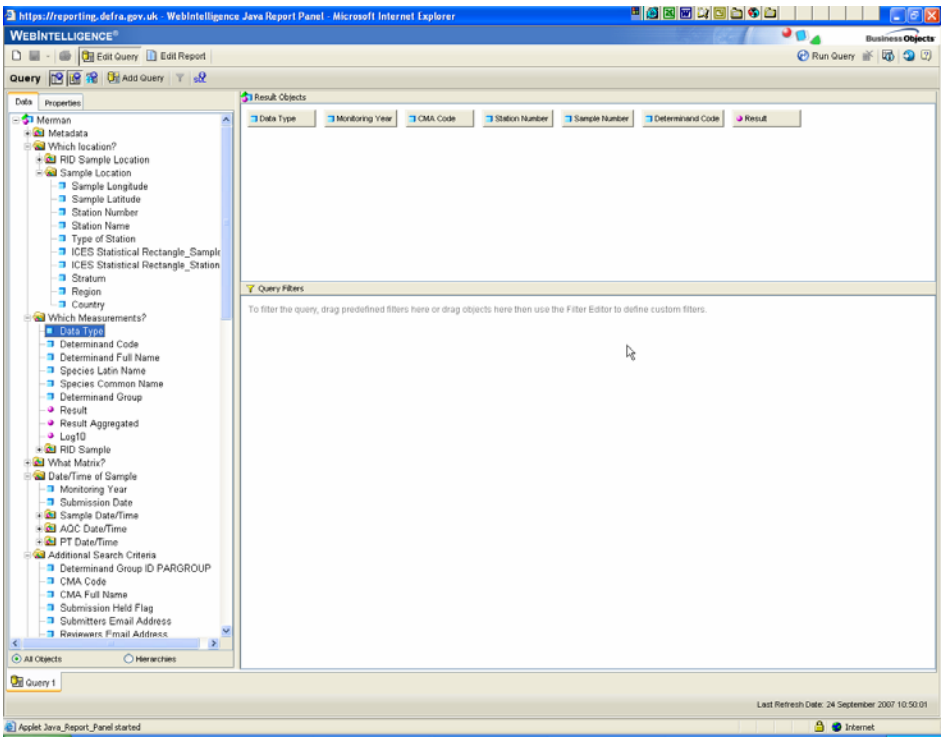

https://reporting.defra.gov.uk - WebIntelligence Java Report Panel - Microsoft Internet Explorer
WEBINTELLIGENCE
Edit Query
Edit Report
Refresh Data
View Structure
Drill
Page
Data
Templates
Properties
Map
Document
Query 1 - Merman
CMA Code
Data Type
Monitoring Year
Variables
Report Title
CMA Code | Data Type | Monitoring Year
AFBI | Contaminants and biological effects in biota data | 2005
AFBI | Contaminants and biological effects in biota data | 2006
AFBI | Contaminants and biological effects in sediment data | 1999
AFBI | Contaminants and biological effects in sediment data | 2005
AFBI | Contaminants and biological effects in sediment data | 2006
AFBI | Contaminants, nutrients, biological and eutrophication e | 2005
AFBI | Contaminants, nutrients, biological and eutrophication e | 2006
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 1993
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 1997
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 1998
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 1999
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 2000
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 2001
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 2002
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 2003
AFBI | Zoobenthos (e.g., soft-bottom macrofauna) data | 2004
CEFAS | Contaminants and biological effects in biota data | 1999
CEFAS | Contaminants and biological effects in biota data | 2005
CEFAS | Contaminants and biological effects in biota data | 2006
CEFAS | Contaminants and biological effects in sediment data | 1999
CEFAS | Contaminants and biological effects in sediment data | 2005
CEFAS | Contaminants and biological effects in sediment data | 2006
CEFAS | Contaminants, nutrients, biological and eutrophication e | 2005
CEFAS | Contaminants, nutrients, biological and eutrophication e | 2006
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1990
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1992
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1993
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1994
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1995
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1996
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1997
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1998
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 1999
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 2000
CEFAS | Zoobenthos (e.g., soft-bottom macrofauna) data | 2001
Report 1
Last Refresh Date: 24 September 2007 10:50:01
Applet Java_Report_Panel started
Internet


WebIntelligence
Are you sure you want to create a new document? You will lose any unsaved modifications in the current document.
Yes
No

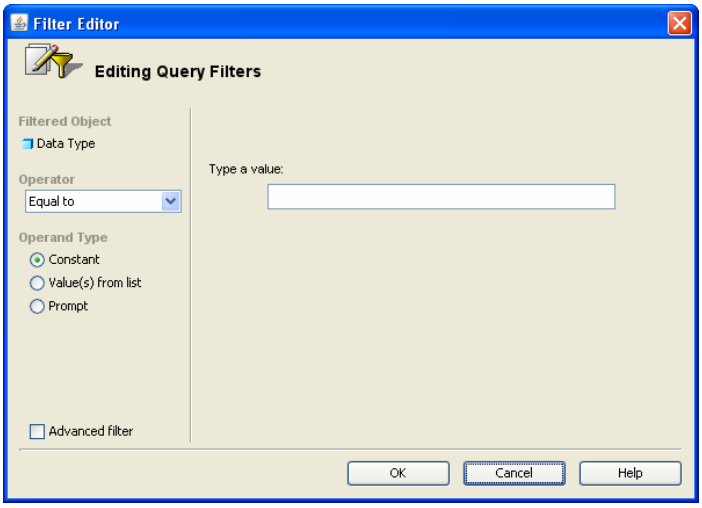
3.5 *Running a more complex query using filters*

- In this example we will retrieve data for Pb in sediment data for each Sample and each Site within 1 Monitoring Year for a specific CMA.
- To create this query we need to filter by Monitoring Year (2005), CMA (e.g. SEPA), Determinand Code (Pb) and Data Type (Contaminants in Sediments).
- We must also include Station Number, Sample Number and the Result in the query for the results to be displayed on those criteria.

1. Click and drag across the required objects to the object pane as shown below.

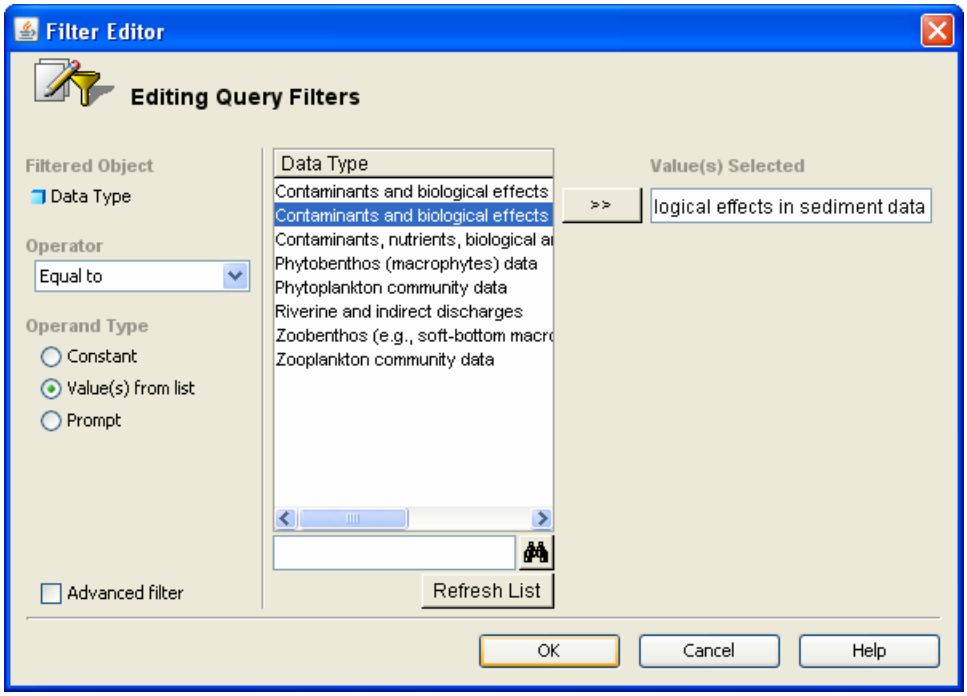


2. To filter, click and drag across Data Type to the filter pane.
3. You will be prompted to either type in the code you wish to filter by if you know it (**Constant**), or pick a value from a list.

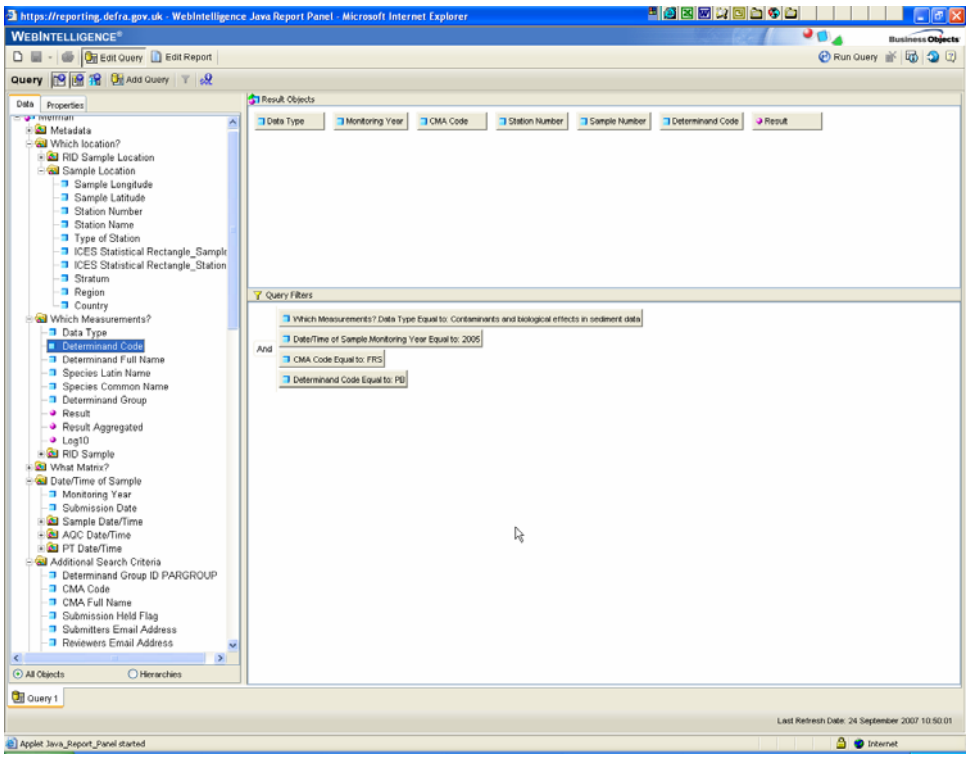


4. Highlight **Pick value from list** and double click ‘Contaminants and Biological Effects in Sediments’ (the second one down).
5. Select OK.

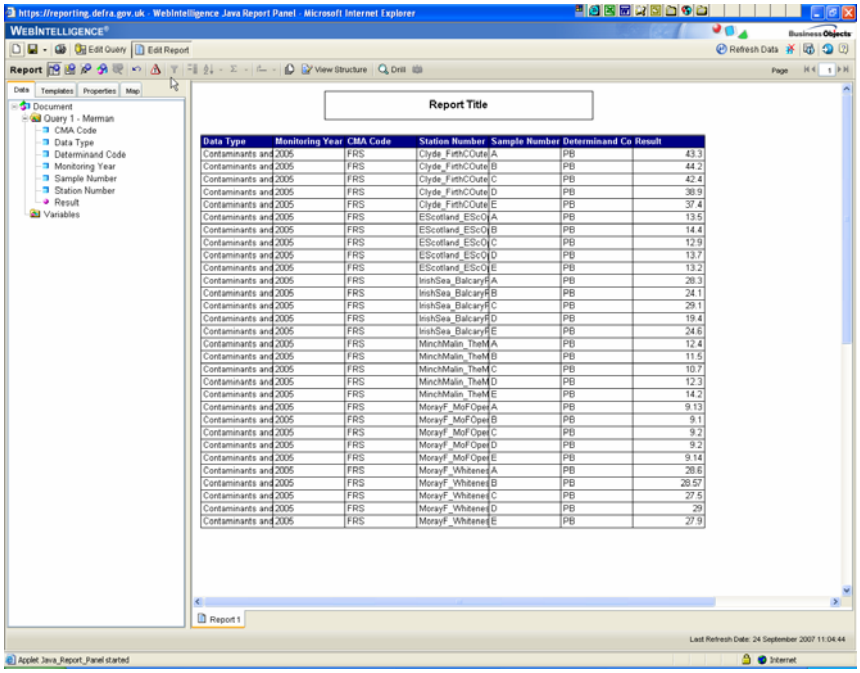
Note: It is good practice to ‘Refresh List’ if there have been any code changes.



6. Drag and filter the objects Determinand Code (filter by PB), Monitoring Year (filter by 2005), and CMA Code (filter by your own CMA).

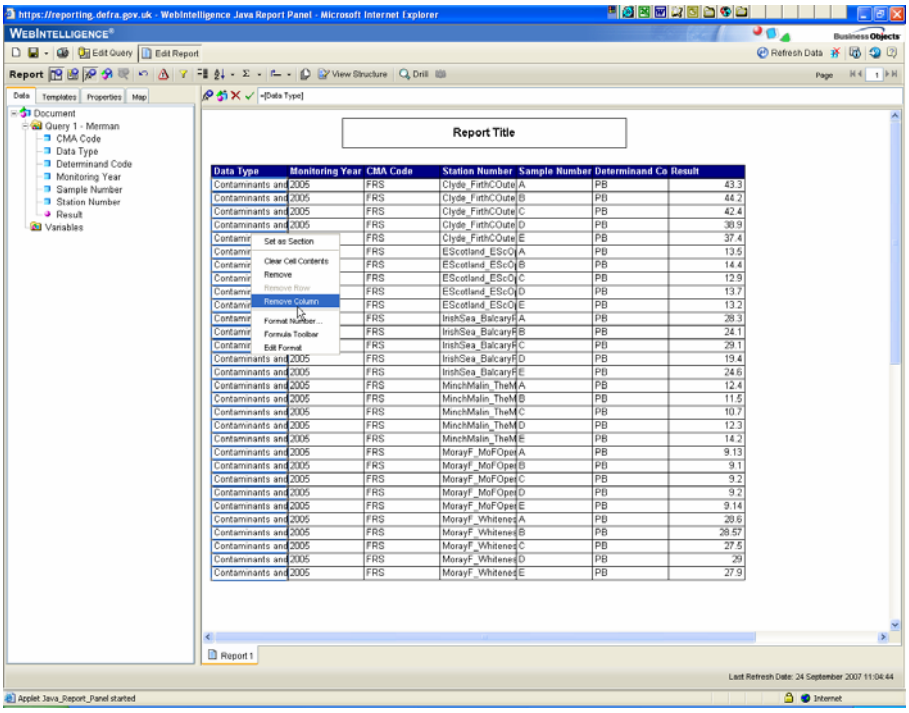


7. Once your screen looks like the above select '**Run Query'**.
8. The next screen should look something like the below but will be specific to each CMA.

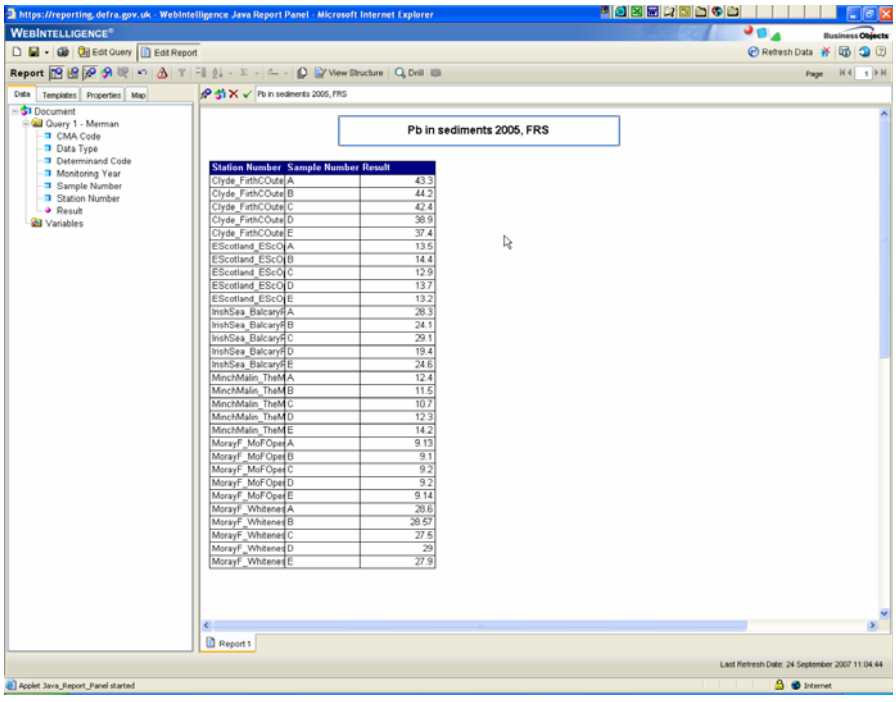


9. Some of the columns that are common to all rows are not required and may be removed and the details put in the report title instead.

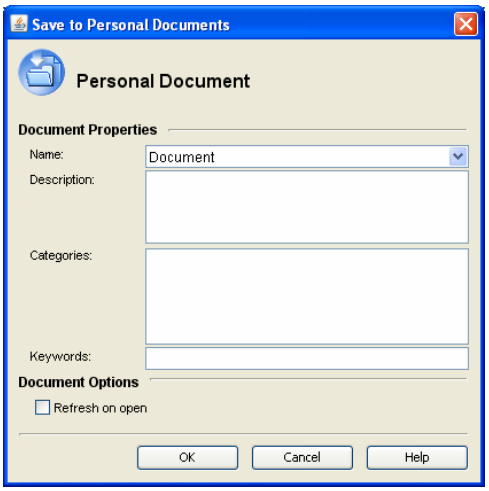
10. Right click on the columns to remove and select **Remove column**.
11. Continue until you are left with Station Number, Sample Number and Result.



12. Double click the report title and type a title into the box that appears (e.g. Pb in sediments 2005) and then hit return.
13. Your report should look like below (but specific to your CMA).



1. Save your document as a **Personal Document** by clicking the downward arrow next to the 'File save' symbol and selecting personal document.
2. Save your file as '**Pb_in_Sediment'**, and type in some suitable description and keywords and click OK.



Thoughts

- What would happen if you ran the query without filtering on data type?

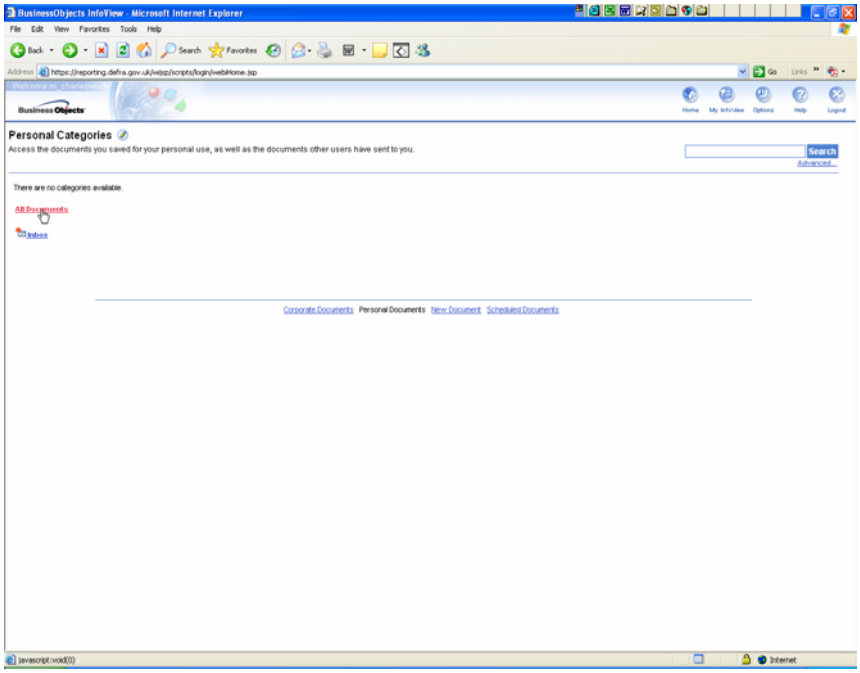
- What would happen if you ran the query without including the station numbers?

3. Close the Universe by clicking the X in the corner.

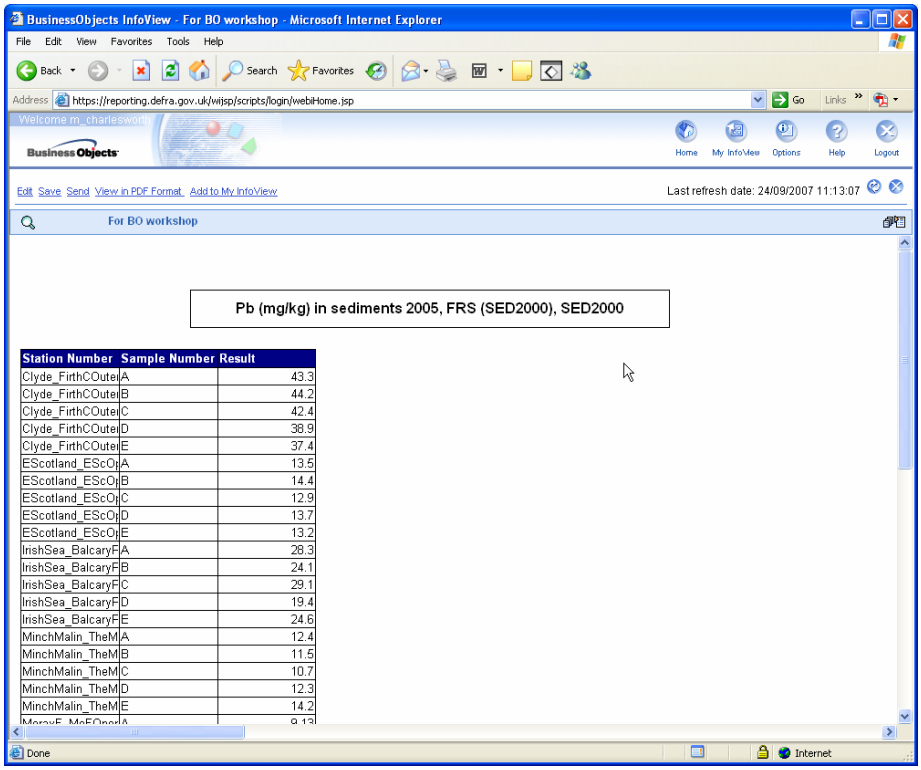
3.6 Editing an Existing Query

- Suppose you want to modify that query for a colleague who needs the information but also requires the units of measurement and the matrix code to be displayed.

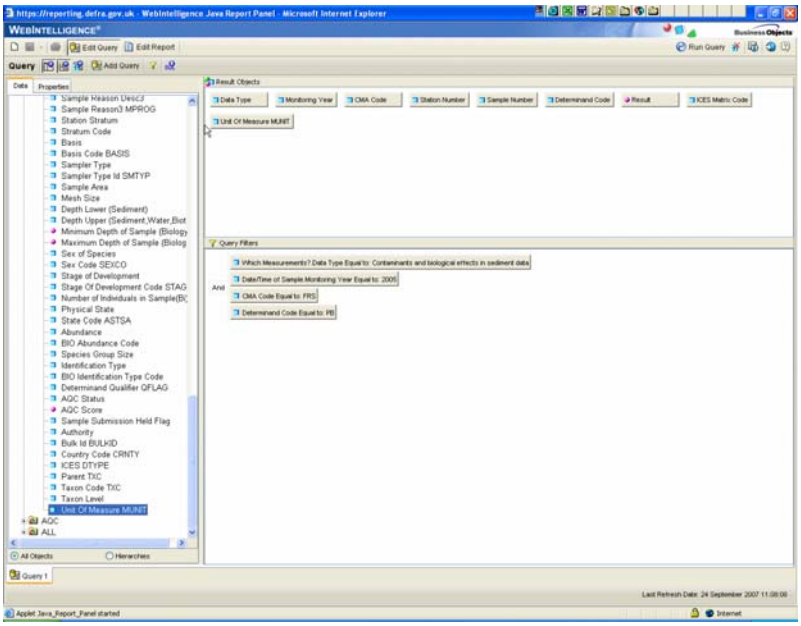
1. From the BO homepage, open Personal Documents and select 'All documents'.
2. Select the report you were just working on.



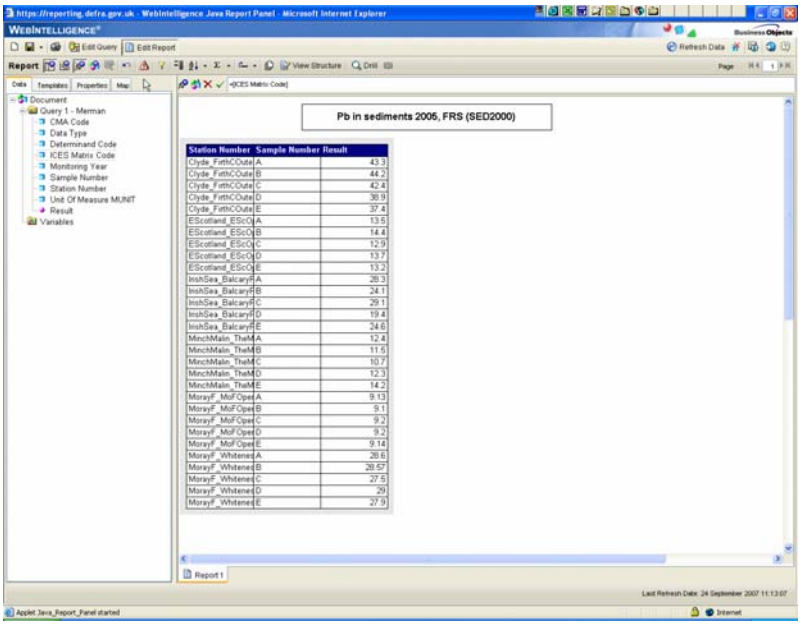
3. Your report will automatically open.
4. Select 'Edit' and the Web Intelligence Universe window will open allowing you to click '**Edit Query**' and make changes to your query.



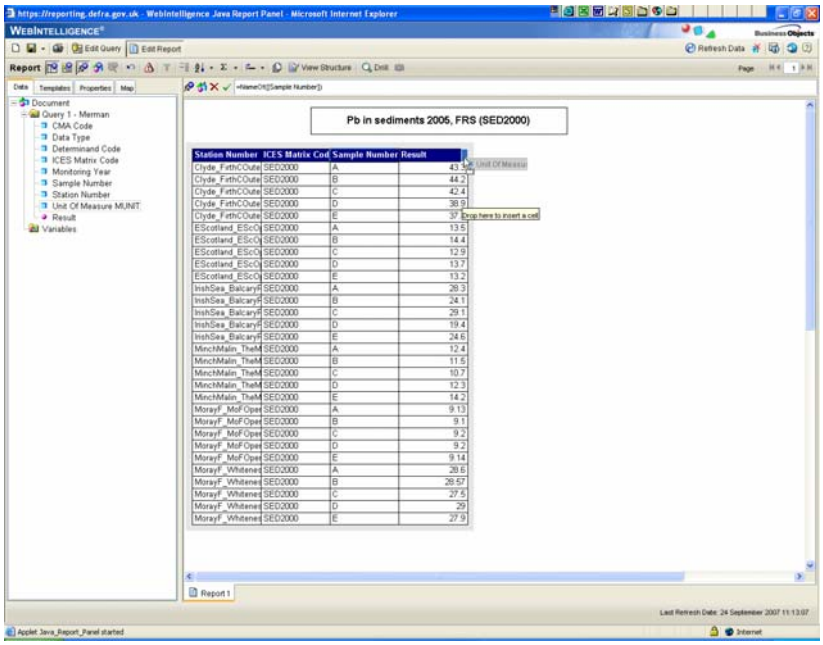
5. From **What Matrix**? drag across 'ICES Matrix Code' and from **Additional Search Criteria** and from **Sample** folder drag across 'Units of Measurement' into the Objects Pane.
6. Your query should look like the below:



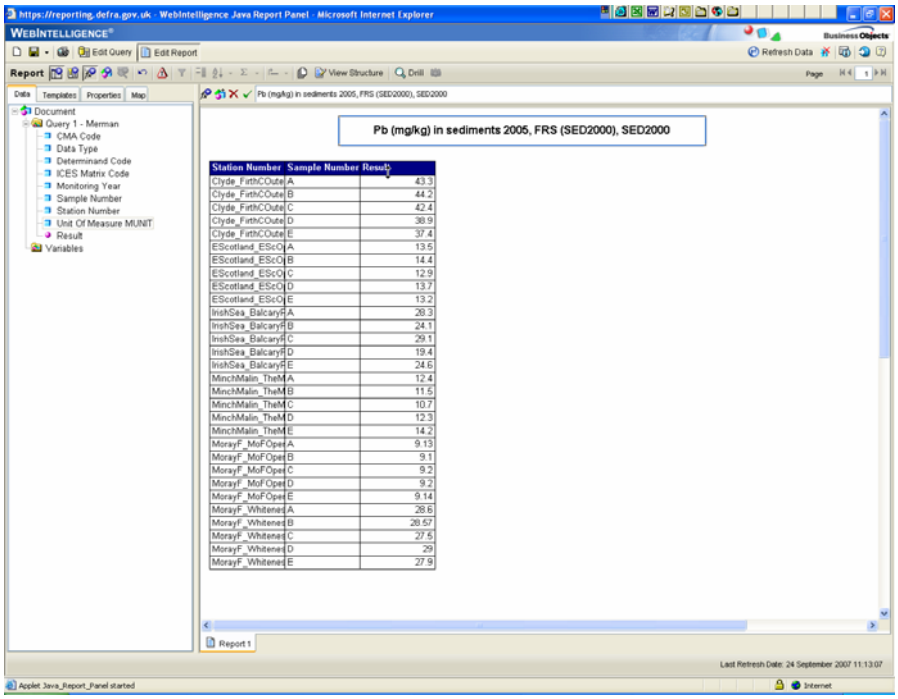
7. Click **Run Query** and you will be presented with the report as below:



8. You will notice that the report does not have these new fields in.
9. You must drag them in from the left hand pane and drop them into the columns as you wish.



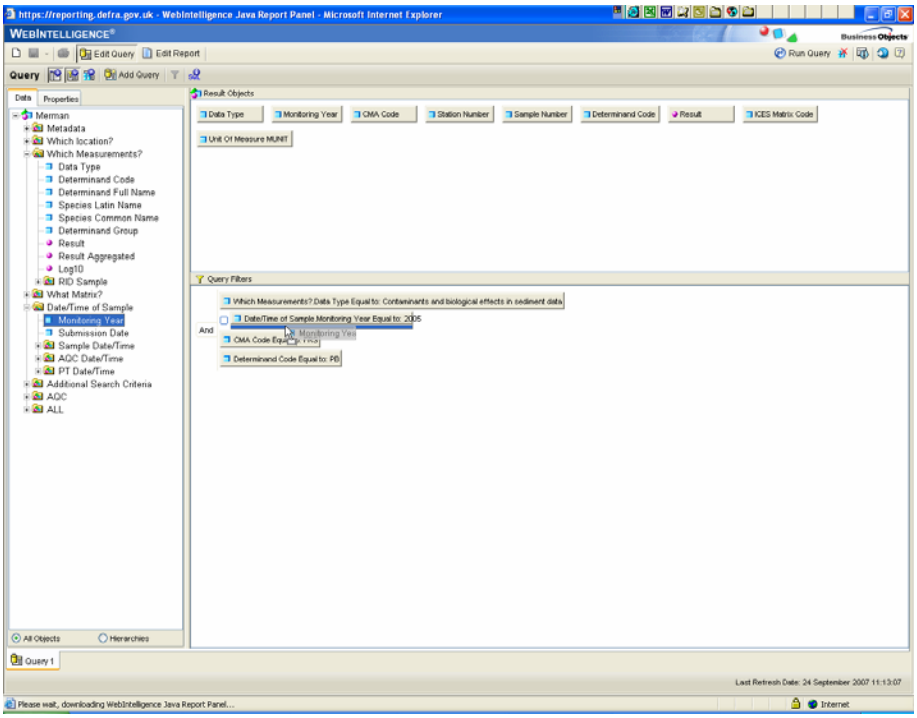
10. Remove the 2 extra fields, Matrix code and Units of Measure, from the report and change the title to reflect the changes so your report looks as below.
11. Save your document (i.e. overwrite the existing document). You could save this report as an excel file or pdf file if you need.



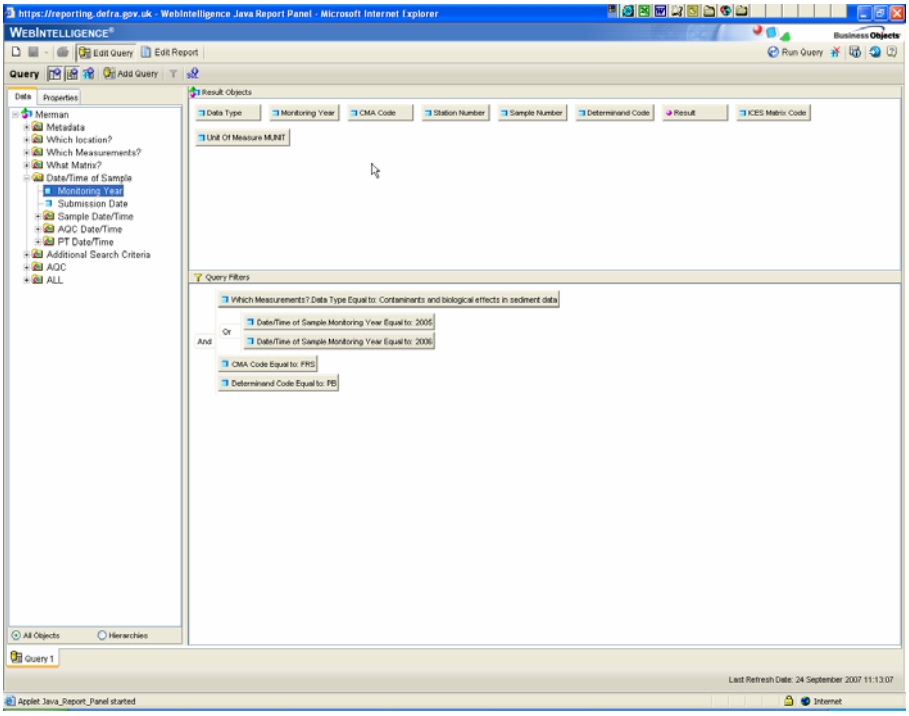
3.7 Advanced Filtering - Using the AND/OR operators

- When an object is dragged across to the filter pane it will be linked with the other objects in the filter pane by the AND/OR operators.
- The AND operator will restrict data to the filtered objects. For example filtering by PB AND 2005 will restrict the results to data that was collected in 2005 and the determinand PB.
- The OR operator will restrict the results to data of one or other criteria. For example filtering by PB AND 2005 OR 2006 will return data for PB in years 2005 or 2006.
- The default operator is AND.
- The AND/OR operators are chosen by the placement of the object when dragging to the filtering pane.

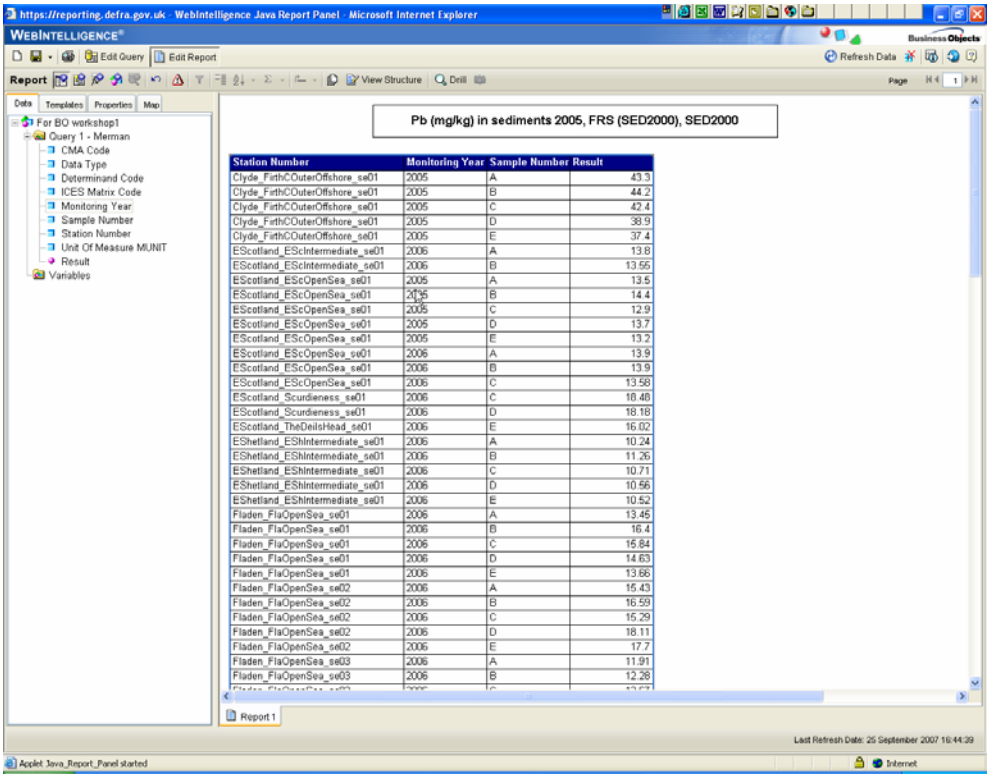
1. Save your document as a new document, which we can play around with. E.g. append the file name with a suffix ‘B’.
2. Edit your existing query so that results are shown for 2005 **OR** 2006 by dragging across ‘Monitoring Year’ and overlying it on the existing filter ‘Monitoring Year equal to 2005’.
3. If the box that you are adding becomes indented then the operator will be OR.
4. Note that by also double clicking the AND operator it will turn it to OR and visa versa.



5. Run the query and the results will be shown in the reports page.
6. Add in the Monitoring Year into the results table so that the 2005 and 2006 results can be distinguished.
7. Change the title accordingly.
8. Your Edit Query should look like this before you run the report.



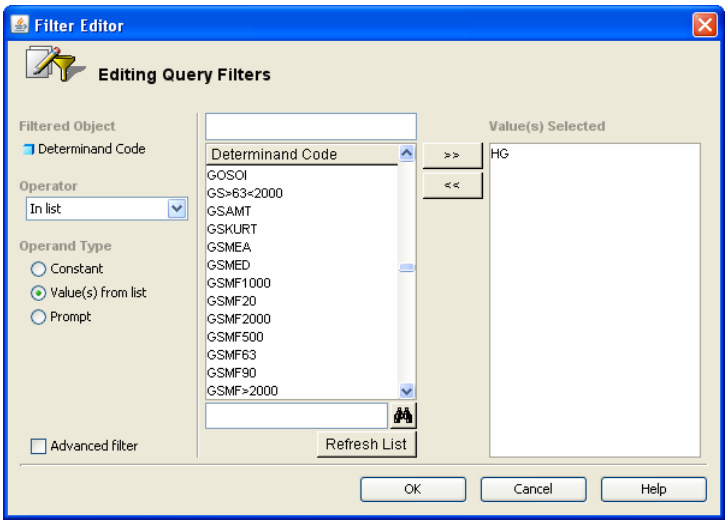
9. Your report should be like this once you add in the monitoring year.



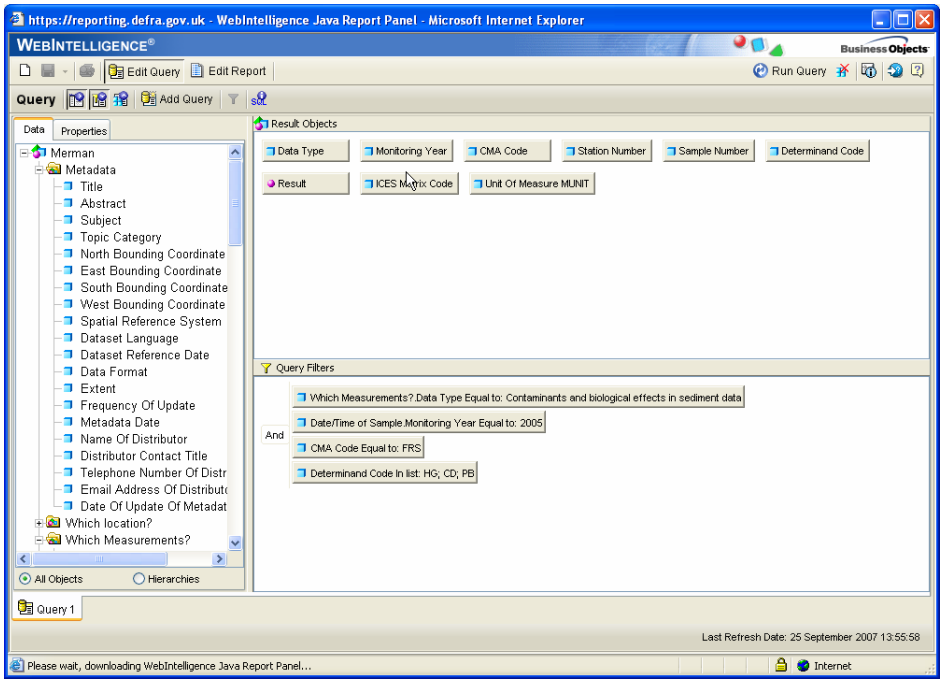
3.8 Using Other Operators from a List.

- Alternatively, there are a number of other operators that may be used such as 'In list' which allows you to choose more than one code per field (eg. more than one determinand from the determinand codes).

10. Edit the Query by deleting the additional filter pertaining to 2006.
11. Double click the Determinand Code object already in the Query filter pane and select '**In list'** from the Operator drop-down list.



12. Double click on PB, HG and CD so they appear in the values selected.
13. Click OK.
14. Your query should look like the below. Run your query.

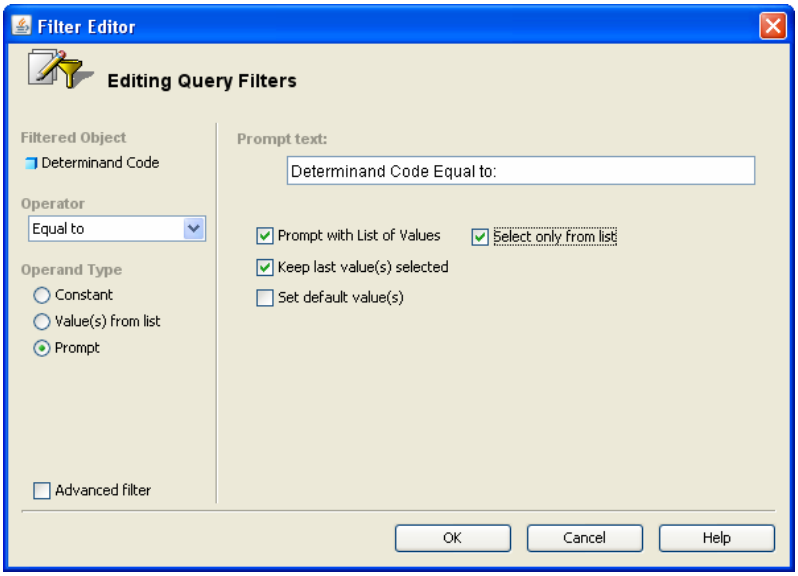


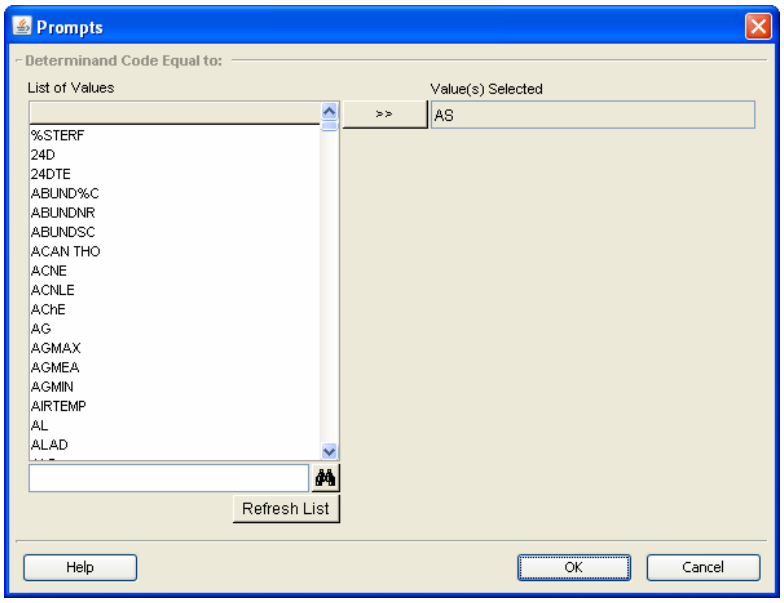
15. In the report remove the column for Monitoring Year (no longer needed) and add in the columns for Determinand Code and Units of Measurement.

3.9 Prompt for filtering

- You may wish to run the same report for a number of different determinands and that each time the report opens it prompts you to choose a determinand rather than changing the query each time.

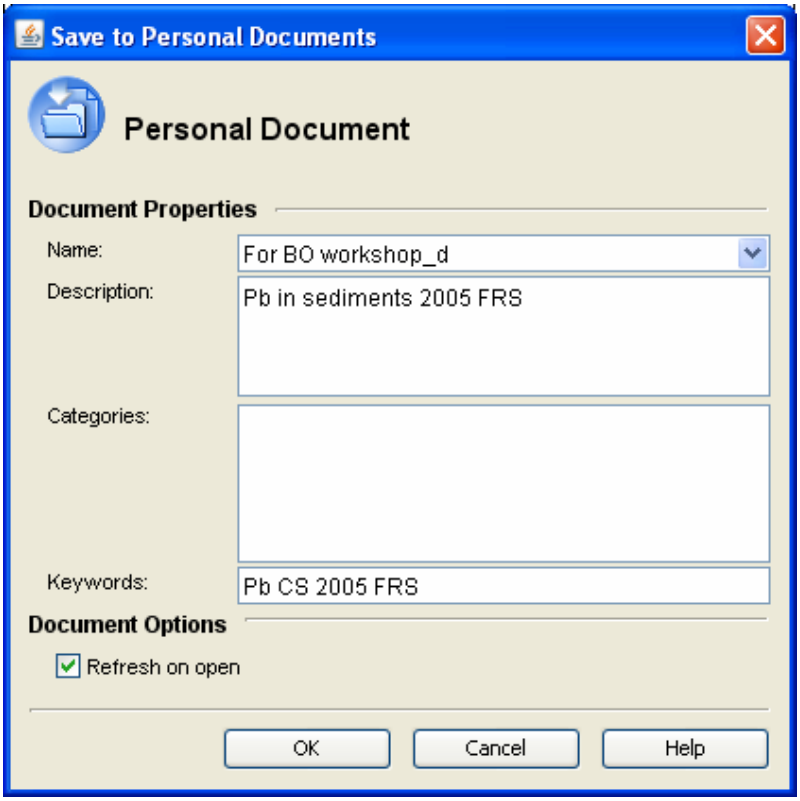
16. Delete Determinand Code from your existing filter.
17. Drag it across again to the filter pane and select '**prompt**' and '**select from list'**, click OK.
18. When you **Run Query** you will now be asked to select a determinand and your results will reflect the determinand chosen.





3.10 Refresh on Opening

1. Save this document in BO Personal Documents using a different suffix.
2. On the save window check the box that says '**Refresh on open'.**
3. Click OK.
4. By clicking this box each time the report is opened you will be prompted to select a Determinand.
5. Close the report, reopen it and try this.

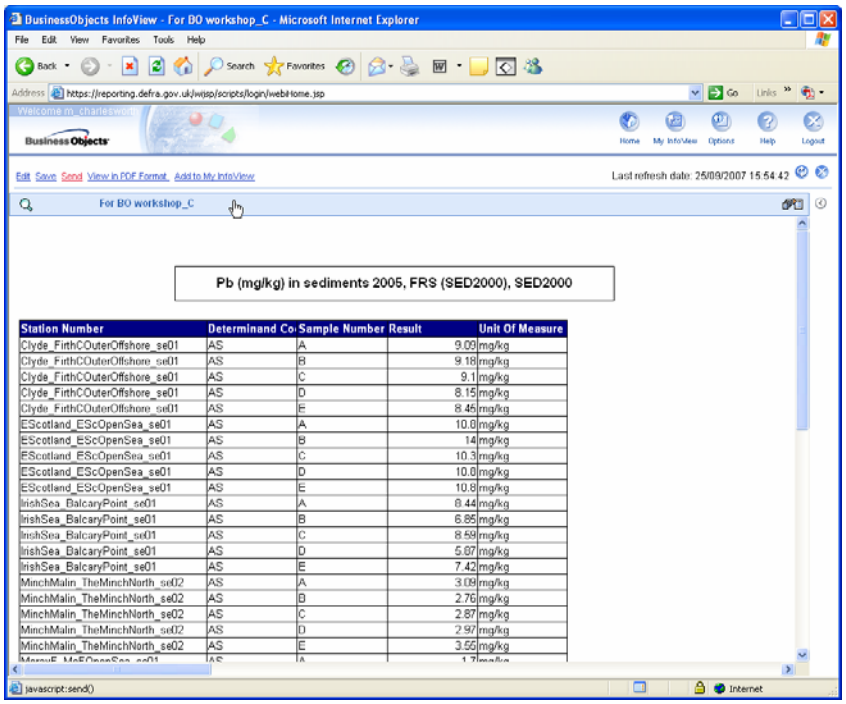


4.0 Sharing Documents

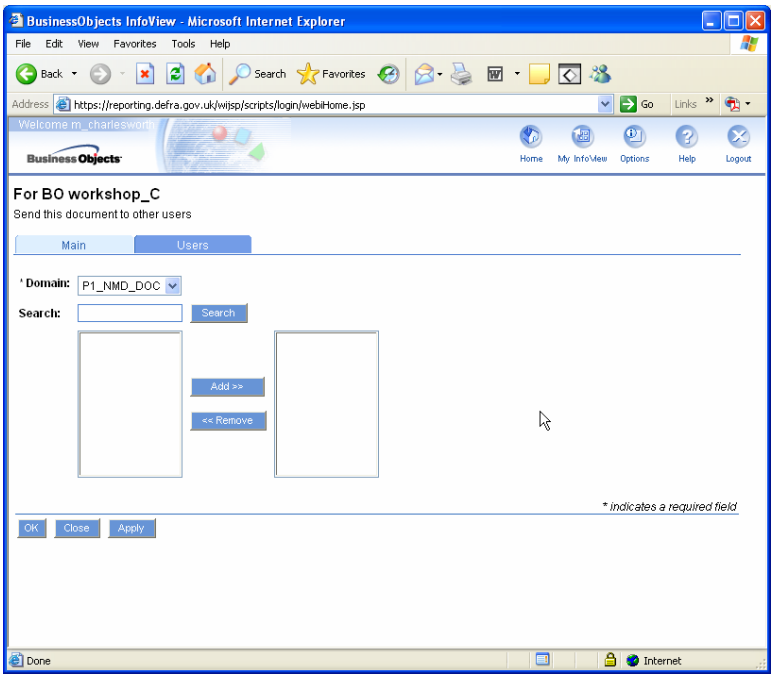
- It may be necessary to send a document (i.e. the BO query and results) to a colleague (myself and Corallie do this so we can check extractions of data for requests and if necessary make edits to the query or results).

4.1 Sending a document to a colleague who is also registered for MERMAN Business Objects

1. Close all documents and return to the BO home page.
2. Open a recently saved report from Personal documents and select '**Send**'.



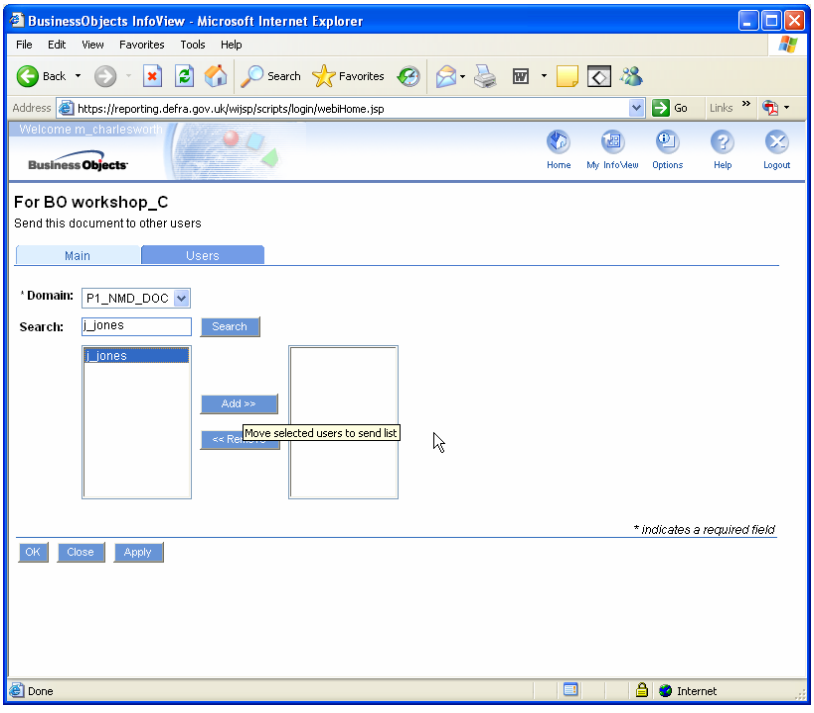
3. Select the Users Tag from the new window as per below.



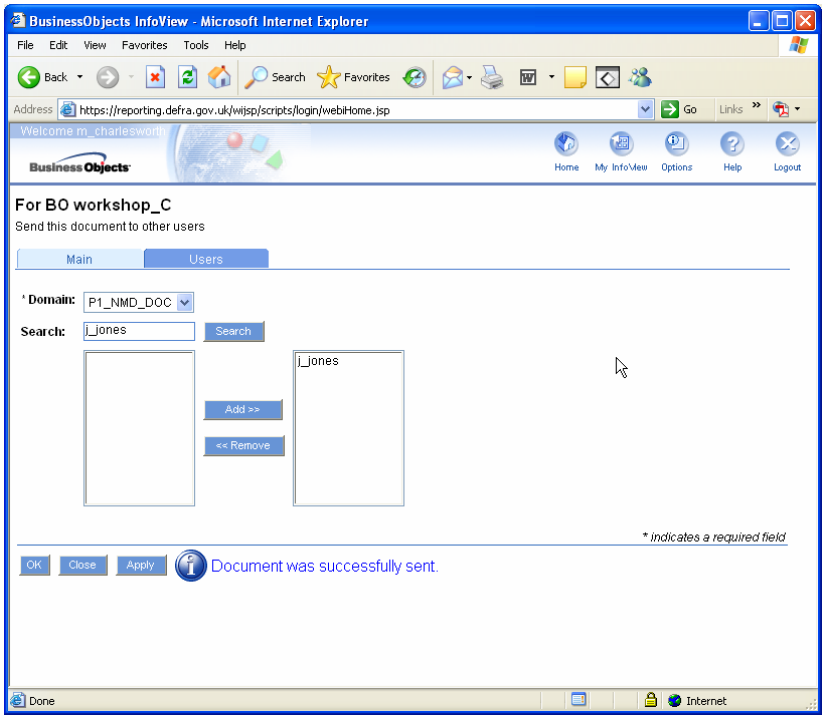
4. Type in the user name of the person you wish to send it to into the ‘search’ box.

NOTE: All Business Objects User IDs are the first character of their First Name, followed by an underscore, and then surname, e.g. m_charlesworth.

5. Click search.
6. If the person is registered then their ID will appear in the box below.
7. Highlight the ID name and click add.



8. Select apply and if it has been successfully sent a message will appear.
9. Click close.
10. If you select ‘Apply’ and then ‘OK’ your document will be sent twice.



4.2 EXERCISE: Sending Reports

1. All send the report you have created to the person to your right.
2. Navigate to your inbox and await the file sent to you.

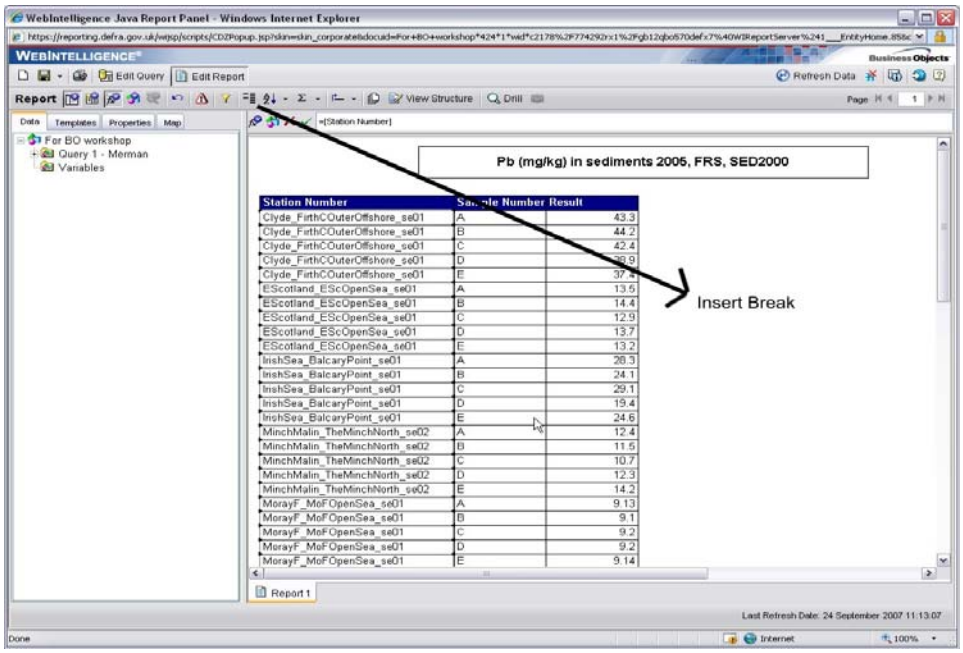
5.0 About Breaks

- ‘Breaks’ allow you to break up long tables of data into subgroups according to the data and the values you select.
- When you apply a break, the data are separated for each unique value of the selected variable.
- A blank row is also inserted after each value, which allows you to insert subtotals for the subgroup of the data if you so wish.

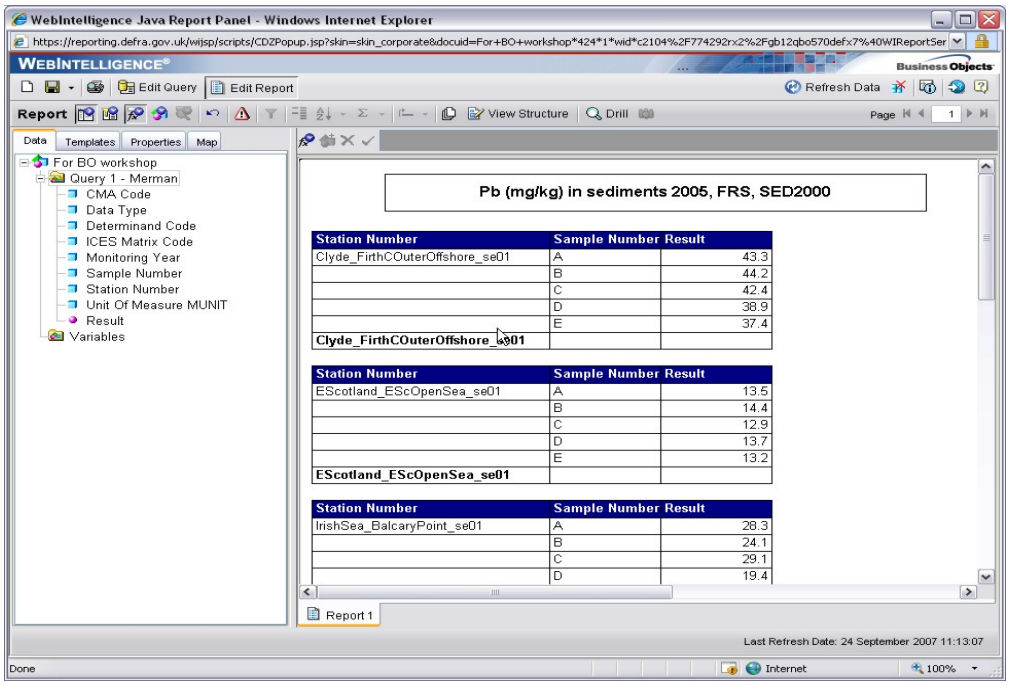
5.1 To organise a report with breaks:

E.g. – We will use the ‘**PB_in_Sediment’** file for this chapter and break the table into smaller sections by Station Name

1. Go to Personal Documents and open up the **Pb_in_Sediments** document.
2. Click **Edit Document**
3. Click on a cell in the Station Name column



4. From the report toolbar, click the **Insert/Remove Break** Button



5. An extra row has been added to the bottom of the table.
6. This can be kept or deleted, according to your preference.
7. To delete, click on a cell in the row. Right-click and **Remove Row**.
8. Save the document as '**Breaks'.**

5.2 To delete breaks

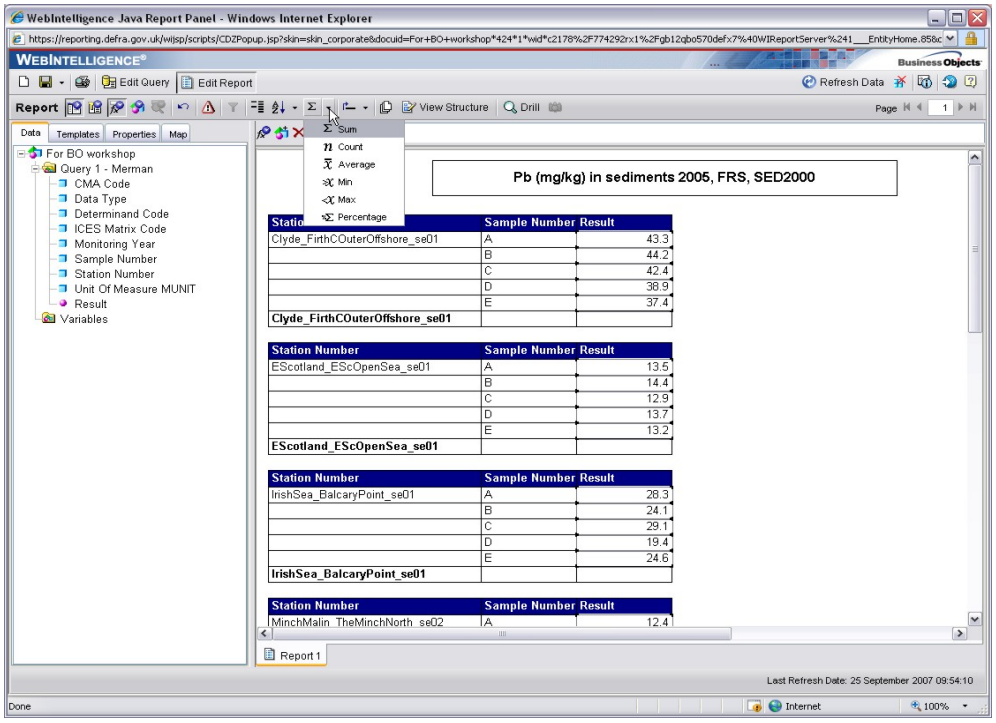
1. Click a cell in the column or row where you want to remove a break
    - E.g. Station name
2. From the report toolbar, click **Insert/Remove Break**.

6.0 About Calculations

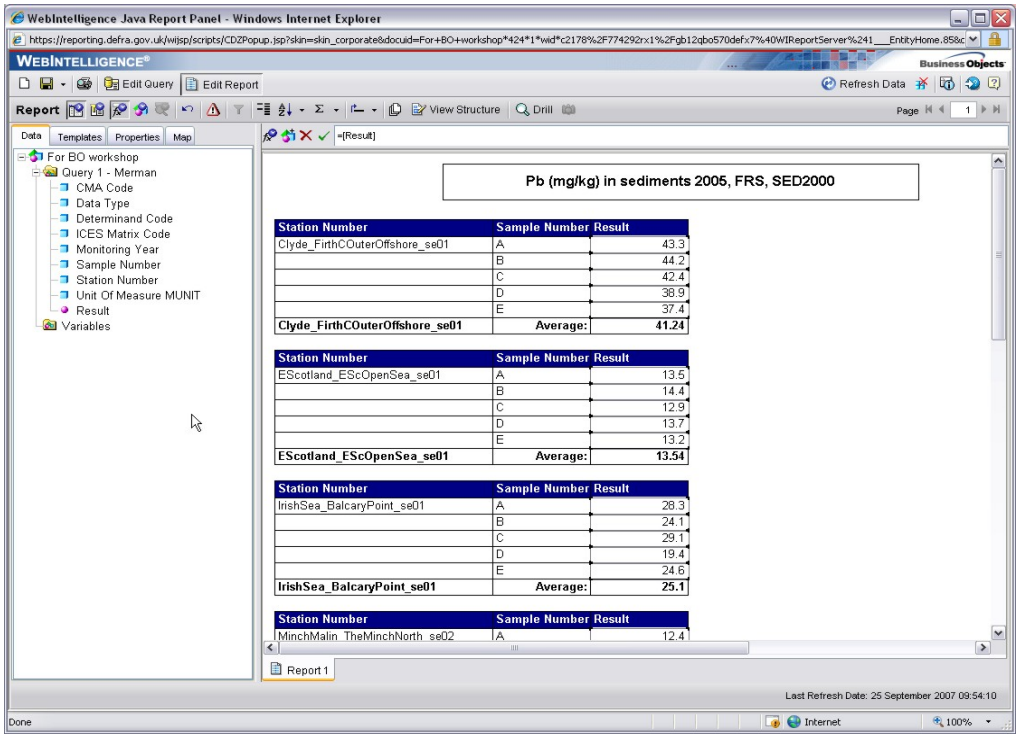
- WebIntelligence provides standard calculation functions to help you make quick calculations in your reports.
- You can calculate *sums*, *averages* and *percents*. You can also calculate the *total count*, and the *minimum* and *maximum* values for a variable.

6.1 To organise a report with calculations

1. Using the '**Break's** report, we will find the sample count and average value for PB concentrations, per station.
2. Click on the column you want to add the calculation to
    - E.g. Result
3. From the Report Toolbar, click the drop down menu next to the **Insert Sum** button



4. Click **Average**
5. An average is inserted in the bottom row of EACH subgroup.



6.2 EXERCISE: Applying Calculations

1. Add the Maximum and Minimum Value to the table.
2. Save Report as '**Calculations**'

6.3 To Delete a Calculation

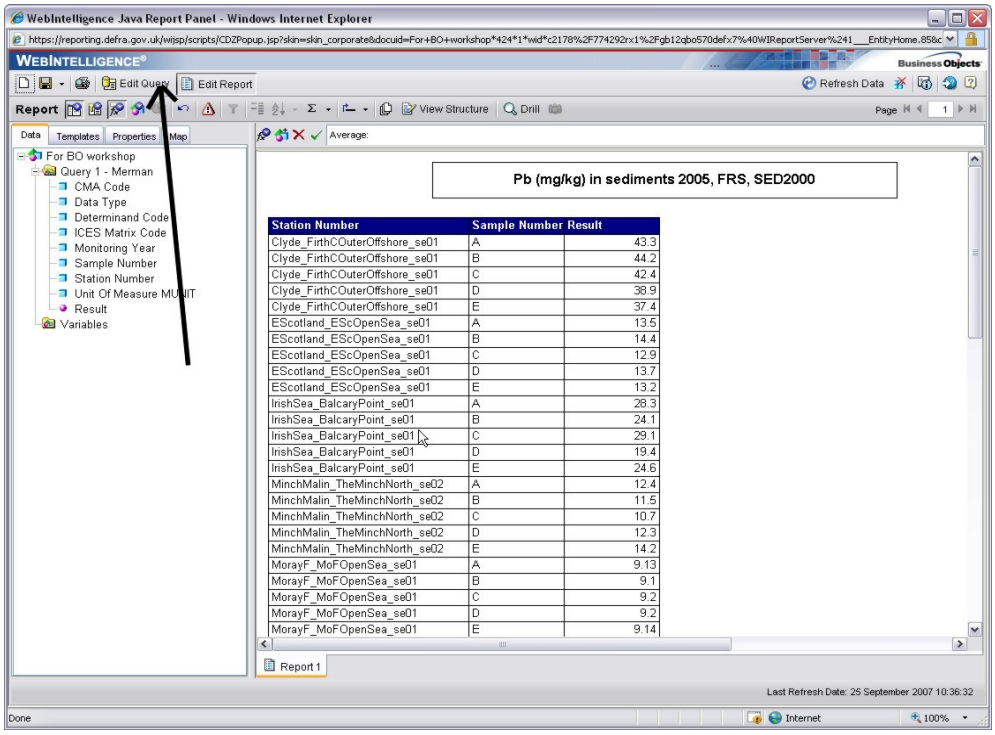
1. Right-click the table footer that contains the calculation
2. Select **Remove Row** or **Remove Column**

7.0 About Sorts

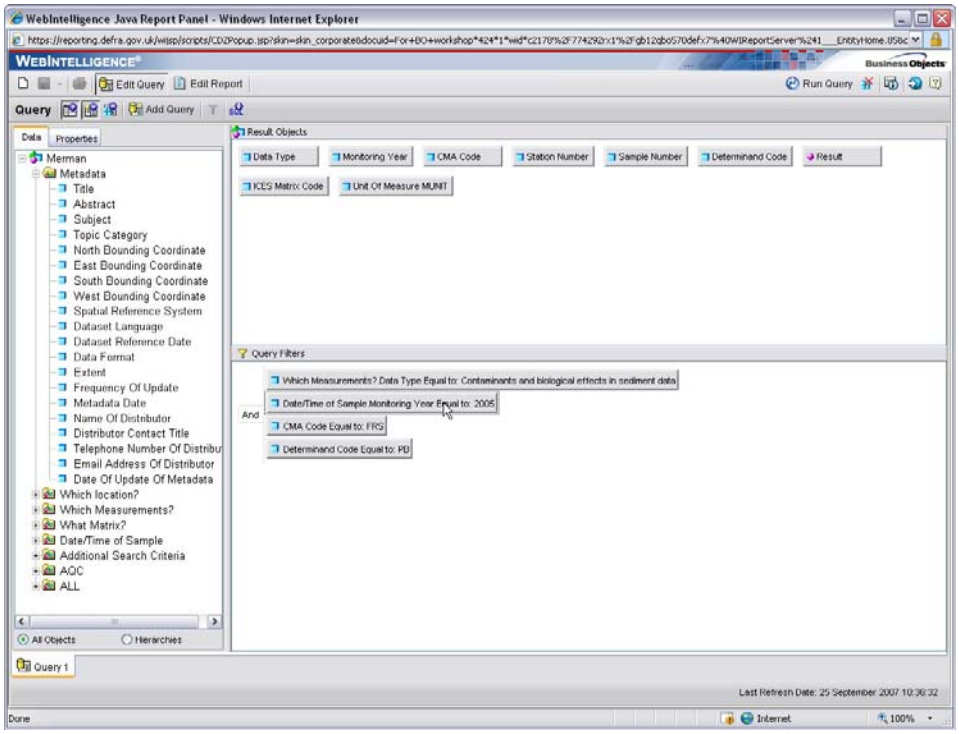
- The sort feature allows you to format data in an ascending or descending order.
- The default sort is applied to the 1st column, then the 2nd column etc.

7.1 Creating a Document with Sorts

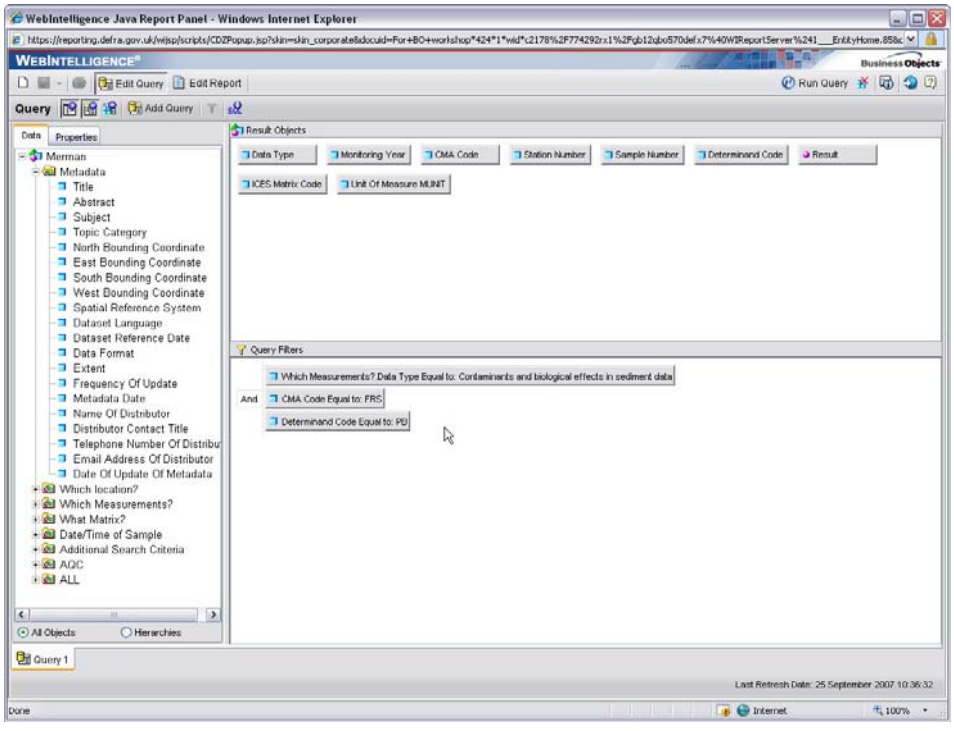
1. Open '**Pb_in_Sediments'** document
2. The report is already sorted by 'Station Name' (1st column)
3. We can add in the 'Monitoring Year' and then sort by this.
4. First we need to take off the filter for the 'Monitoring Year', which at the moment is set to 2005.
5. Click **Edit Query**



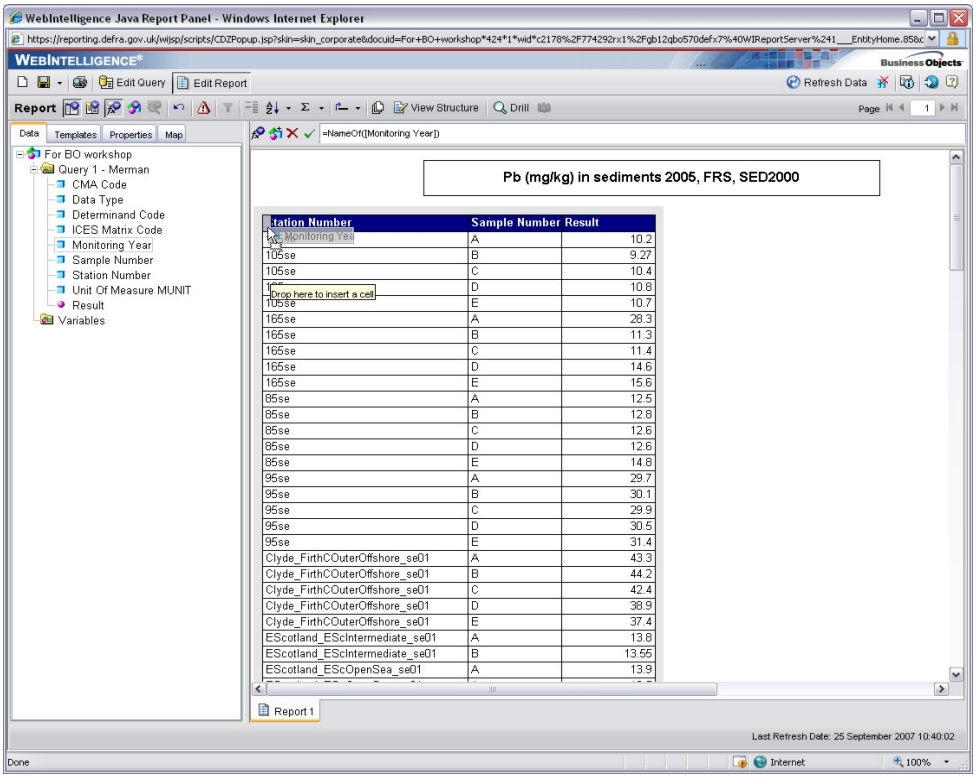
6. Click on the 'Monitoring Year' field in the Filter Pane



7. Holding the button down drag it into the left hand column and drop it.

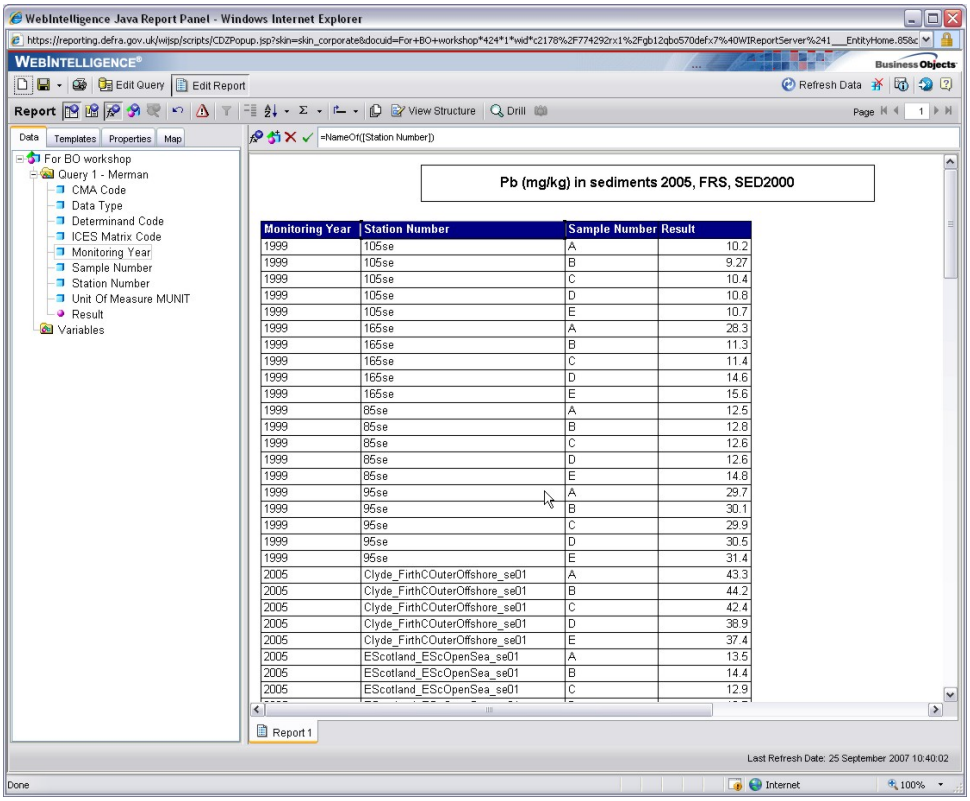


8. **Run Query**.
9. We now want to incorporate ‘Monitoring Year’ back into the table.
10. Go to the data tab on the left-hand side.
11. Click and hold ‘Monitoring Year’ and drag it to the left hand side of ‘Station Number’ in the table header columns. You will see a grey rectangular box down the side, which acts a placement guide.



tation Number	Sample Number	Result
105se	A	10.2
105se	B	9.27
105se	C	10.4
105se	D	10.8
105se	E	10.7
165se	A	28.3
165se	B	11.3
165se	C	11.4
165se	D	14.6
165se	E	15.6
85se	A	12.5
85se	B	12.8
85se	C	12.6
85se	D	12.6
85se	E	14.8
95se	A	29.7
95se	B	30.1
95se	C	29.9
95se	D	30.5
95se	E	31.4
Clyde_FirthCOuterOffshore_se01	A	43.3
Clyde_FirthCOuterOffshore_se01	B	44.2
Clyde_FirthCOuterOffshore_se01	C	42.4
Clyde_FirthCOuterOffshore_se01	D	38.9
Clyde_FirthCOuterOffshore_se01	E	37.4
EScotland_EScIntermediate_se01	A	13.8
EScotland_EScIntermediate_se01	B	13.55
EScotland_EScOpenSea_se01	A	13.9

12. Drop the field and a new column will appear with year.



13. The table is now sorted by year.

14. To sort by 'Station Number' again you can EITHER:
    1. Click on a cell in the Station name Column and from the Report Toolbar click on **Insert/Remove Sort** OR
    2. Drag and drop the Station Number column so that it becomes the first column in the table.

7.2 EXERCISE: Further Sorting

1. Can you try sorting the table by 'Monitoring Year' and then by 'Sample Number'? There are two possible ways.
2. Save document as '**Sorts**'

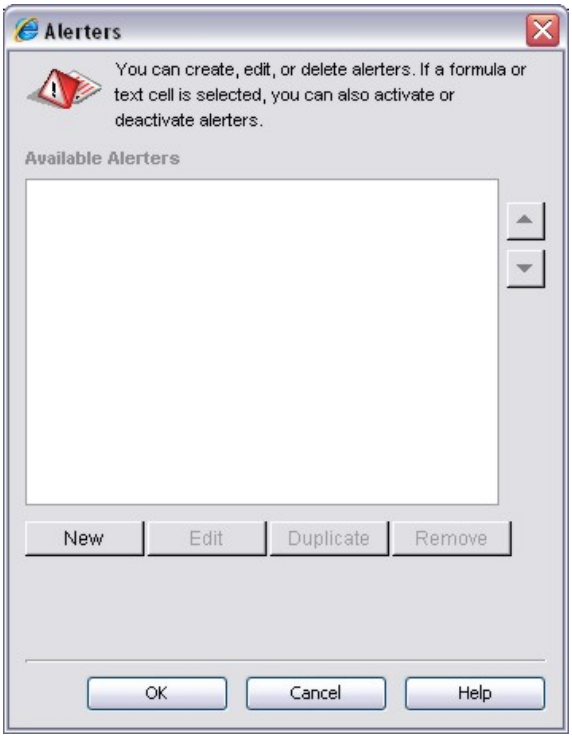
8.0 About Alerters

- Alerters enable you to highlight results that meet or fail specific conditions
- You can create a simple alerter to highlight particularly high or low results with a specific colour, or advanced alerters that display a text comment, for instance, ‘Anomlaous Value’.
- An alerter contains 5 elements:
    - A name
    - An object or cell contents
    - An operator
    - An operand value or another object
    - The conditional formatting

- When you apply the new alerter to a table column, row or cell on a report, WebIntelligence applies the condition to the cell values and displays any values that meet the condition in the alerter with the formatting specified.

8.1 To Create a Basic Alerter

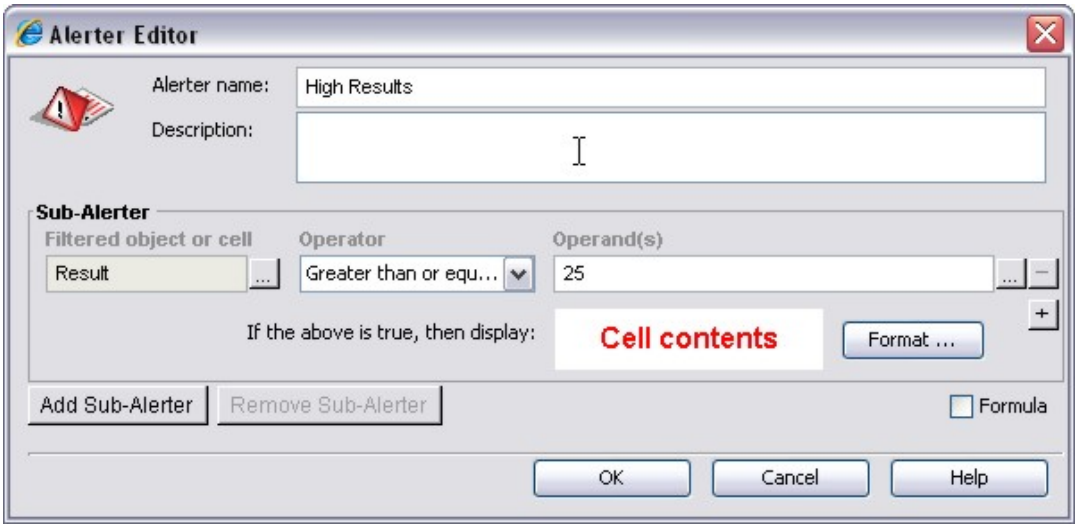
1. Open the ‘**Pb_in_Sediment’** document.
2. Add the ‘Units of Measurement’ Column to the Table by dragging the object over from the Data tab and dropping it next to the Results column.
3. Break the report up into sections by ‘Station Name’. Highlight a cell in the Station Name column and click the **Insert/Remove Break** button.
4. We will add an alerter to highlight any results that are over **25 mg/kg** for instance.
5. Click in the Result column.
6. From the Report toolbar click **Alerters**. The **Alerters** dialogue box displays.



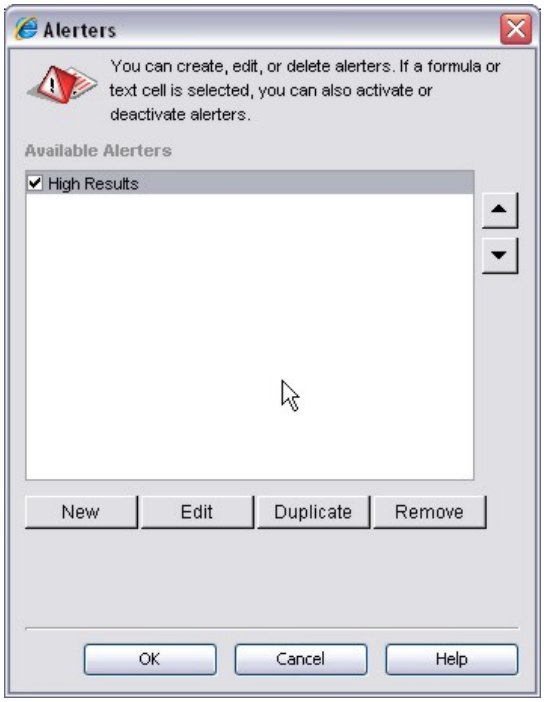
7. Click New. The Alerter Editor displays

8. Under **Alerter name**, type a memorable name for the alerter
   Example: High Results (You can also include an optional description).
9. Under **Operator,** select an appropriate operator
   Example: Greater than or equal to.
10. Under **Operand**, specify the value or object appropriate for the operand
    Example: 25 (Do not include commas or decimals when specifying number values).
11. You can edit the format that the results specified by the alerter appear in.
12. Click format.

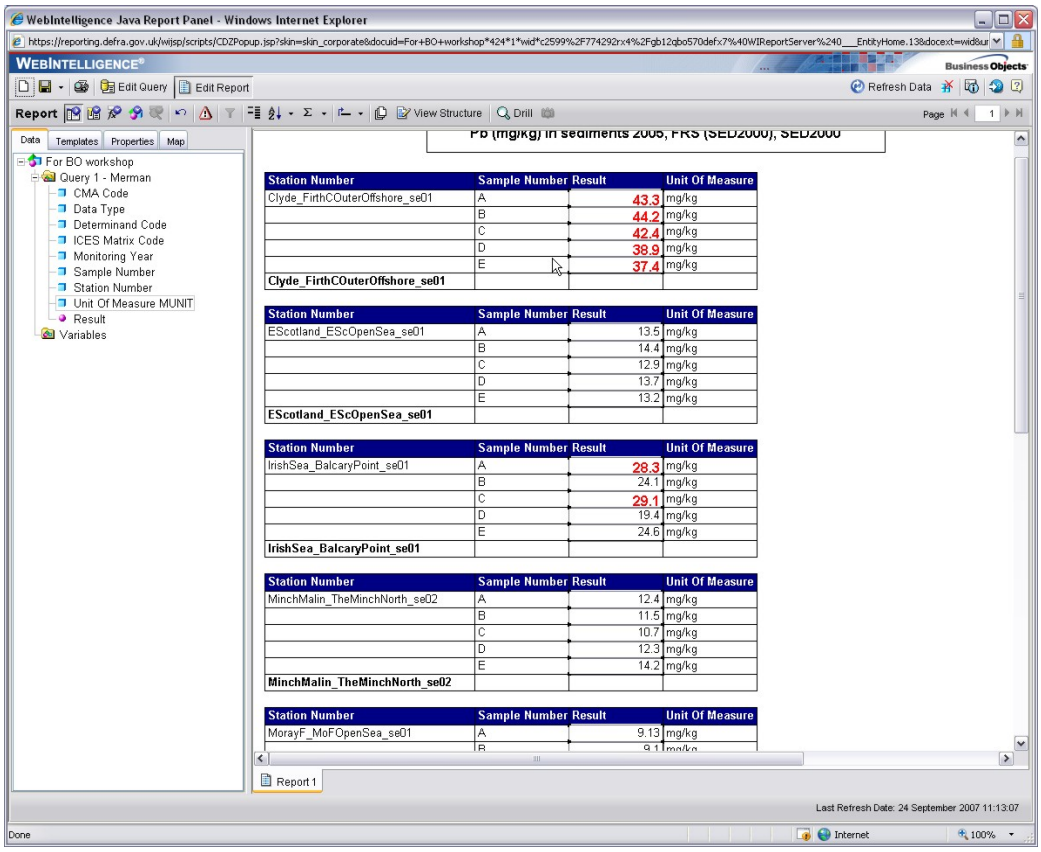
13. Choose bold and make the size of the font 12.



14. Click OK.
15. The new alerter is added to the list of alerters in the **Alerters** dialogue box. Verify that the check box beside the alerter is selected.



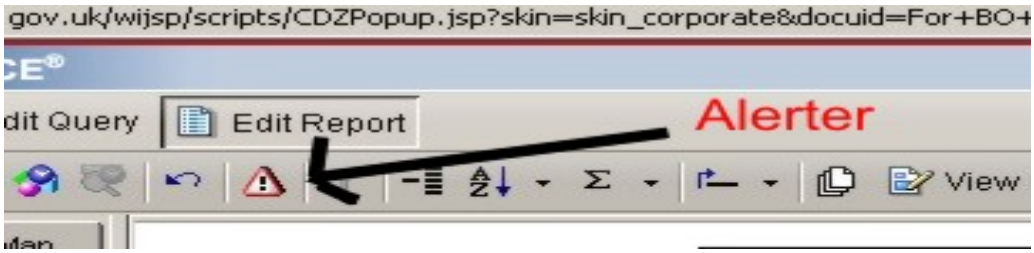
16. Click OK
17. The alerter is applied to the report results



18. Save document as **'Alerter'.**

8.2 To activate/edit alerters

1. Click on the table row or column, section cell or free-standing cell you want to apply the alerter to.
2. From the report toolbar, click **Alerters.**



3. The **Alerters** dialogue box displays a list of available alerters.
4. From the **Alerters** dialogue box, select the alerter you want to activate.
5. Select the check box beside the alerter you wish to activate, click OK.
6. **OR** if you wish to edit the alerter, select the check box beside the alerter and click edit.

Note: To deactivate an alerter, click the column, row, section cell or free-standing cell, click Alerters and deselect the check box beside the alerter you want to deactivate.

8.3 EXERCISE: Further Alerters

1. Add an alerter to the results document which will highlight any value **less than 10.**
2. Format the alerter so that the following text appears in the box instead of the result value: ‘Value less than 10’. Format the text to appear in Green, size 10.
3. Save document (i.e. overwrite).

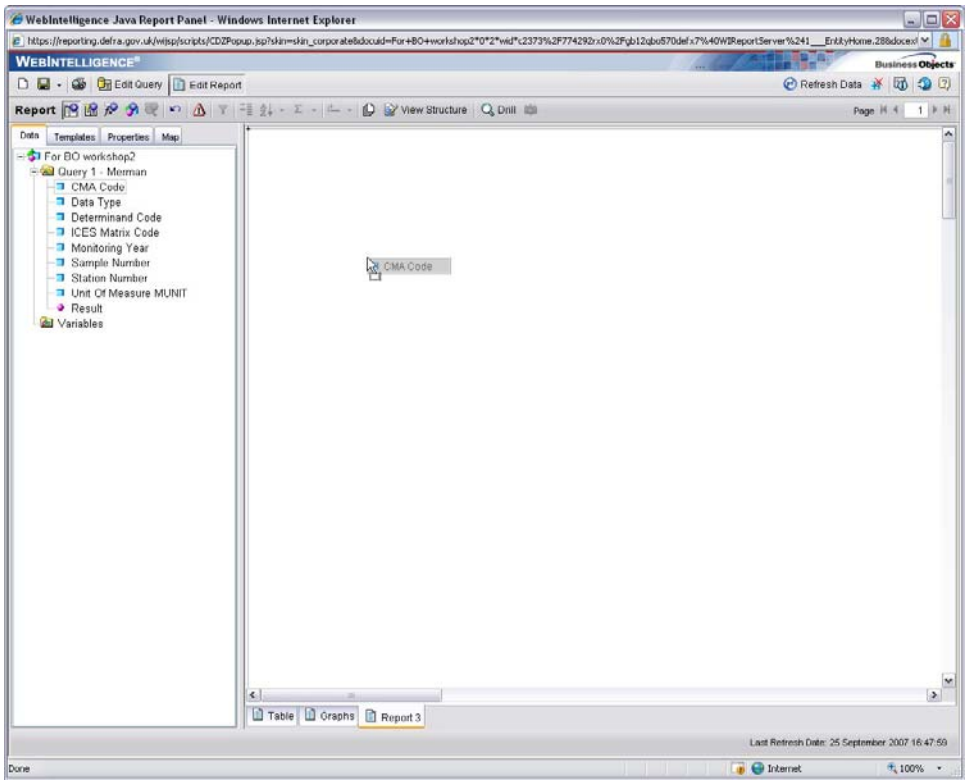
9.0 Working with Tables

- When you first create a new document by building and running a query, the data retrieved are generally displayed by default in a vertical table.
- You can also insert tables into a blank report and then build them up. This can be done by either:
    - Dragging the objects from the **Data tab** for which you want the table to display values
    - Dragging a table template from the **Templates tab** that defines the structure of the table. You can then drag objects into the table.

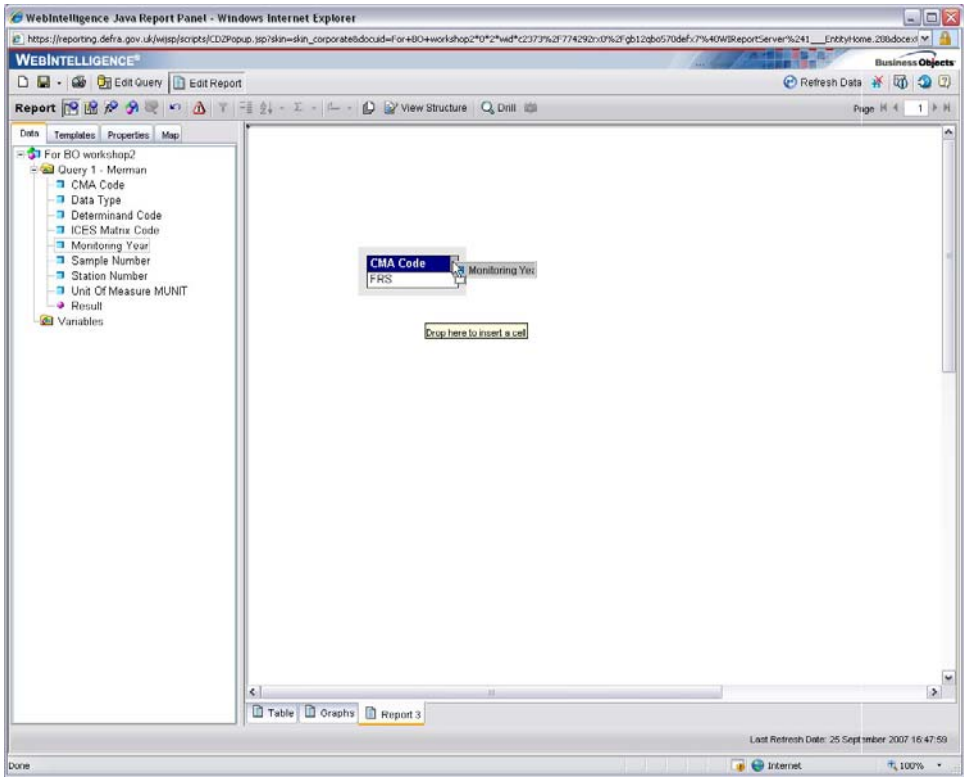
9.1 Creating Various Tables

In this scenario we will build a table by dragging the objects in to a blank report.

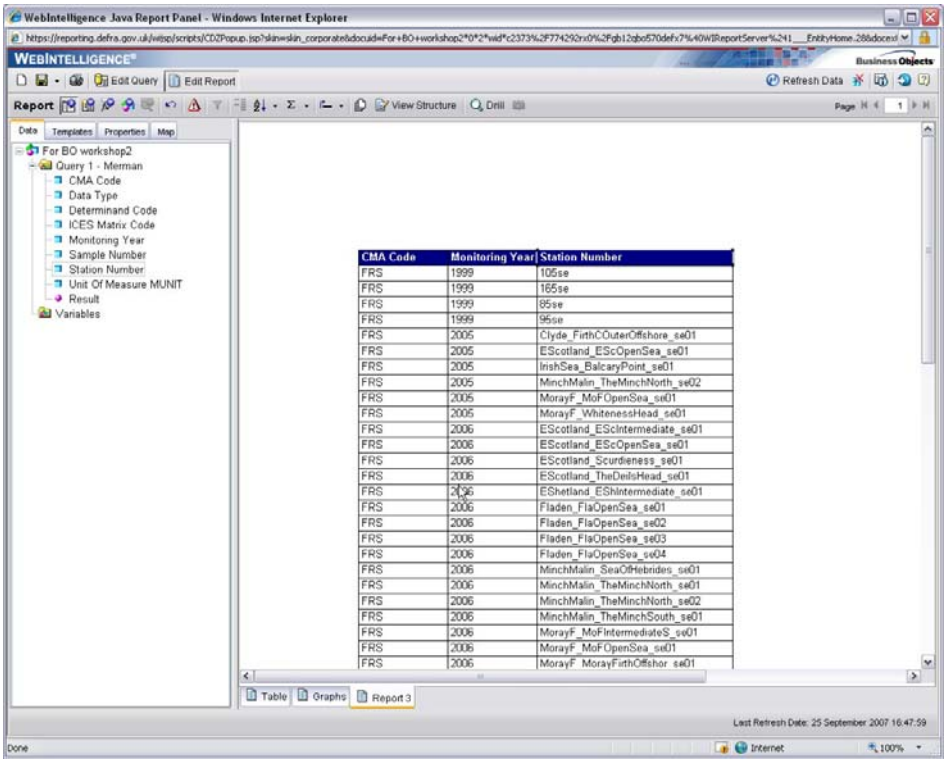
1. Create a blank report by right-clicking the Report tab at the bottom of the page, and **Insert Report**
2. Under the Data tab, drag across the 'CMA Code'.



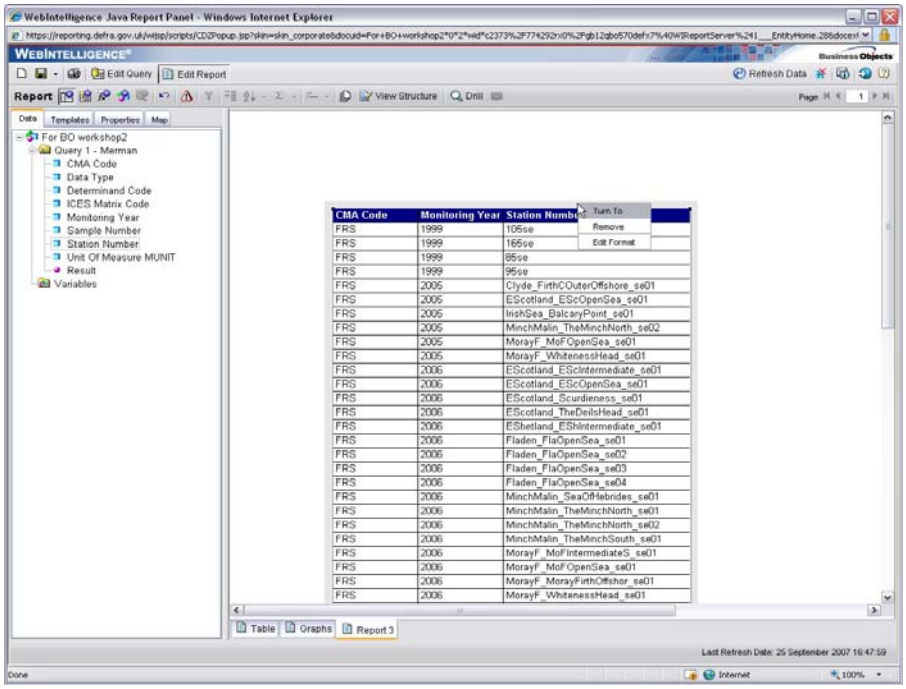
3. Next pick up the 'Monitoring Year' and Drag it across so that it hovers on, but to the right-hand side, of the 'CMA Code' Cell.



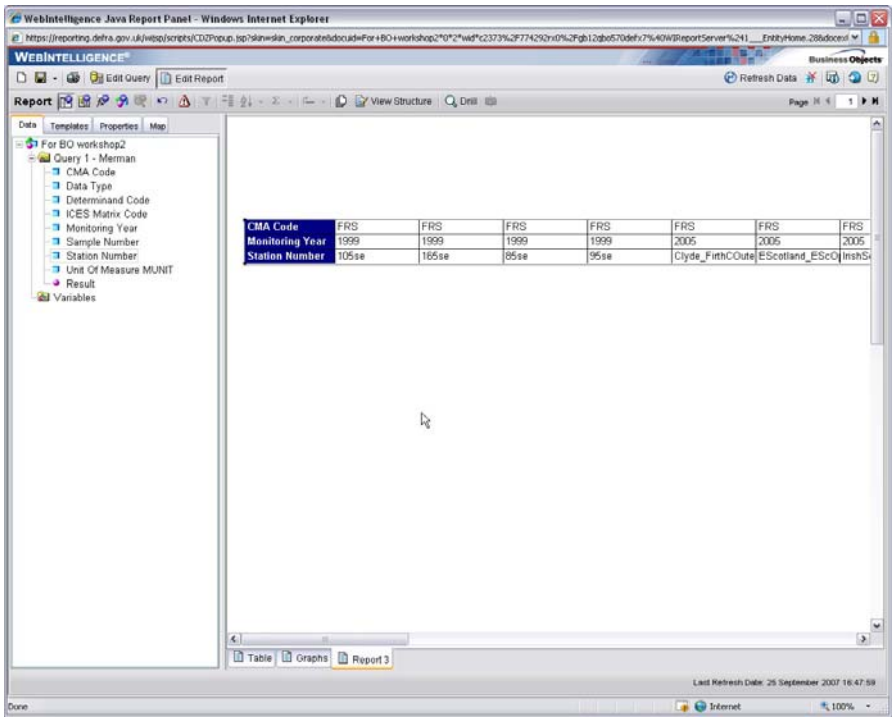
4. Finally pick up the ‘Station Number’ and drag it across so that it hovers on but to the right-hand side of the ‘Monitoring Year’ cell.



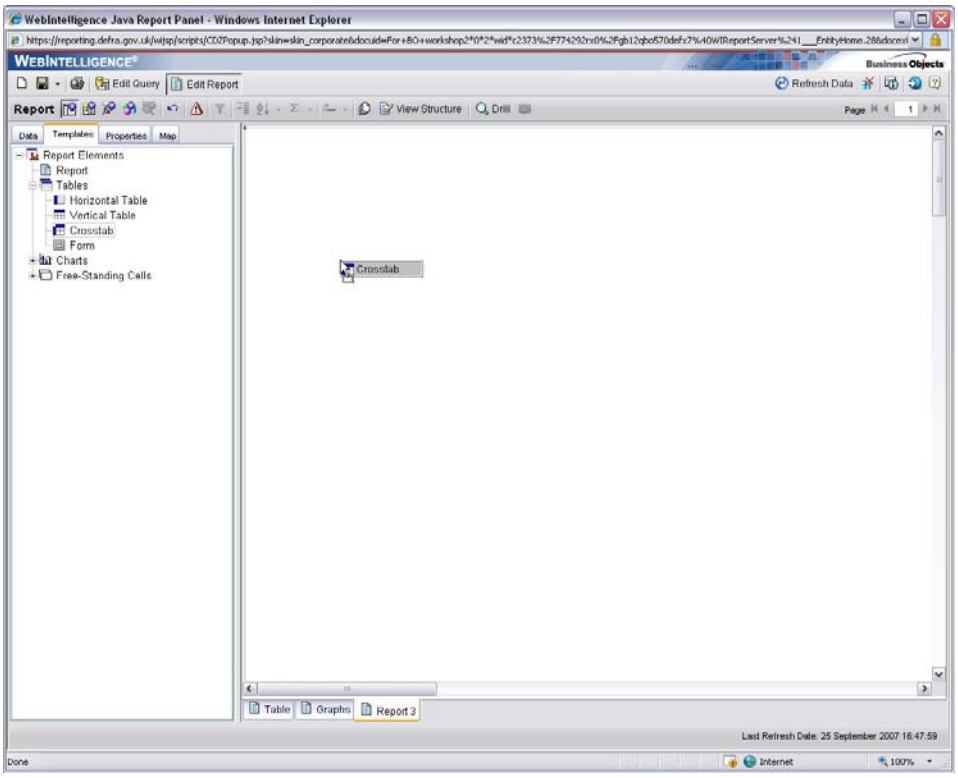
5. The table is built up in this fashion.
6. Move the cursor so that it hovers on the edge of the Table. A blue-grey shadow should appear.
7. Right-click and select **Turn to.**



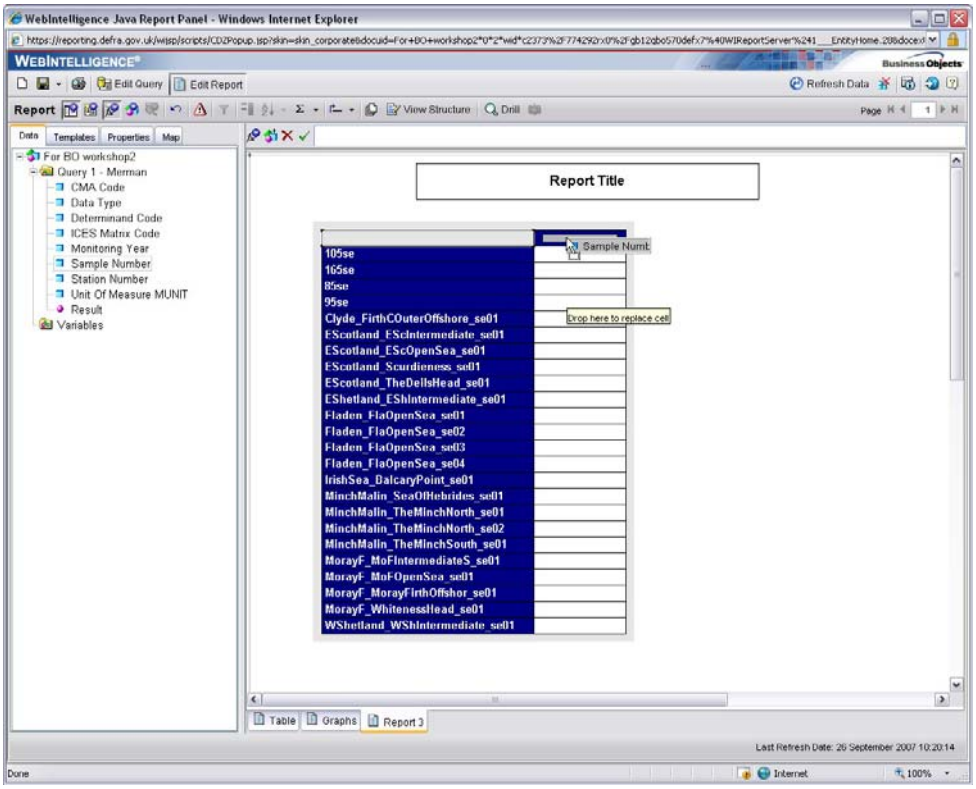
8. Select Horizontal Table.



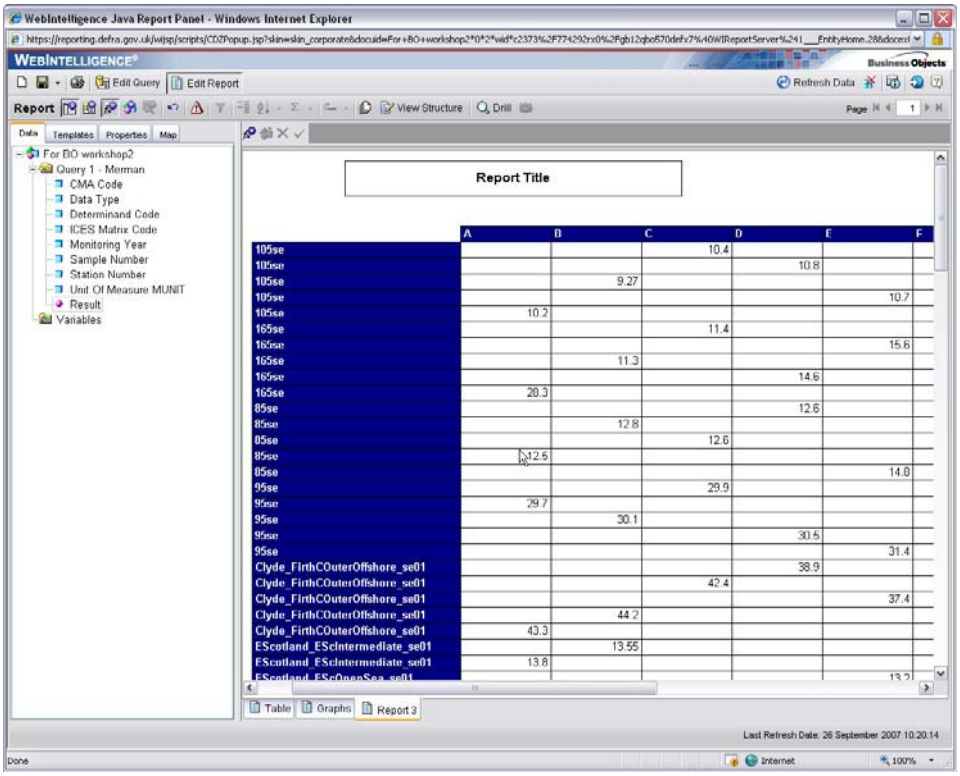
9. Alternatively you can use the template function.
10. Click the outside of the table and **Remove.**
11. Go to the **Templates tab.**
12. Click on the + sign next to table.
13. Click and drag the **Crosstab** option onto the blank reporting space.



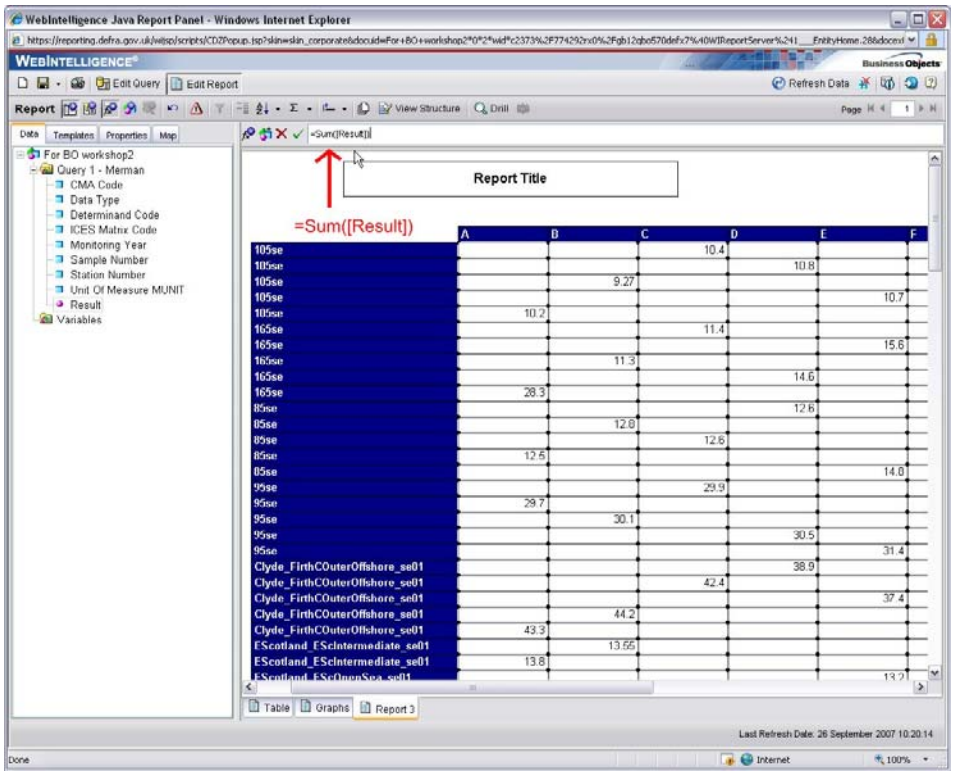
14. Add Objects to the table by clicking and dragging across from the **Data tab**
    a. Add ‘Station Number’ by dragging it over the row header in the crosstab table
    b. Add ‘Sample Number’ by dragging it over the column header in the crosstab table



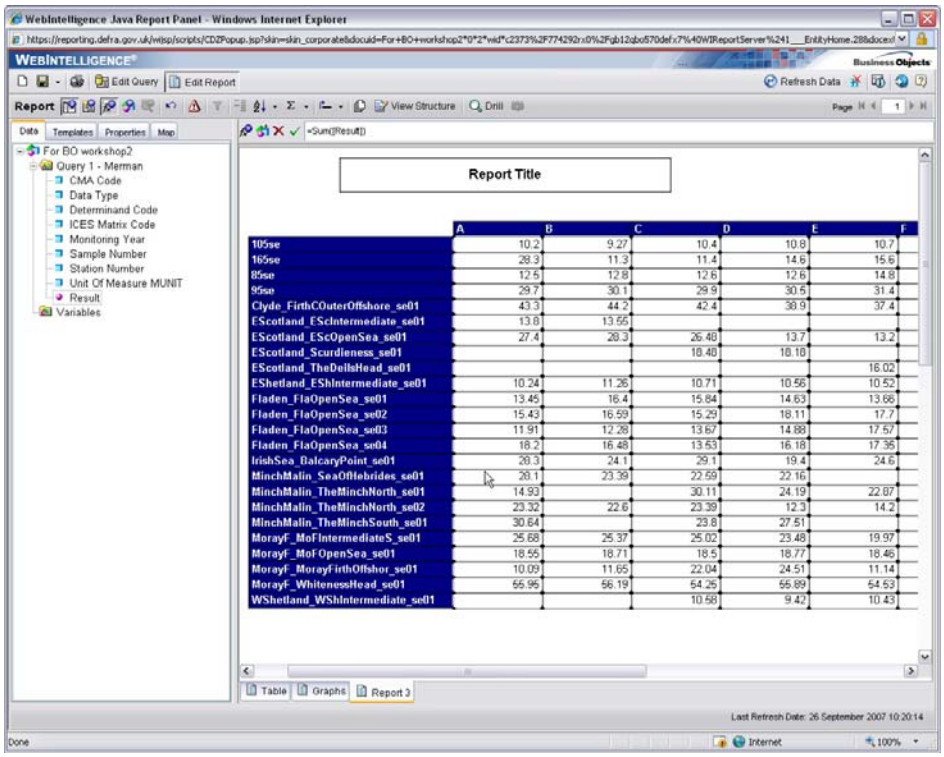
c. Add ‘Result’ by dragging it over a cell body of the crosstab table.



15. This table isn't as user-friendly as it could be. The results haven't been aggregated, so each result for a sample appears on a new line.
16. If we apply a sum to the cell body, we can resolve this.
17. Double click on a cell body. The formula header will appear above.
18. Type the following : **=Sum([Result])** and enter.



19. This will aggregate the results per station so that there is only one line per station.



20. Save the table as '**Crosstab**'

9.2 Deleting a Table

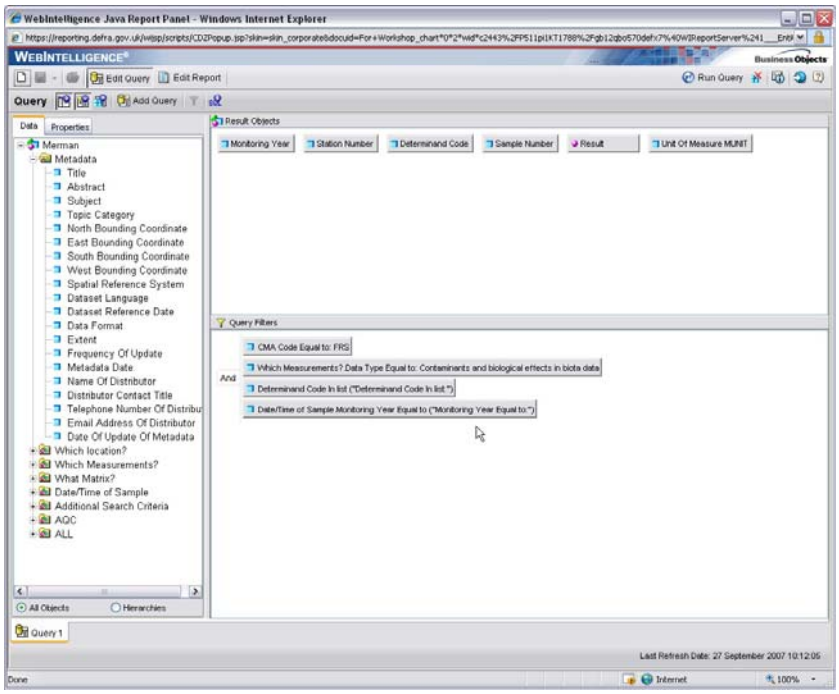
1. To delete a table, click on the outside of it so that the blue-grey border appears.
2. Right-click and select **Remove.**
3. Alternatively, you can drag the blue-grey border to the left-hand side of the screen and drop it off the page.

10 Presenting Data in Charts

- Web Intelligence offers standard chart formats to graphically display your information.
- The five basic charts are: bar, line, are, pie and radar, polar or scatter charts.
- Unfortunately charts are a little limited in their functionality – sometimes it may be more effective to save the report in Excel and format a chart from here. In future upgrades functionality should improve.

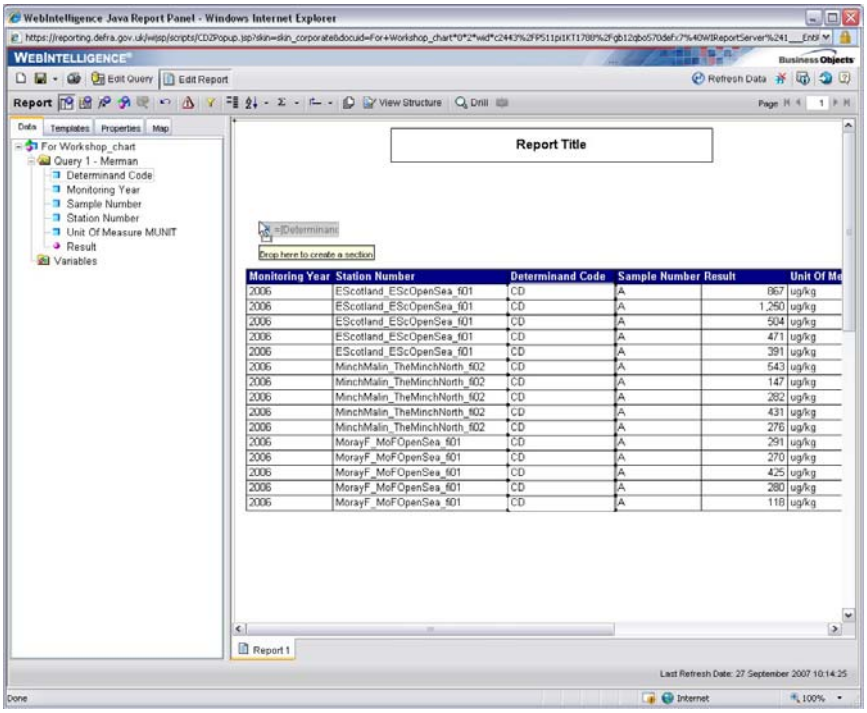
10.1 Creating a Chart

1. Open a new query from the Edit Query page – click on **New Document** in the report toolbar
2. Select the following objects to go in the **Result Objects** Pane:
   - 'Monitoring Year', 'Station number', 'Determinand Code', 'Sample Number', 'Sub sample Number', 'Result', 'Unit Of Measurement'.
3. Select the following filter specifications:
   - CMA Code **Equal to** 'Your CMA'
   - Data Type **Equal to** 'Biota'
   - Determinand Code **In List – Add 'CD'**
   - Monitoring Year – Select **Prompt, Only from List of Values**

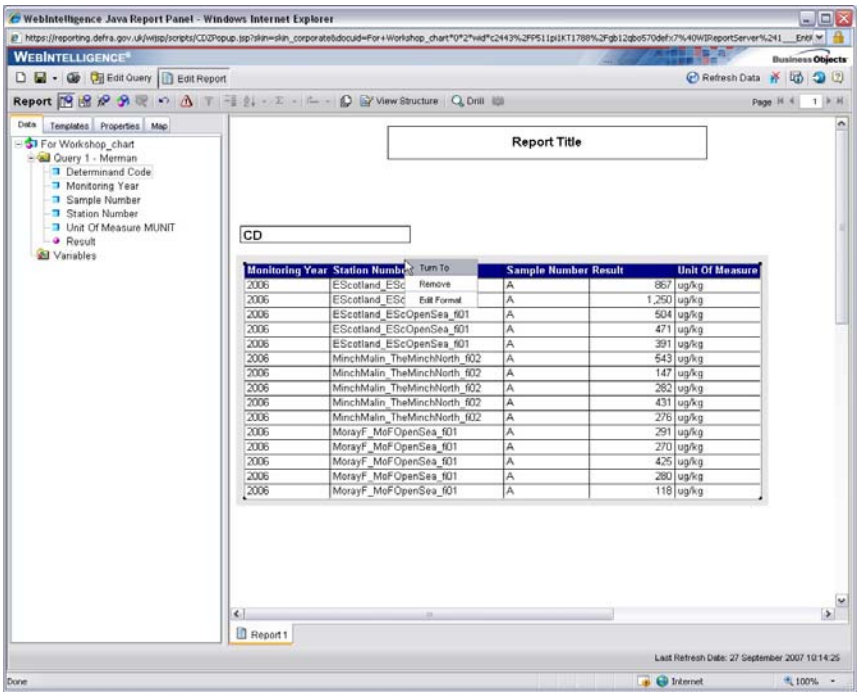


4. Run Query

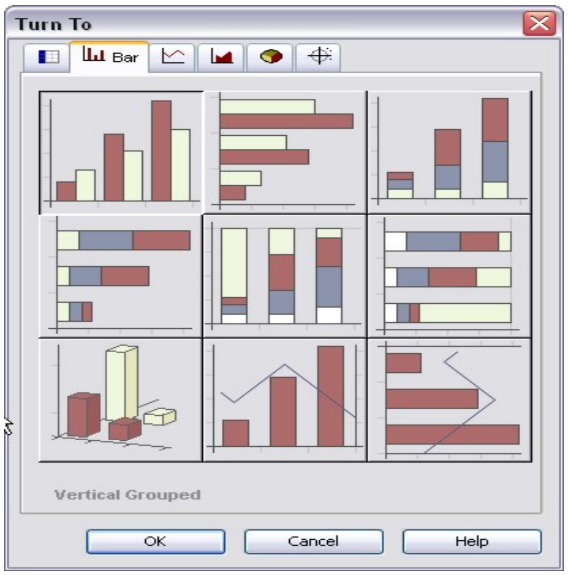
5. Select '**CD'** for Determinand.
6. Select **2006** for 'Monitoring Year'.
7. Take out the Determinand Code to create a Section with the Determinand as a header.



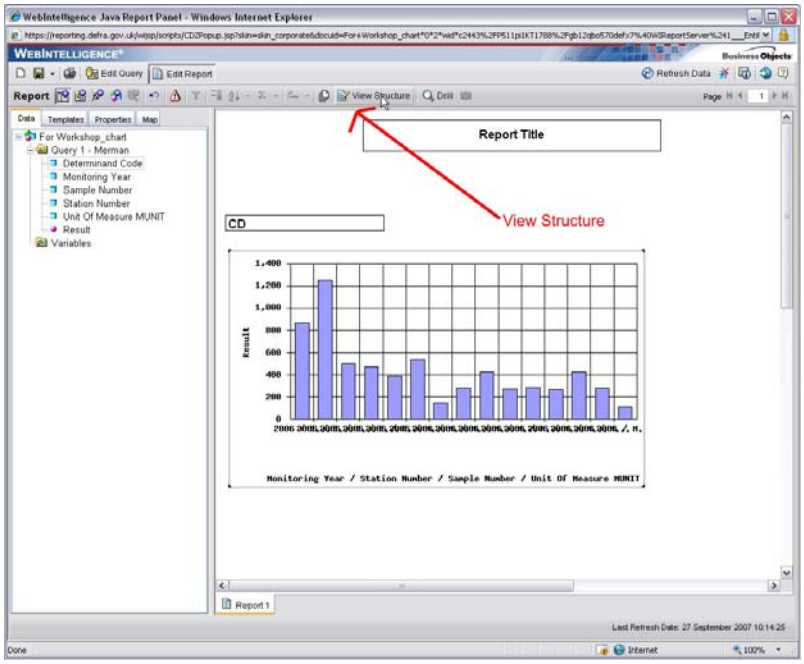
8. Click on the edge of the table so that the grey-blue shadow appears.

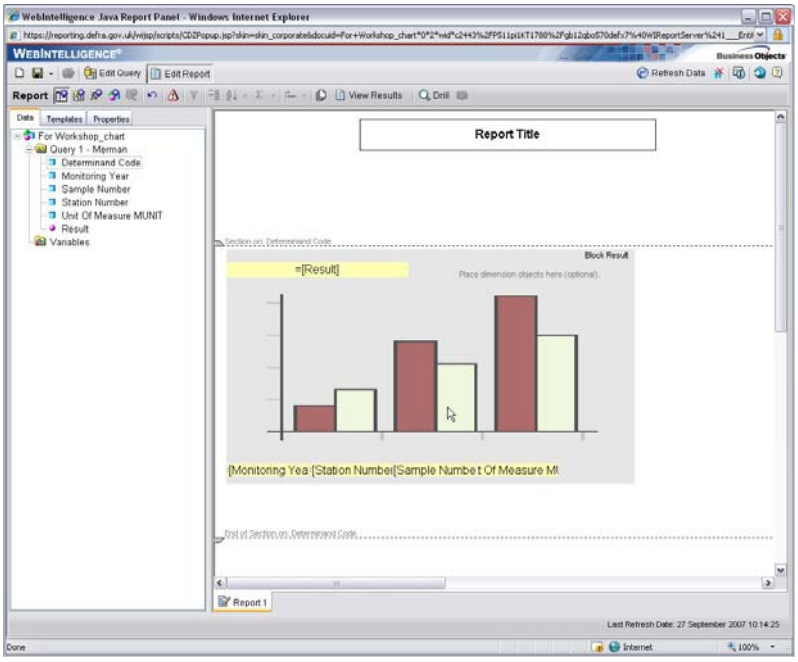


9. Right-click and select **Turn To.**
10. Select **Vertical Grouped.**

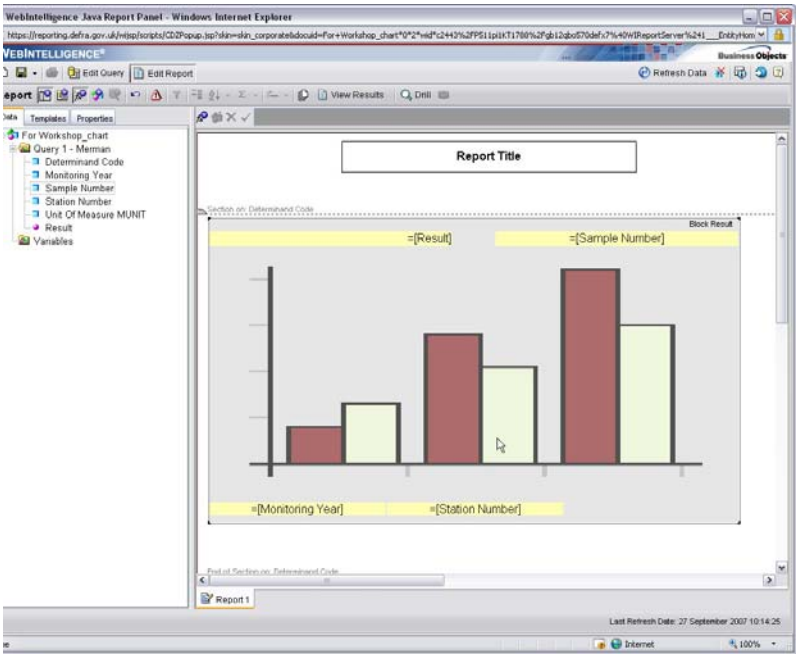


11. Arrange position on chart using the **View Structure** Tab.

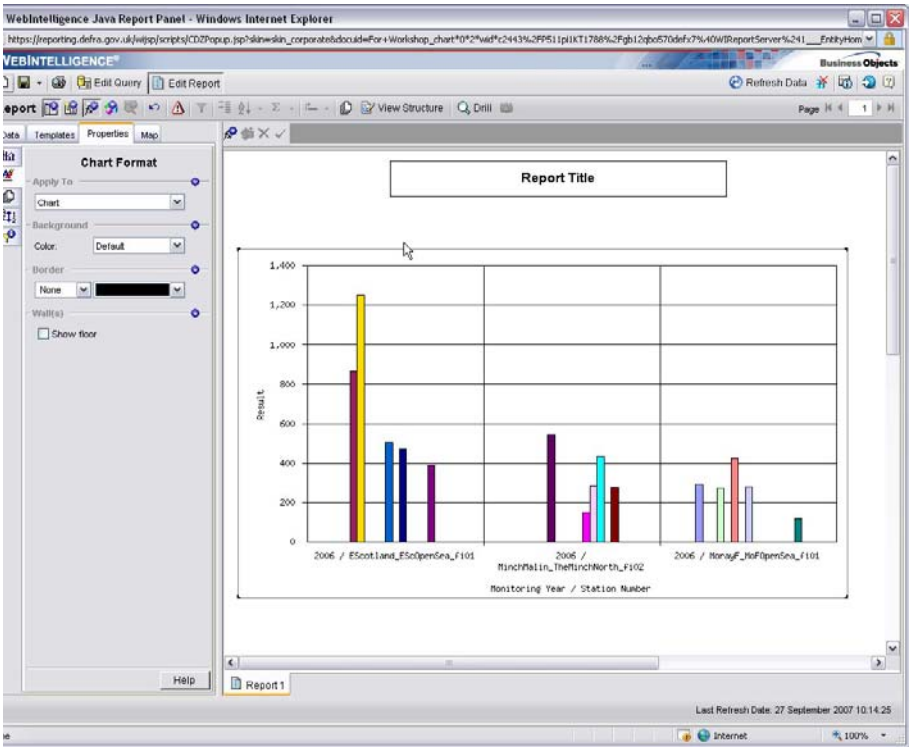




12. You can move the position of objects. Initially the graph wasn't particularly helpful with its layout. We can adjust the layout so that the replicates from each station are grouped together along the X-axis.
13. Firstly, we don't need the 'Unit of Measurement' along the X-axis. We can add it to the Y-axis Label later. Click on the box and press delete.
14. Do the same with the Determinand Code. We can add it to the table. Click on the box and press delete.
15. Click and drag the 'Sample Number' object, followed by the 'Sub sample Number', up to the top right hand corner, where it says '**Place dimension objects here (optional)**'. This will appear in the legend.



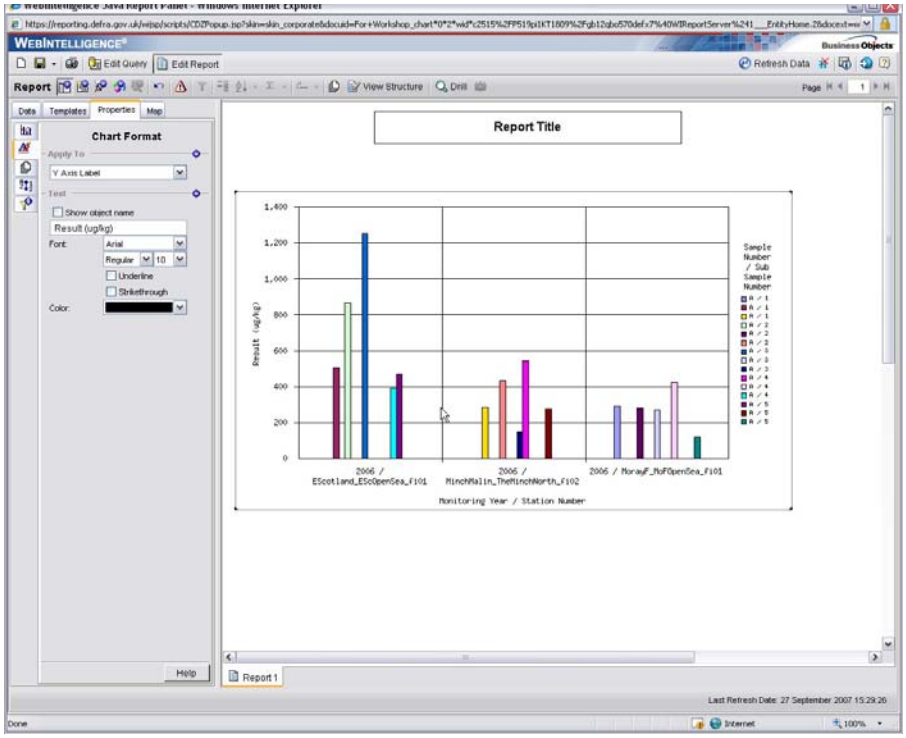
16. Click **View Results**



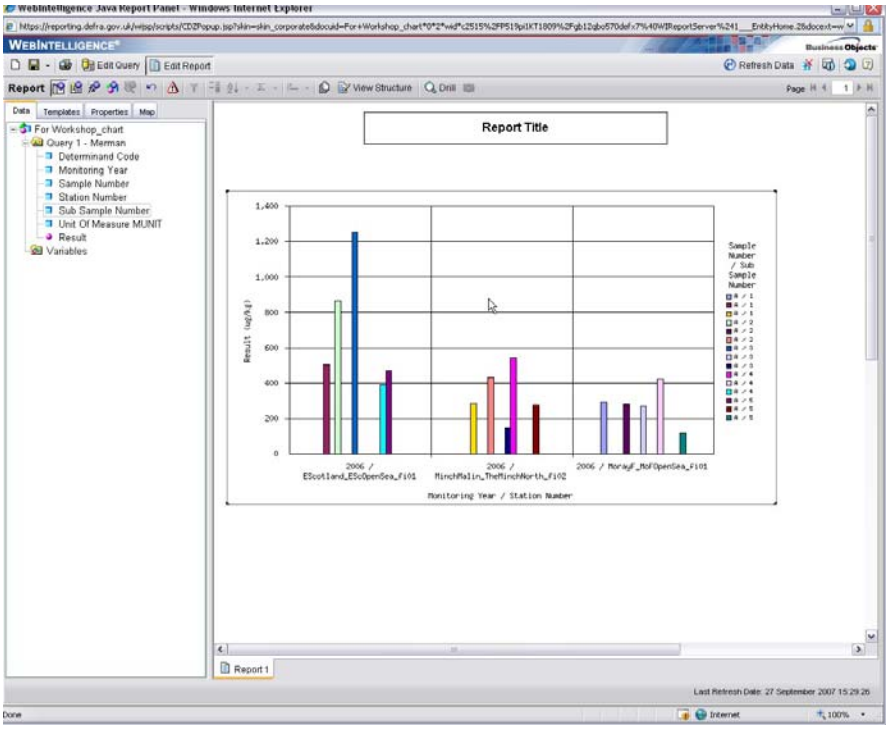
17. You should see something like this. *This is where this version of Business Objects falls down. As you can see there are inconsistent gaps between the bars and the colours are random and unfortunately cannot be changed.*

18. Click somewhere within the chart.

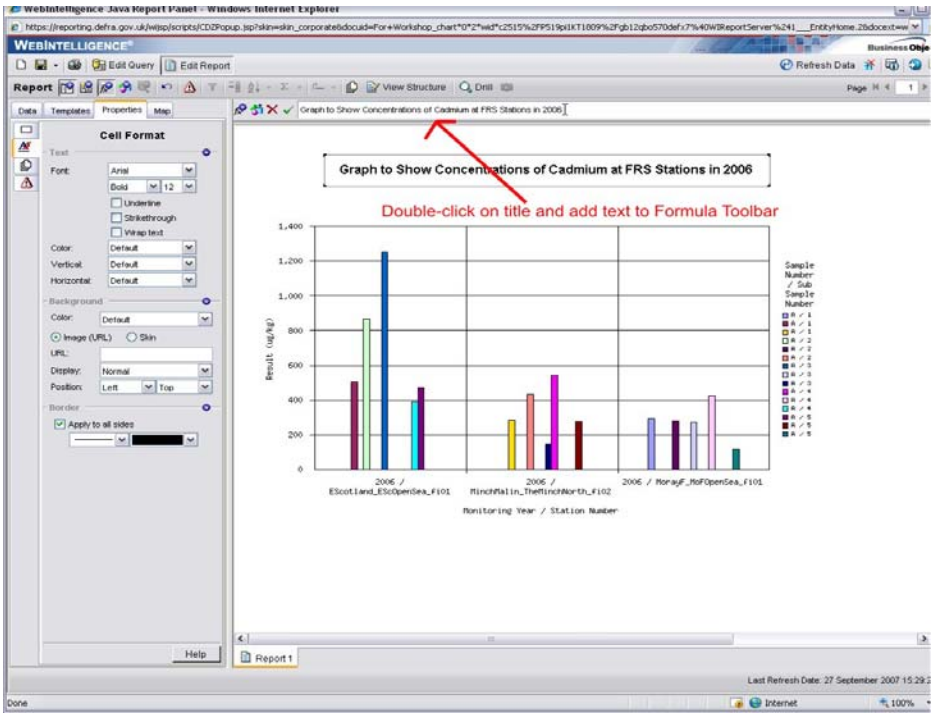
19. Under the properties tab on the left-hand side, you can format the chart.
20. To add the 'Units of Measurement', under **chart format**, click on **Apply to Y axis label**.



21. Under the text heading, de-select the '**Show object name**' option and type in 'Result (µg/kg). Press enter.
22. Click on Chart Properties and under **Display**, select **Axis Legend**



23. Format other aspects of the chart by highlighting the chart by either right-clicking and selecting **Edit format** or using the **Properties tab** on the left hand side of the page.
24. Add a Chart Title: Double click the Report Title Text.
25. In the formula toolbar above, type ‘Concentrations of CD at (Your CMA) Stations in 2006’



- While this title may be appropriate for this particular chart, if you were to refresh the data and choose another determinand or year, it wouldn't be.
- We need to formulate a Title that takes into account the possibility that the User can change the query using the prompt facility, built into the query.

10.2 To create the formula to capture the response to the prompt

- You will create a formula that will display in the report title the value of the object selected in the prompt.

1. Click the **Report Title cell.**
2. Click **Formula editor** in the Formula Toolbar.
3. In this editor, you define the characteristics of a formula, by selecting objects, functions and operators from the drop-down lists in the Editor.

4. Type (**=**) to start the formula definition.

5. Type in between quotes the generic text you want to display in the title.
   - Example : "Concentrations of "

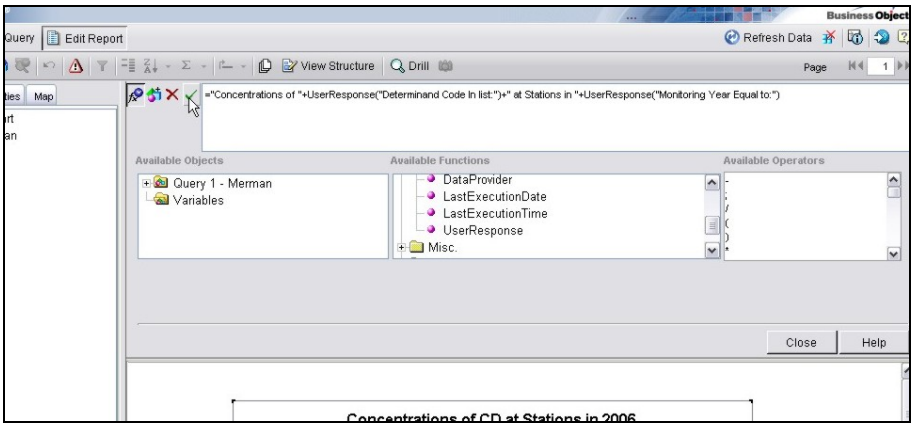
6. Under Available Operators, select the operator to continue the formula – in this case we want to add something onto the text so we use the (**+**) sign.

7. Under **Available Functions** expand the **Data Provider** Folder.

8. From **Data Provider**, select **User Response**. The User Response function relates to the User's response to the Query Prompt when they ran the query.

9. Within the brackets, type in between quotes the filter prompt EXACTLY as it appears in the Query filters pane
   - Example : "Determinand Code In list:"

   (This is case-sensitive so the text needs to be exact.)

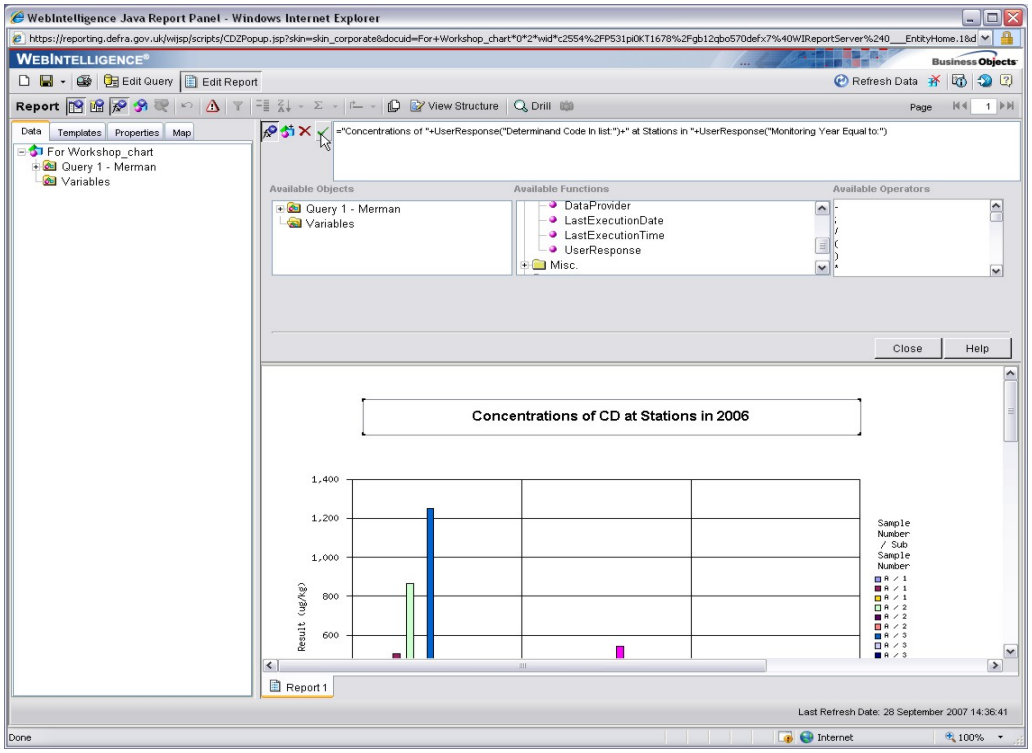


10. To add more text to the title add a **+** sign after the brackets and add what you want, again between quotes.
    - Example : " at Stations in " (Be aware of the spaces before and after the text)

11. To incorporate the 'Monitoring Year' you need to add in another User Response to the Title Formula. Under **Available Operators**, select the operator to continue the formula – in this case we want to add something onto the text so we use the (**+**) sign

12. Under **Available Functions** expand the **Data Provider** Folder and select **User Response**

13. With the brackets type in between the quotes the filter prompt EXACTLY as it appears in the Query filters pane
    - Example : "Monitoring Year Equal to:"



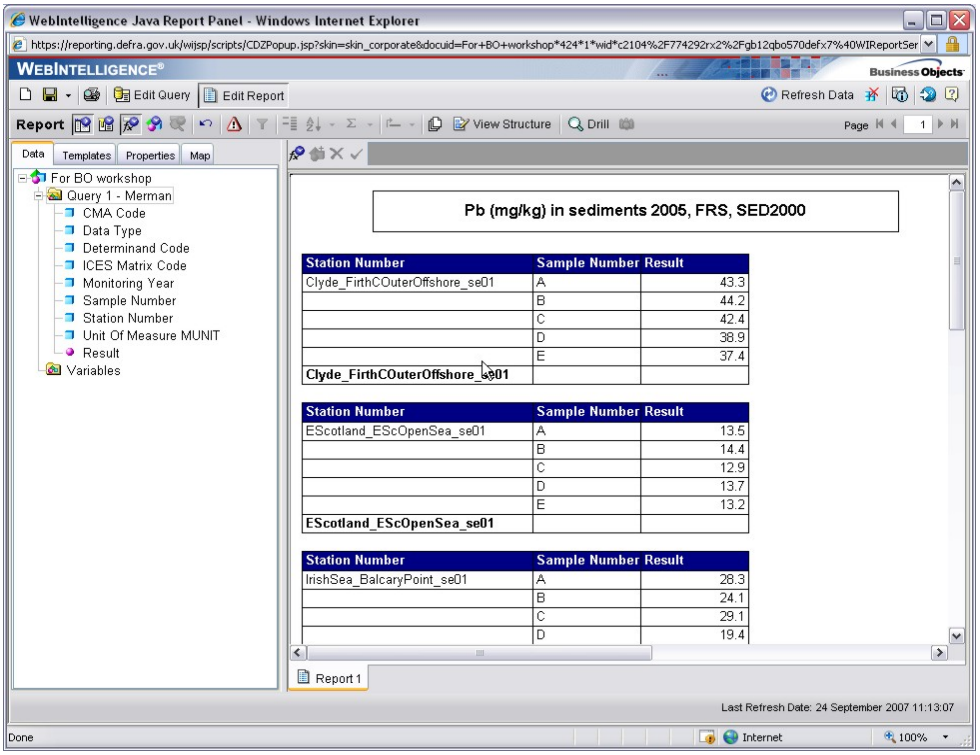
14. Click the green tick to validate the formula. You will get an error message if the formula doesn't make sense. Often this is just due to a typing error in the formula.
15. If you refresh the data and choose a different determinand and year, this should be reflected in the title.

10.3 EXERCISE: Formatting the Chat

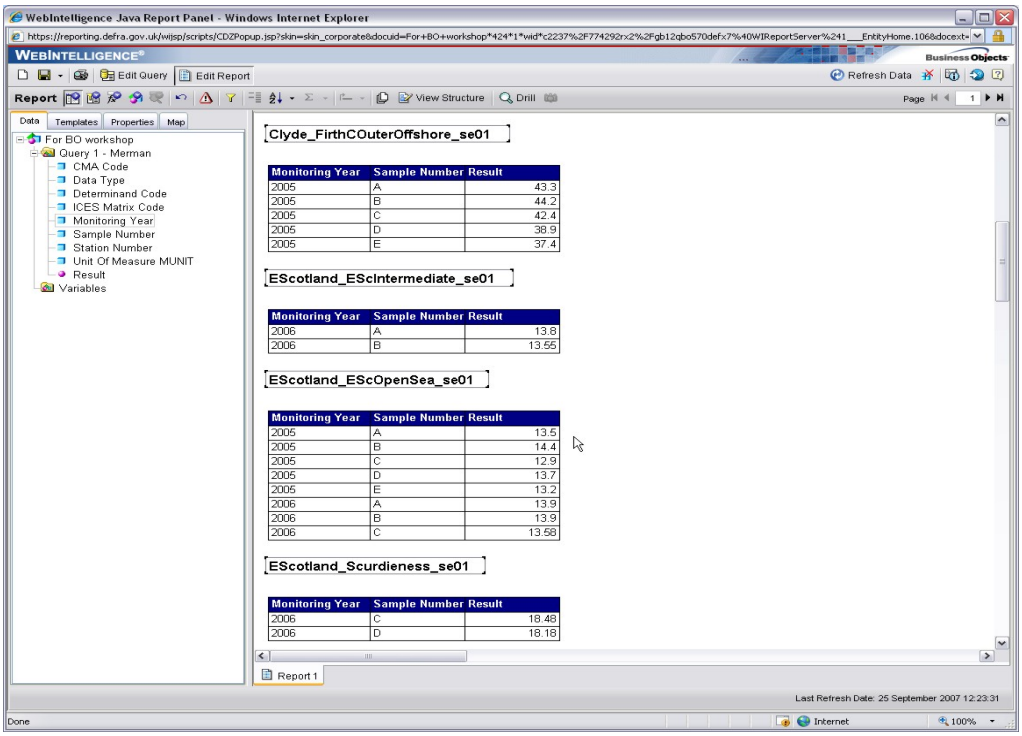
1. Underline the Title and remove the border.
2. Change the graph so that it becomes a horizontal bar chart.
3. Add **Hg** to the Query as well (Use the In List Function when you re-run the query)
4. Add Determinand to the Legend (Use the **View Structure** to do this simply)
5. Save Document as '**Charts'.**

11 Organising a Report into Sections

- You cab subgroup data in a block using the break function as illustrated below. We have already seen this function.



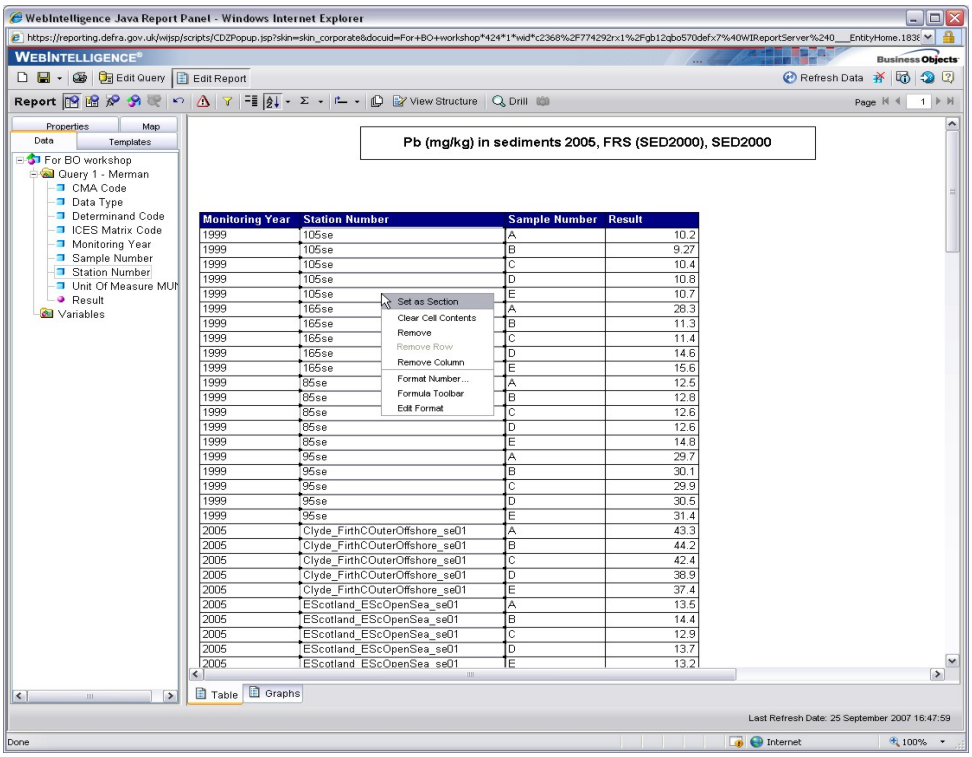
- You can **also** use 'SECTIONING' to subgroup data. The obvious difference is that the sub-grouped value appears as a header outside the block instead if remaining within the block as seen below:



- However, there is a more important difference. 'Sectioning' subgroups the entire report. A section is created for each subgroup in which you can manipulate the data, creating multiple objects (e.g. graphs) all stemming from the same sectioned level.
- Any edits made to one section will be repeated to each sectioned group in the report.

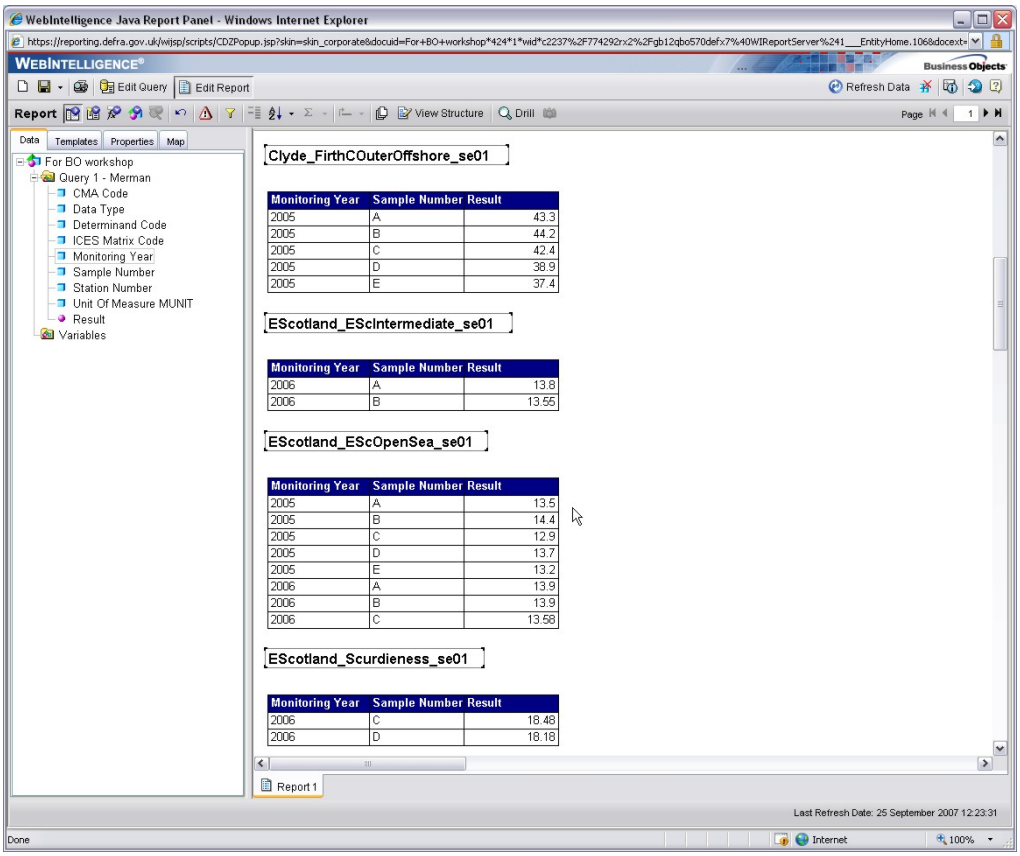
11.1 To Create a Section

1. Open '**Pb_in_Sediment'** report and click **Edit Report**
2. Sort by 'Monitoring Year', 'Station number', 'Sample number', 'Result'.
3. We want to group the data by 'Station Number'. Click on the column. The column is now highlighted.
4. Right-click on the highlighted column – a drop-down menu displays.



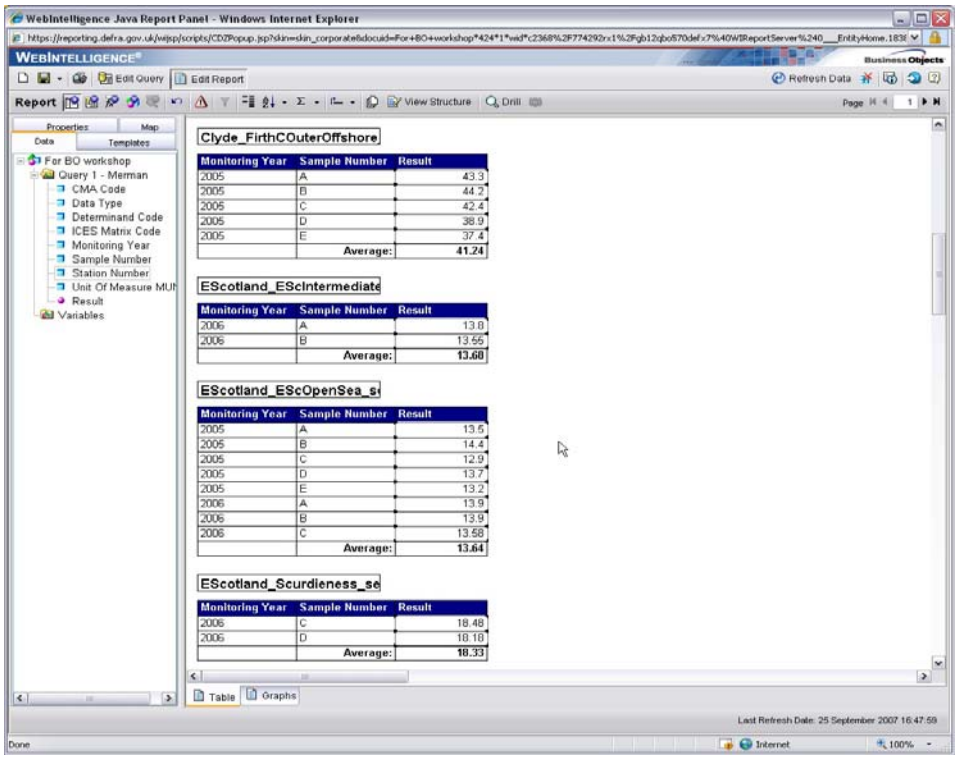
5. Select **Set as Section** (Or as an alternative you can drag a cell from the column up to hover above the top of the table and drop it)

6. The column selected is defined as the variable used to split the table into sections. Each value of the variable (e.g. ‘Station Name’) is displayed as a header, followed by the data concerning the column.

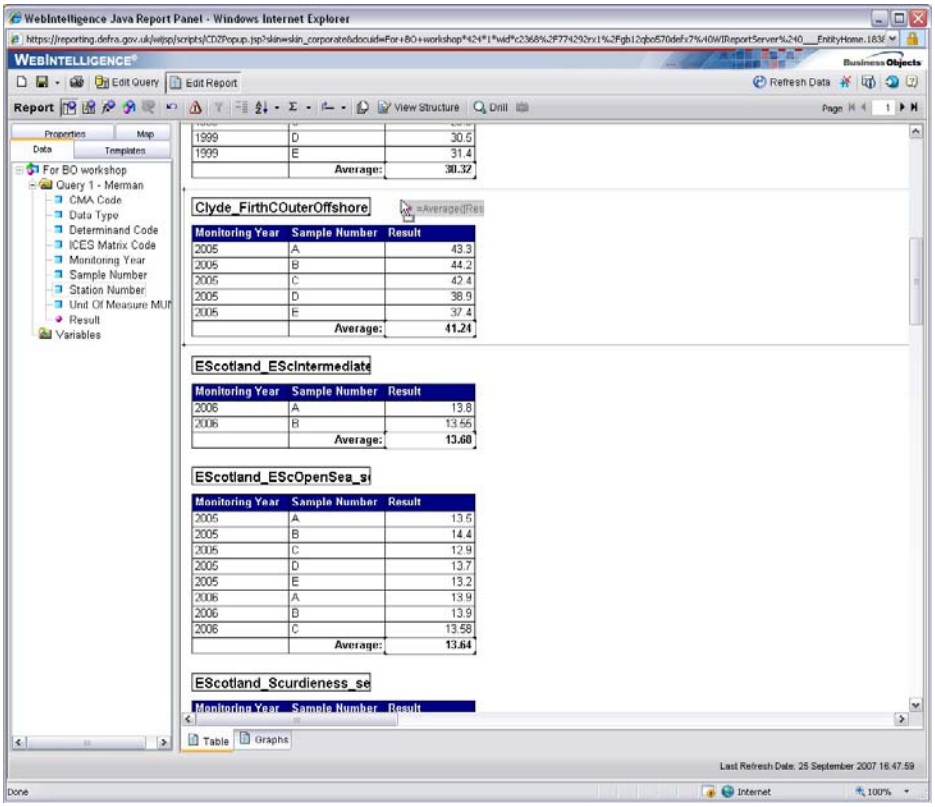


11.2 To Display an aggregate

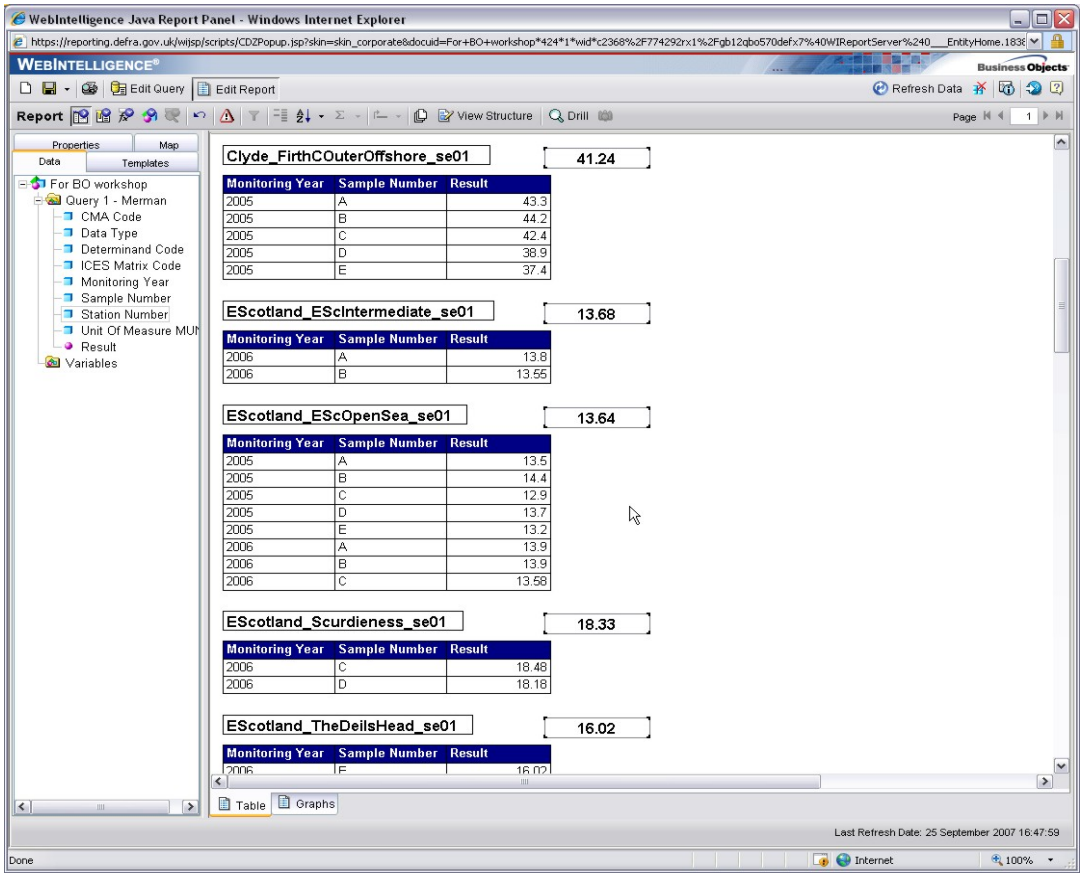
1. Continue from the previous table.
2. Click the Result where you want to insert a calculation.
3. From the Report Toolbar, click Insert Average.
4. The average is calculated and inserted in a new row.



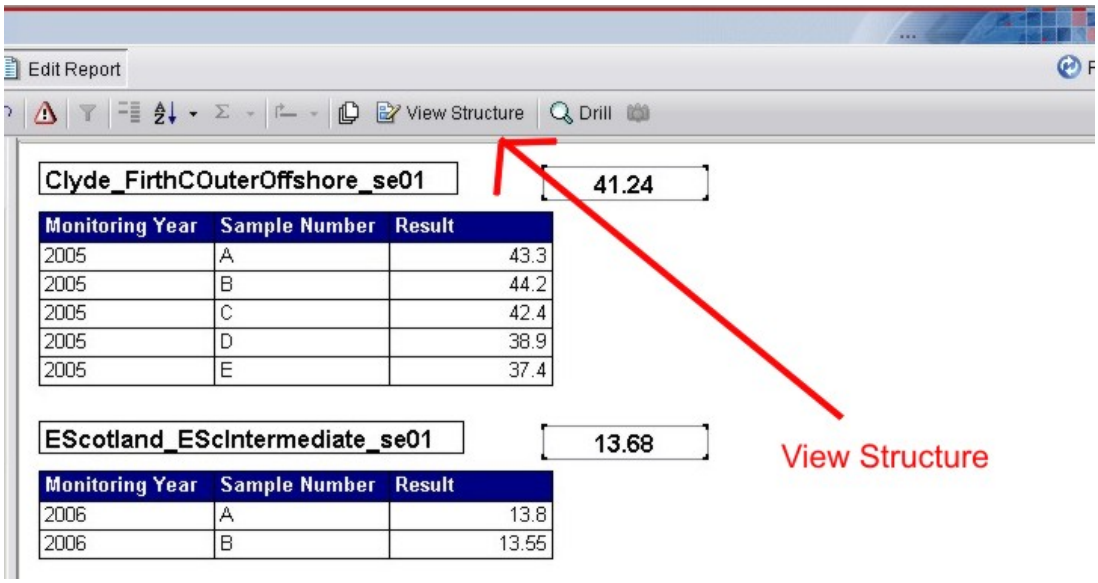
5. Click on one of the Average rows and drag the cell with your mouse until it is level with the section heading, as shown below:



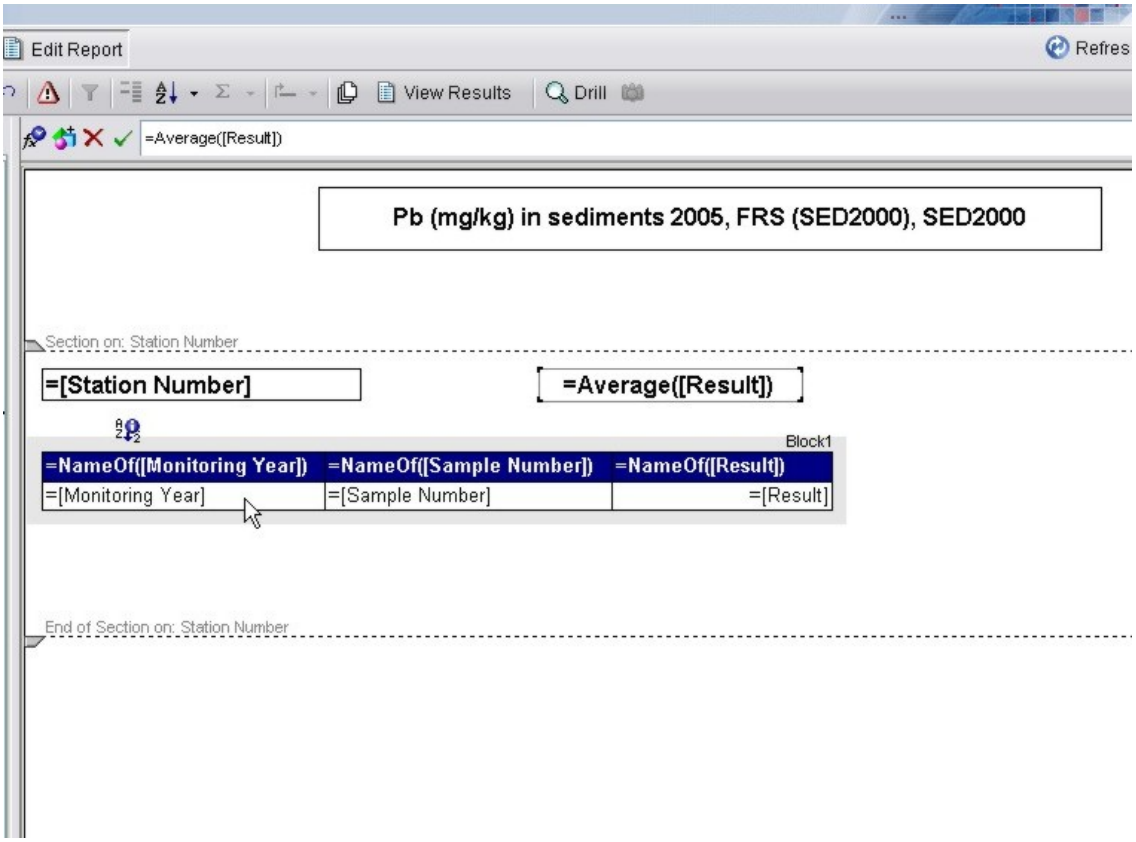
6. Release the mouse button. The section average appears next to the section header.



7. **TIP**: It can sometimes be easier to rearrange section sizes and placement of objects using the **View Structure** Function.



8. This mode displays the structure of the report and definition of data filters, sorts and calculations. It is also easier to move objects around and get a better idea of placements in this mode.



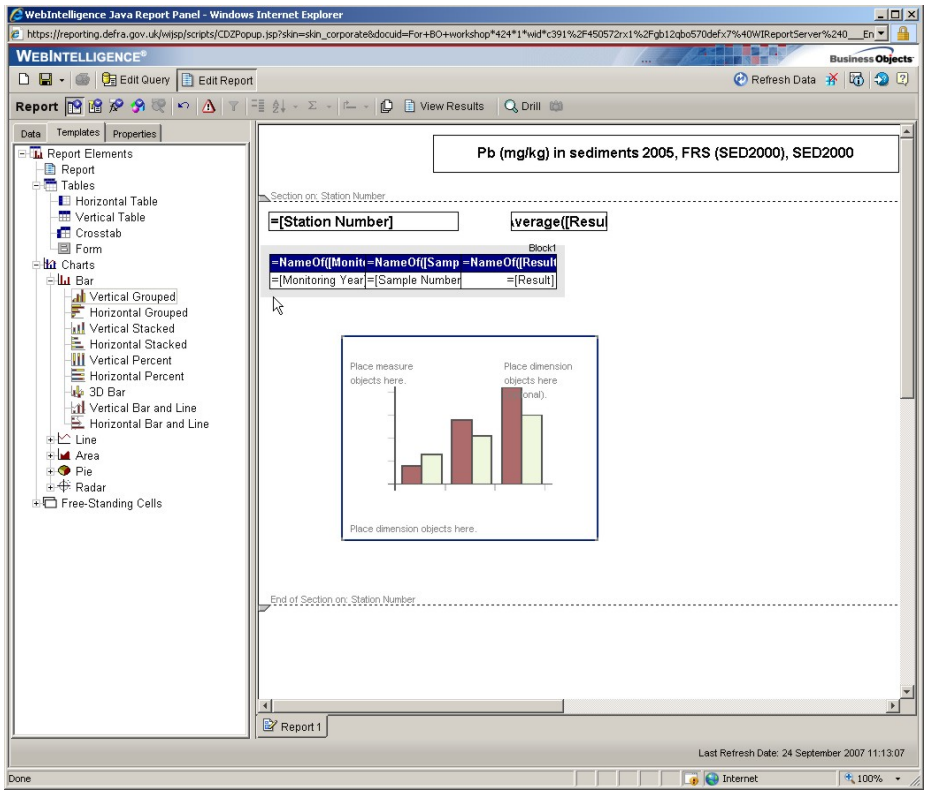
9. Click **View Results** to see what the changes you've made look like in the actual report.

11.3 To insert a block in each section

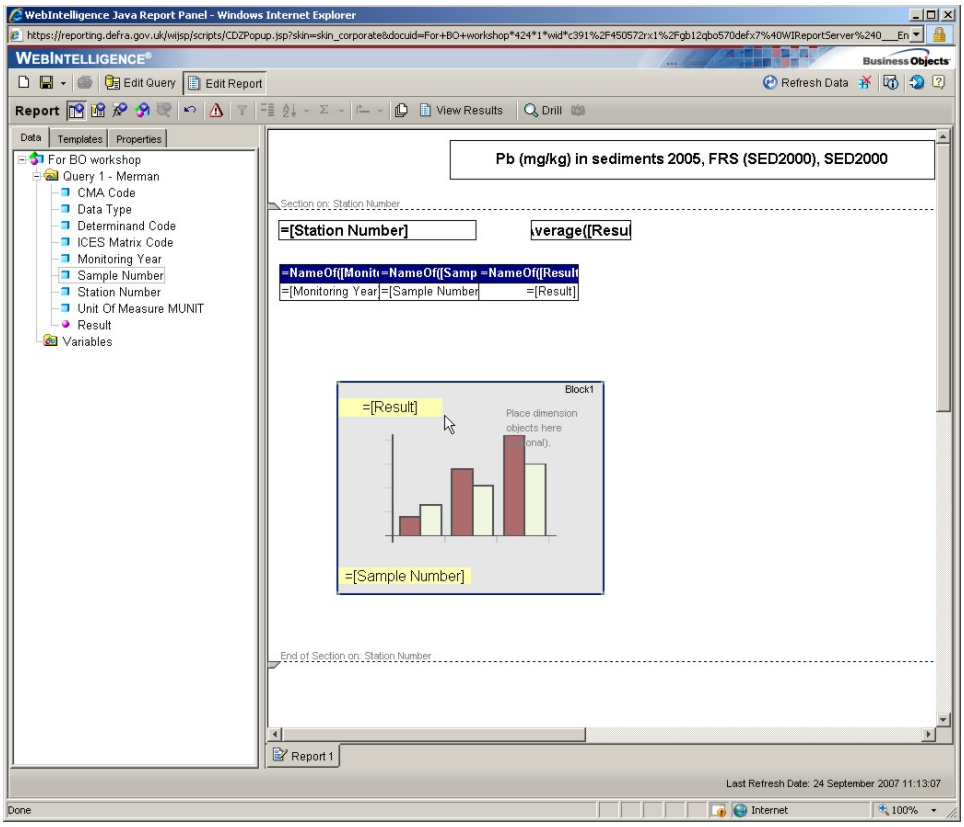
Continue using the report from the previous exercise

10. Click **Templates**
11. Select the chart type you want to use
    - Example : **Bar > Vertical Grouped**
12. Drag the template to the document zone.

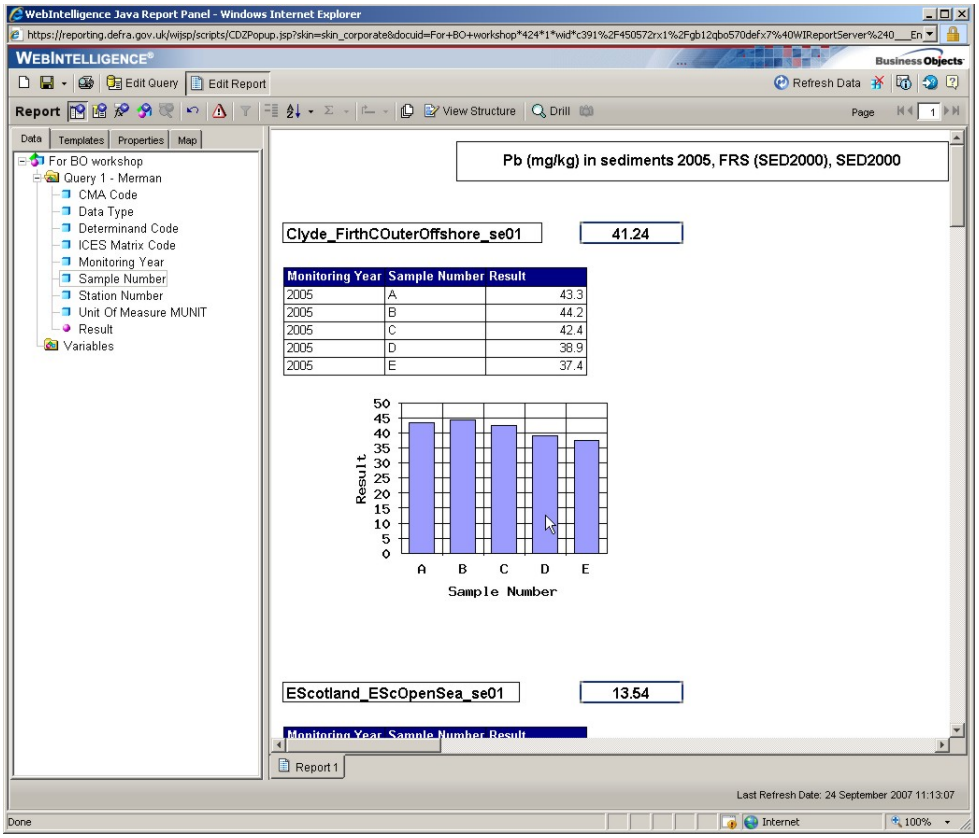
Note: The panel automatically changes to **View Structure** mode displaying the structure of the report. The size of the section will automatically increase according to where you place the object.



13. Click the **Data** tab
14. Drag a **measure** and a **dimension** object over the tool tips provided in the template
    - Example: ‘Result’ and ‘Sample Number’
    - The measure and dimension objects are positioned within the template.



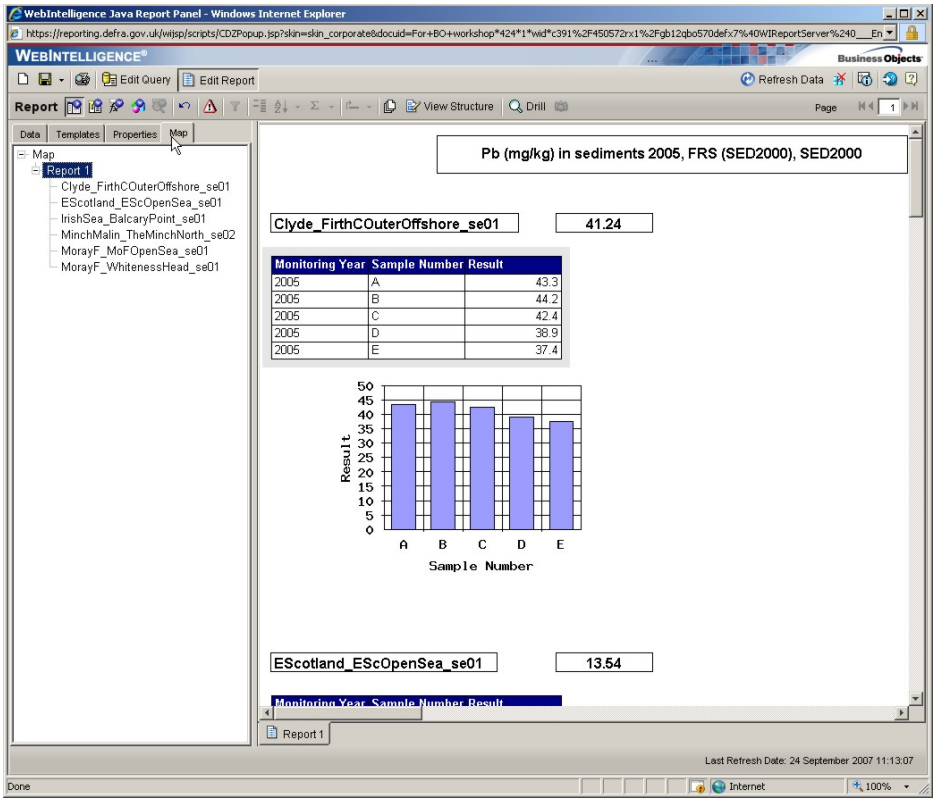
15. From the Report Toolbar, click **View Results**
16. The document zone appears in **View Results** mode, and the block is inserted into each section showing the values specified.



17. Save document as' **Sections'**

11.4 Navigating from section to section

18. From the Report Manager, click **Map.**
19. The **Map** tab displays all the reports and sections contained in this document. In this example below, there is only a single report.
20. Expand a report folder.



21. Click on the section you want to navigate to.
22. The document zone scrolls down to display the section selected within the report.

You can use the Map table in the Report Manager to jump from one report to another, as well as navigating from section to section. This feature is very useful if you have a large document with multiple reports and, any sections to navigate through.

TIP: It is recommended to use the View Structure mode to display the report structure when deleting a section

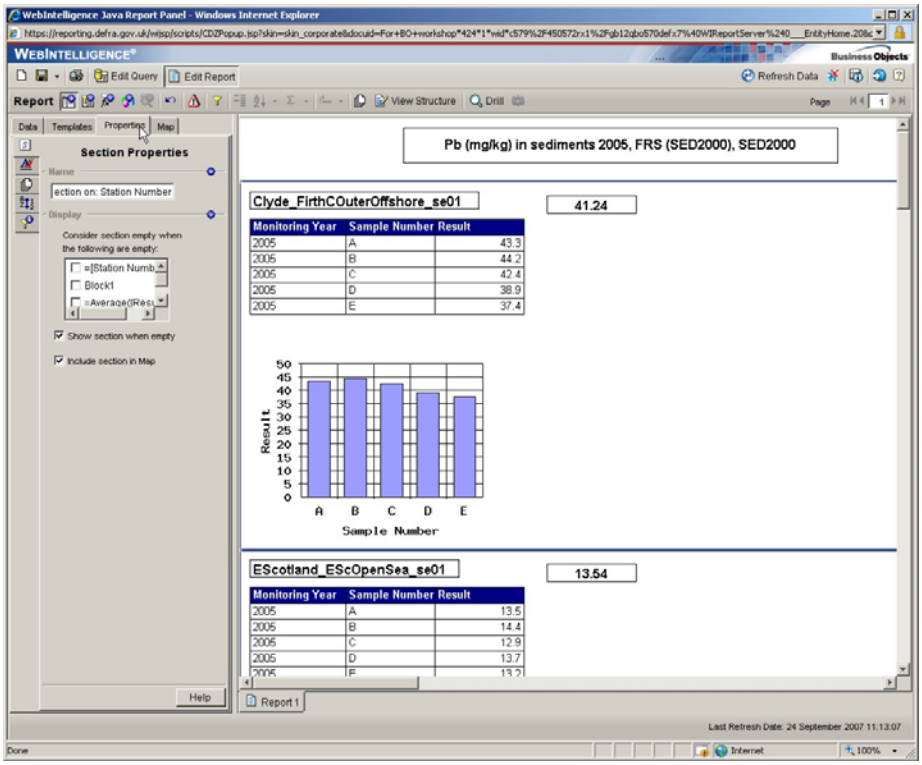
11.5 Deleting a section

1. In Edit Report Panel, click **View Structure**.
2. The section dividers show the beginning and end of the section.
3. Click the beginning or end divider of the section you want to remove.
4. Press the Delete Key.
5. Close without saving.

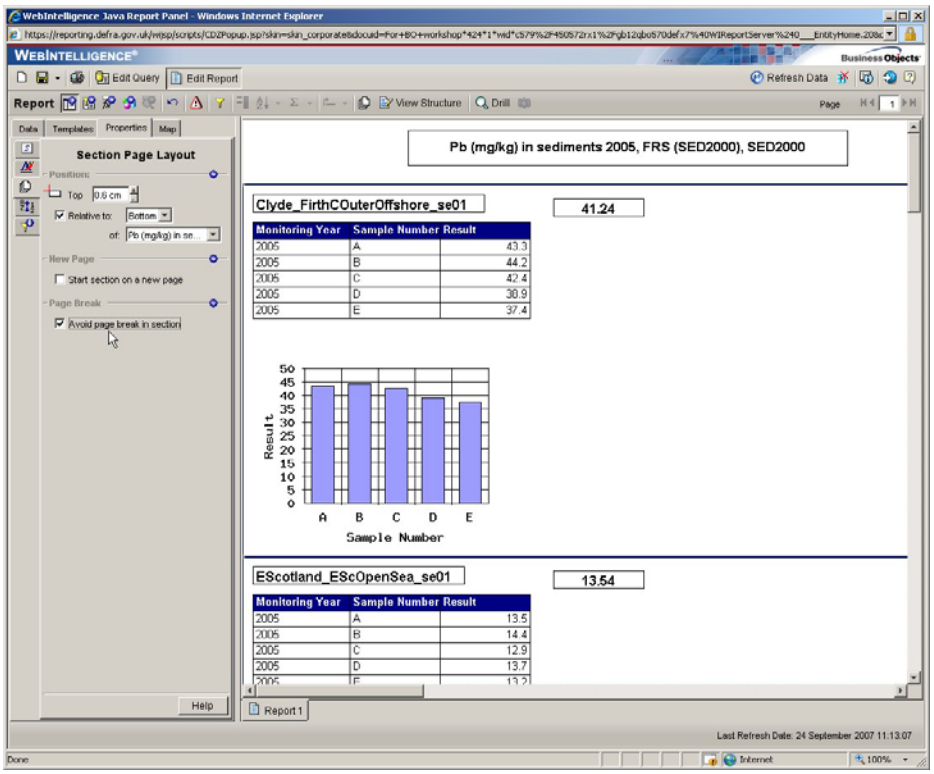
11.6 Modifying the default section properties

The Section Properties tab has five sub-tabs that you can use to change the default formatting of the selected section. You can access each of these five sub-tabs by clicking the little buttons that appear vertically on the left side of the Report Manager panel

1. Open '**Sections'** document.
2. Click just above the section header to select the section. A blue line appears above the header to indicate that the section is highlighted.



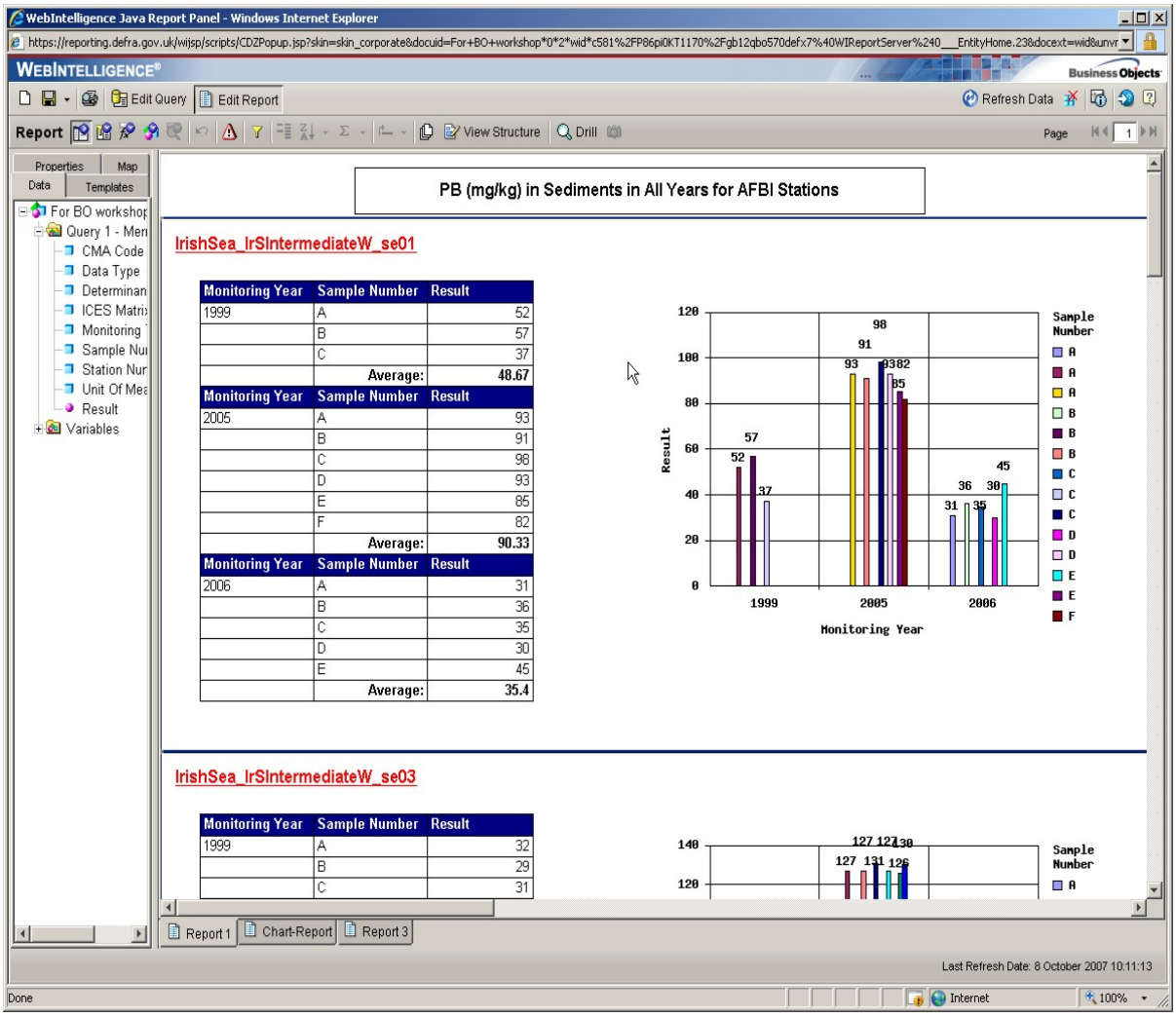
3. Click the **Properties** tab.
4. You can format the section using the Section Properties, Section Format, Section Page Layout, Sorts and Filters tabs.
5. Click the checkbox that specifies page breaks are avoided in a section.



6. Save the document (I.e. overwrite).

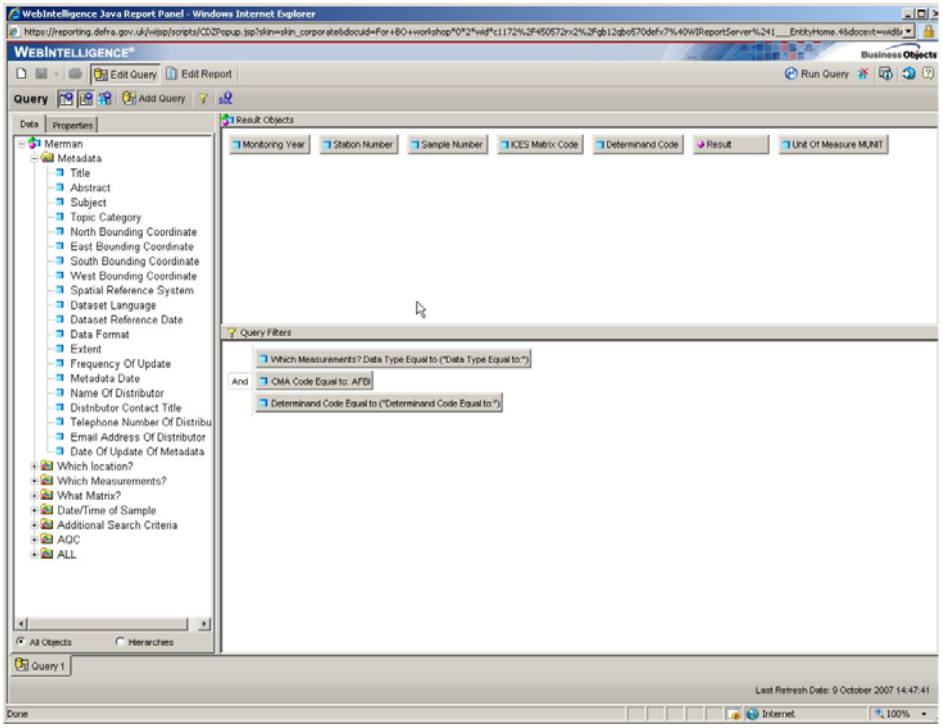
12 FINAL ACTIVITY: Creating and Formatting Reports

Starting a new query, we will attempt to create a report similar to the one pictured below:



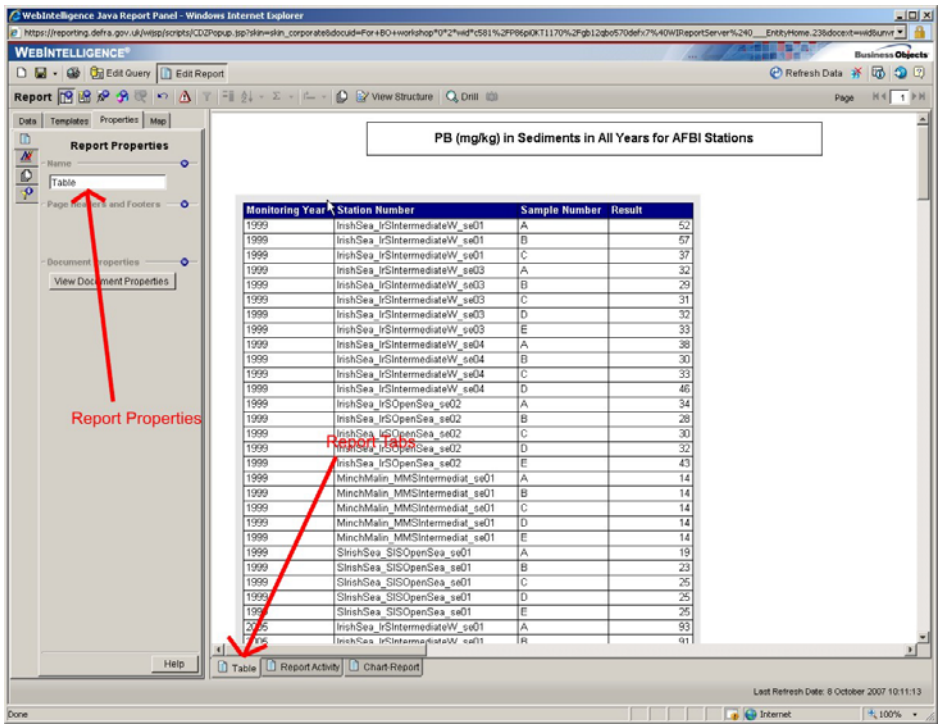
1. Open a new document.
2. In the **Edit Query** page, compile the following query:
    - **Results Pane** : Select ‘Monitoring Year’, ‘Station Number’, ‘Sample Number’, ‘ICES Matrix code’, ‘Determinand Code’, ‘Result’, ‘Unit of Measurement’.
    - **Query Filters** : ‘CMA Code’ – Select your CMA code (Values from List)
    - **Query Filters** : Prompt on ‘Determinand Code’ (Select Values Only from List)
    - **Query Filters** : Prompt on ‘Data Type’ (Select Values Only from List) (Drag Data Type directly from the Data tabs to the Query Filter

pane. You do not need to have 'Data Type' present in the Result Objects pane. The data will still be filtered accordingly.

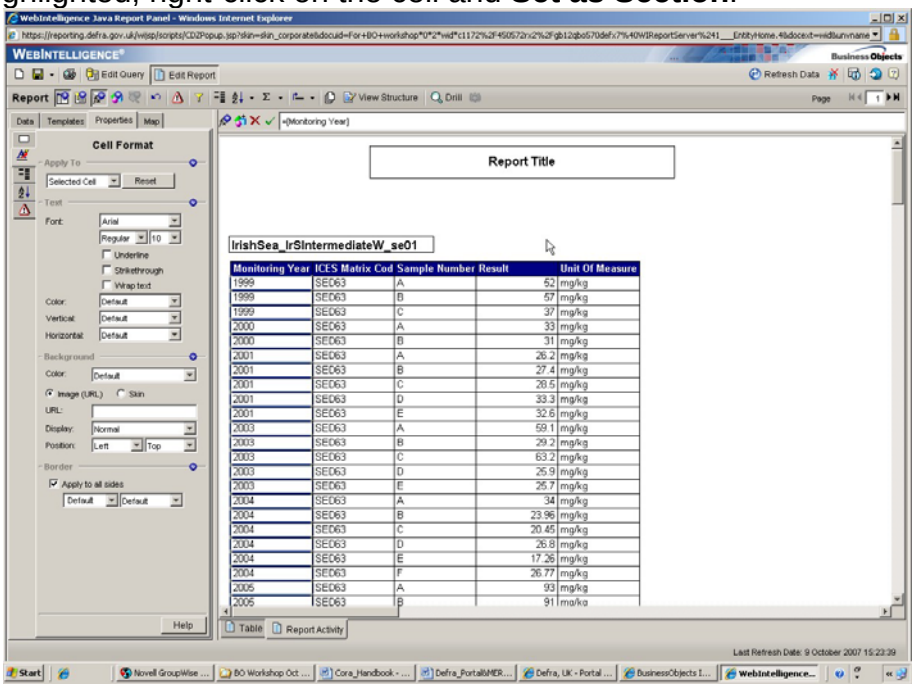


3. Run Query. Select '**Pb**' and '**Sediment**' as your Prompt choices.

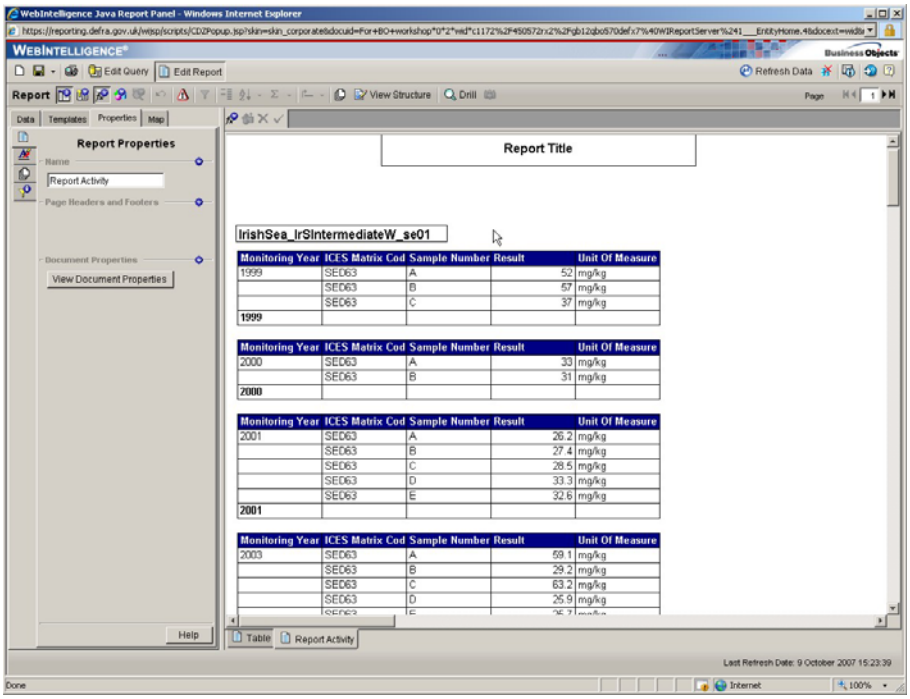
4. Remove the 'Determinand Code' by clicking and dragging it to the left of the screen and dropping it under the data tab.
5. **TIP:** Copy your original report before you make edits so that if anything goes wrong, you can always start again!
6. At the bottom of the report right-click the **Report tab**.
7. Rename the report to 'Table' in the **Report Properties** section and press enter.



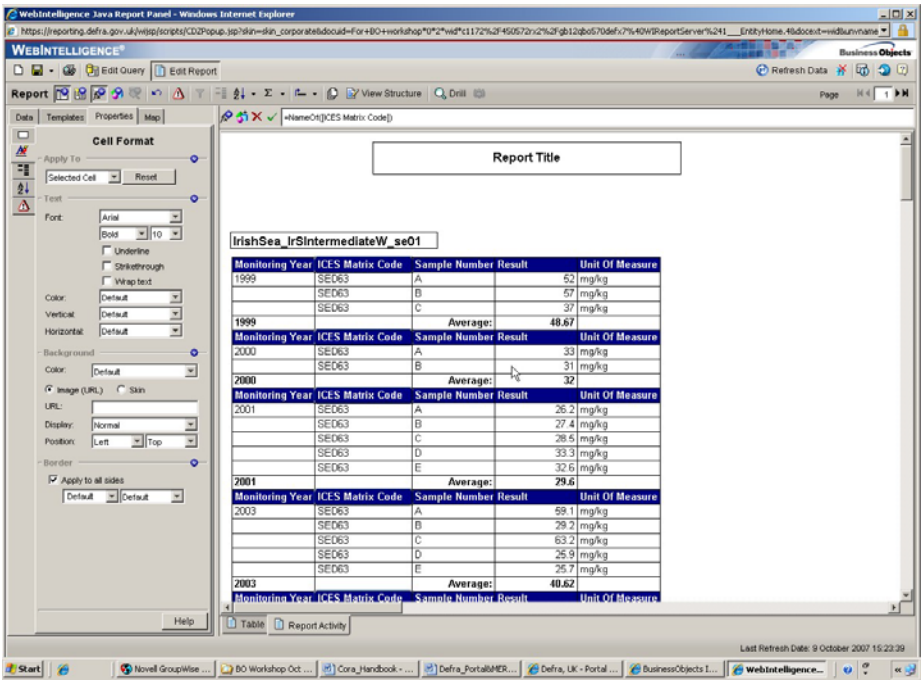
8. Right-click the tab again and '**Duplicate Report**'. This has created a copy of yout table in a separate sheet.
9. Rename this second tab to 'Report Activity' in the **Report Properties** Section and press enter.
10. Click on the '**Report Activity**' Tab
11. Divide the table up into sections by' Station Number'.
12. Click on a cell in the 'Station Number' column. The column will be highlighted, right-click on the cell and **Set as Section**.



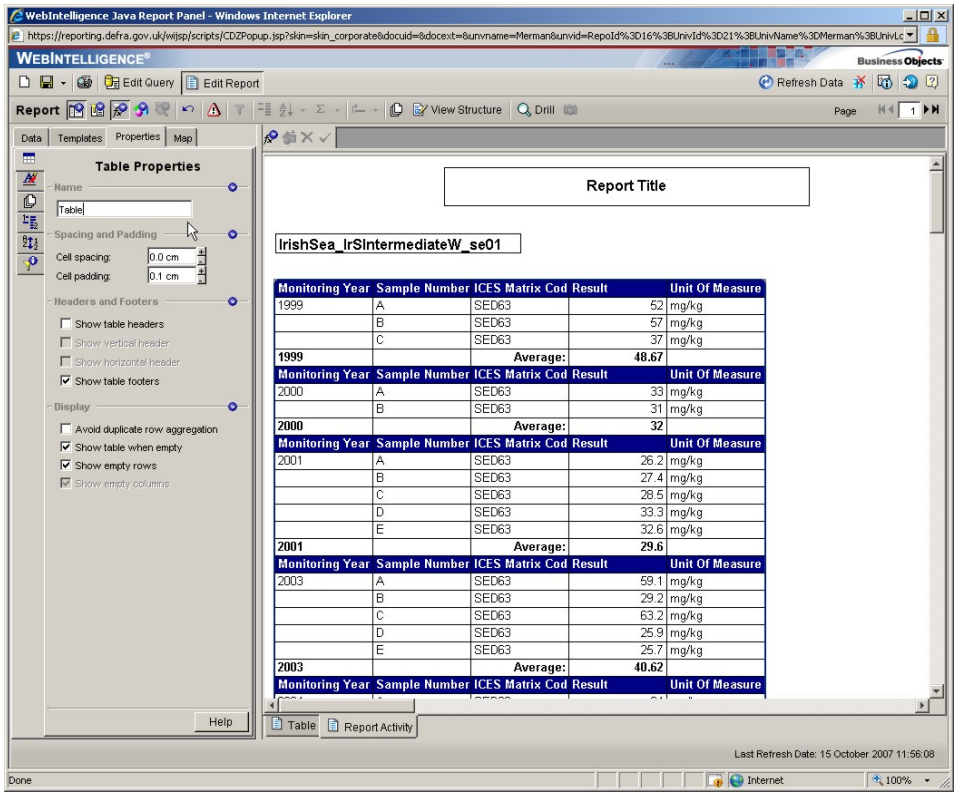
13. Double click on the ‘Station name’ cell so that it resizes to fit the station name fully.
14. Next break the ‘Monitoring Year’ up into groups.
15. Click on a cell in the Monitoring Year, and **Insert Break** using the icon in the Report Toolbar.



16. Next we want to add the average concentration for each year to the table.
17. Click on a cell in the ‘Result’ column and from the Results Toolbar, select the Average function.
18. Right-click on the empty row between the cell groups and **Remove Row**

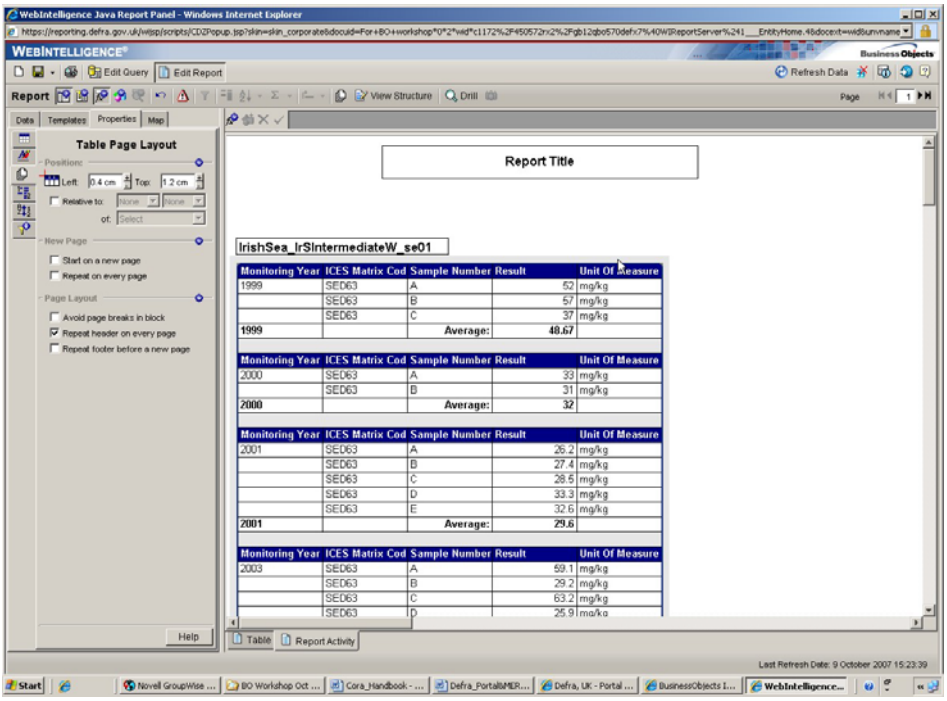


19. Name the Table. Click just outside the table so that it is highlighted and go to **Table Properties**. Under Name, write Table.

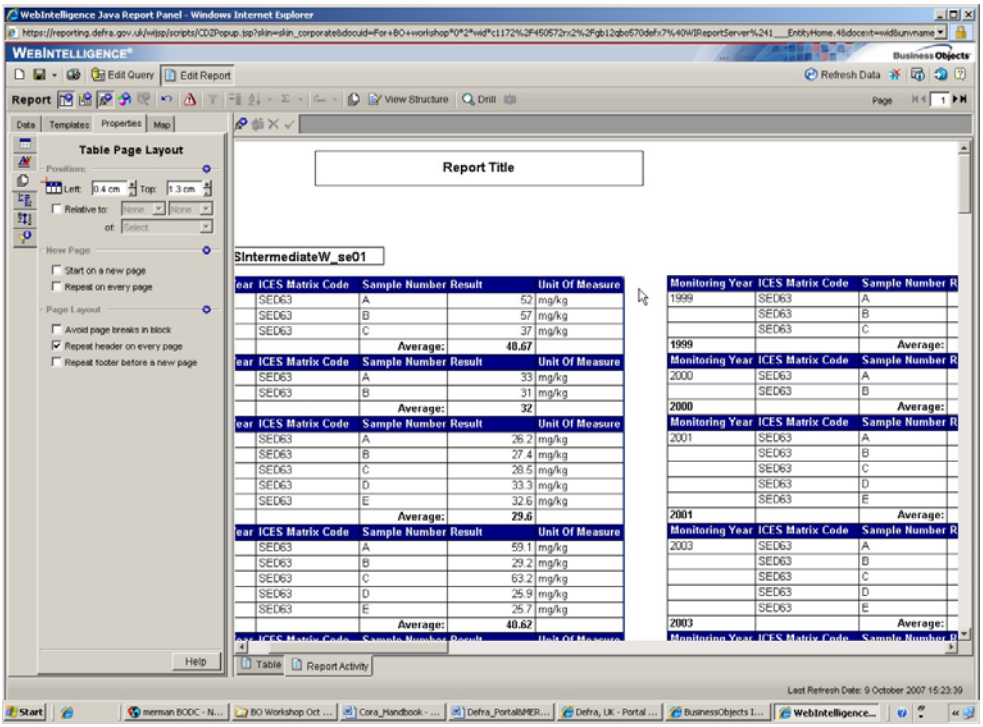


20. Make a copy of the table, which we will then turn into a Bar Chart

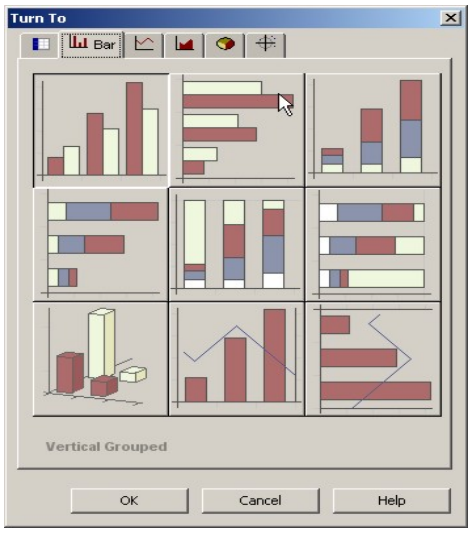
21. To make a copy of the object, click in the space just above the table so that the grey shadow appears.

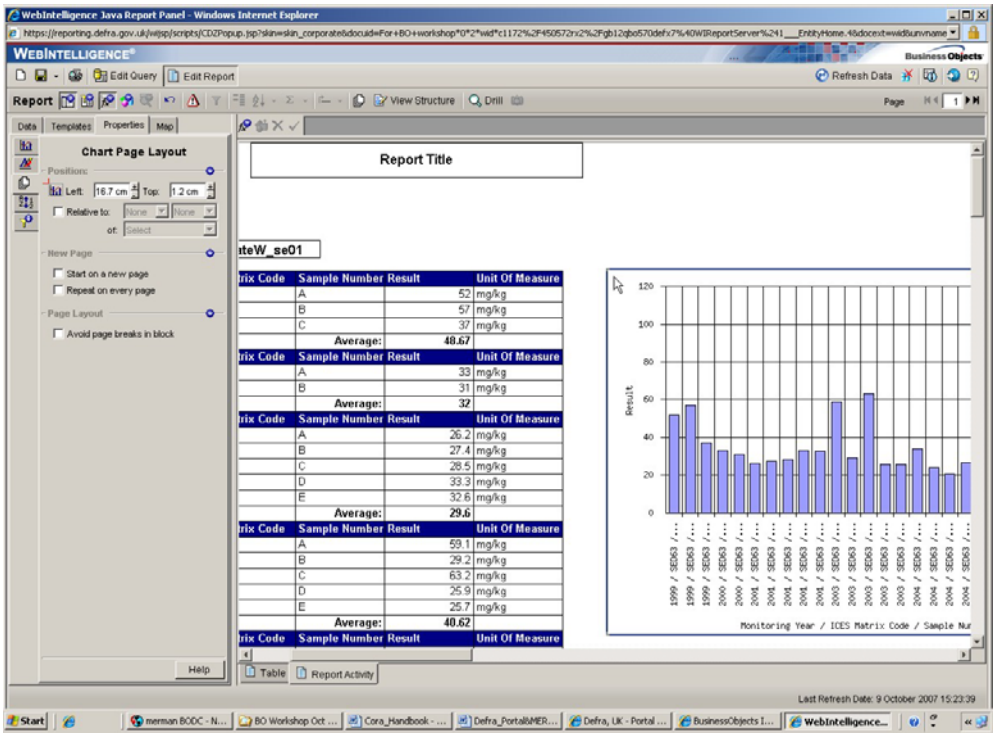


22. Holding down control, click and hold the grey shadow and drag it across the page. Drop the copy of the table so that it sits next to the original.



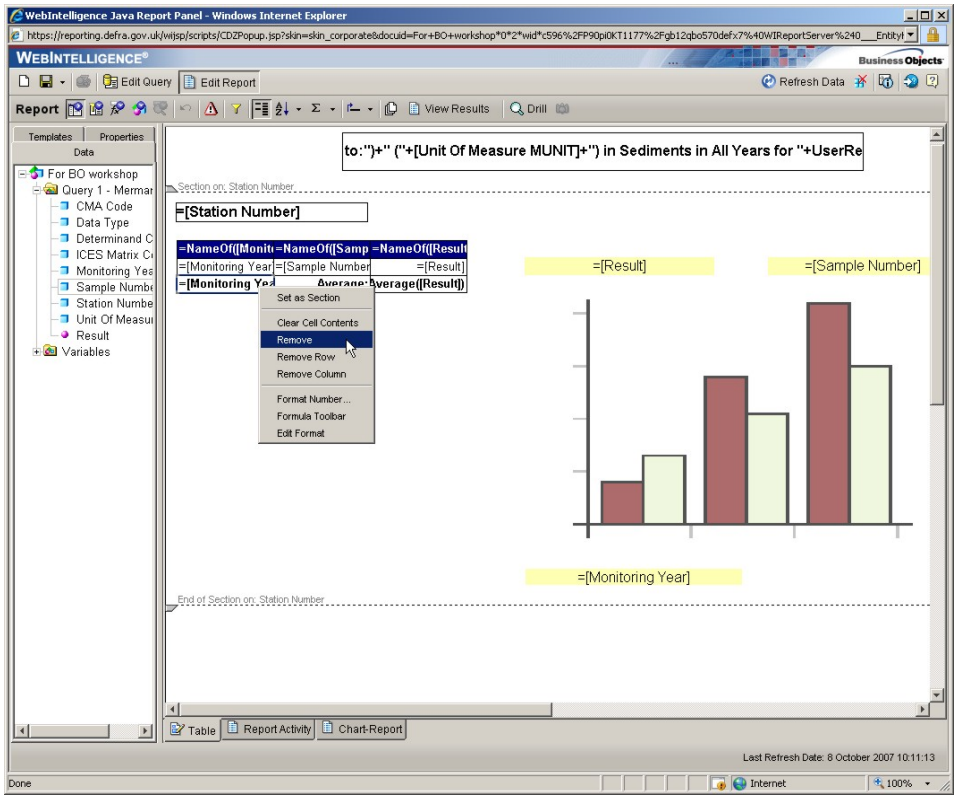
23. Right-click the space just above the second table and Turn to a Bar Chart – Vertical grouped.



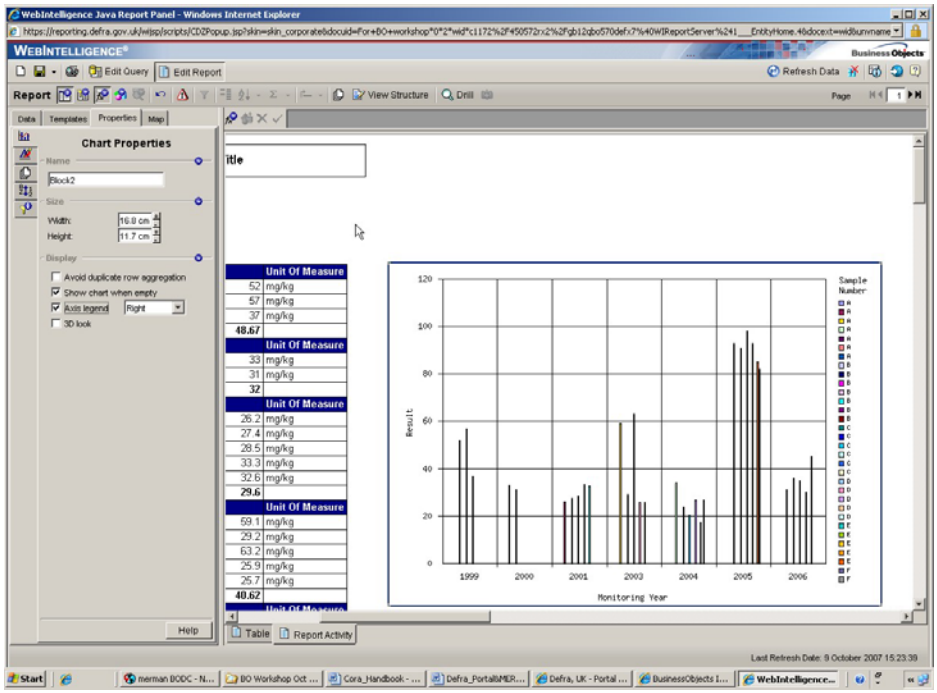


24. We now need to format the chart. Click **View Structure**.
25. Remove the 'Sample number' from the X-axis and move it to the top-right hand corner, '**Place dimension objects here'**.

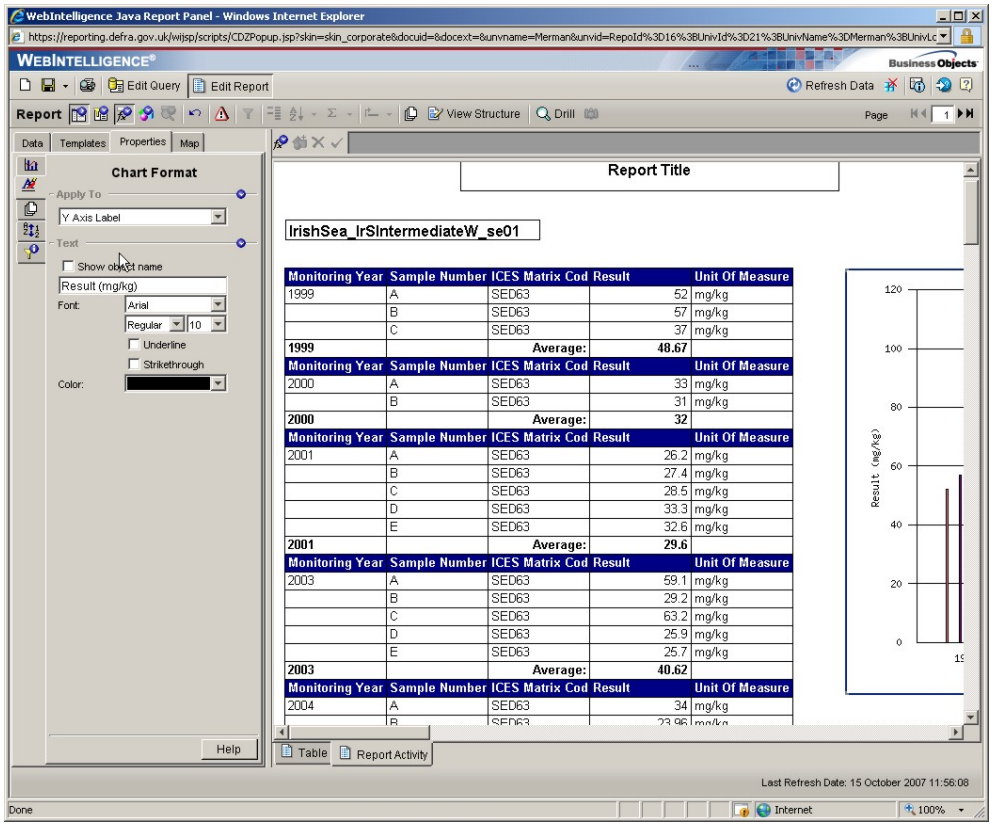
26. Delete the 'ICES Matrix Code' and 'Unit of Measurement' from the X-axis, by clicking on each one and pressing delete.



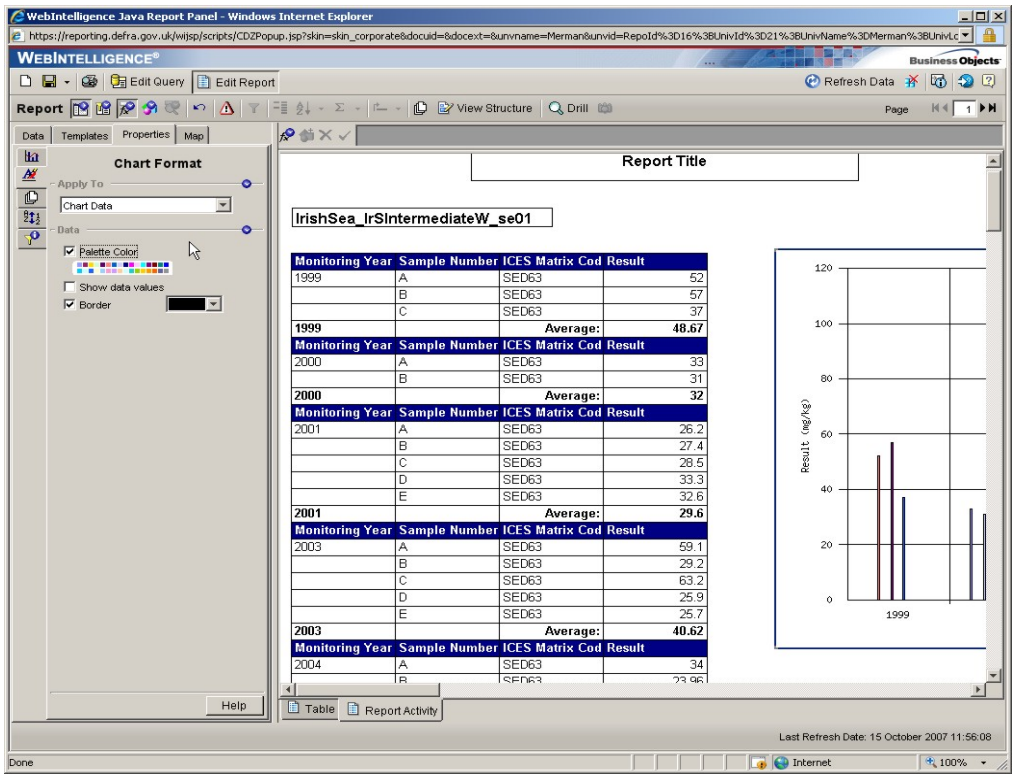
27. Click **View Results**
28. Click on the chart so that is highlighted, in order to format it.
29. Under the properties tab, select chart properties.
30. Add **Axis Legend**



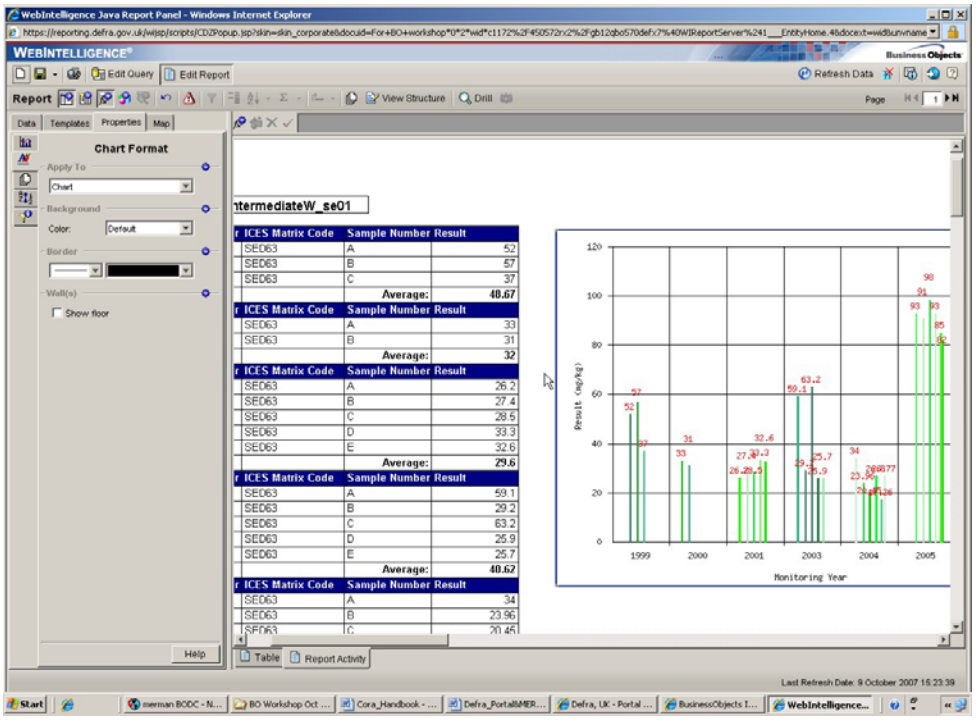
31. Click the **Chart format** tab.
32. We will now add the units to the Y-Axis label.
33. Under the **Apply To** Drop down menu, choose Y Axis label.
34. Uncheck the ‘Show object name’ and enter the following : Result (mg/kg)



35. Take the ‘Unit of Measurement’ column out of the table by right-clicking and **Remove column**
36. Under **Chart Properties**, name the Object ‘Graph’
37. Under the **Apply to** drop-down menu, select **Chart Data**.
38. Under **Palette colour**, select your choice of colour scheme.

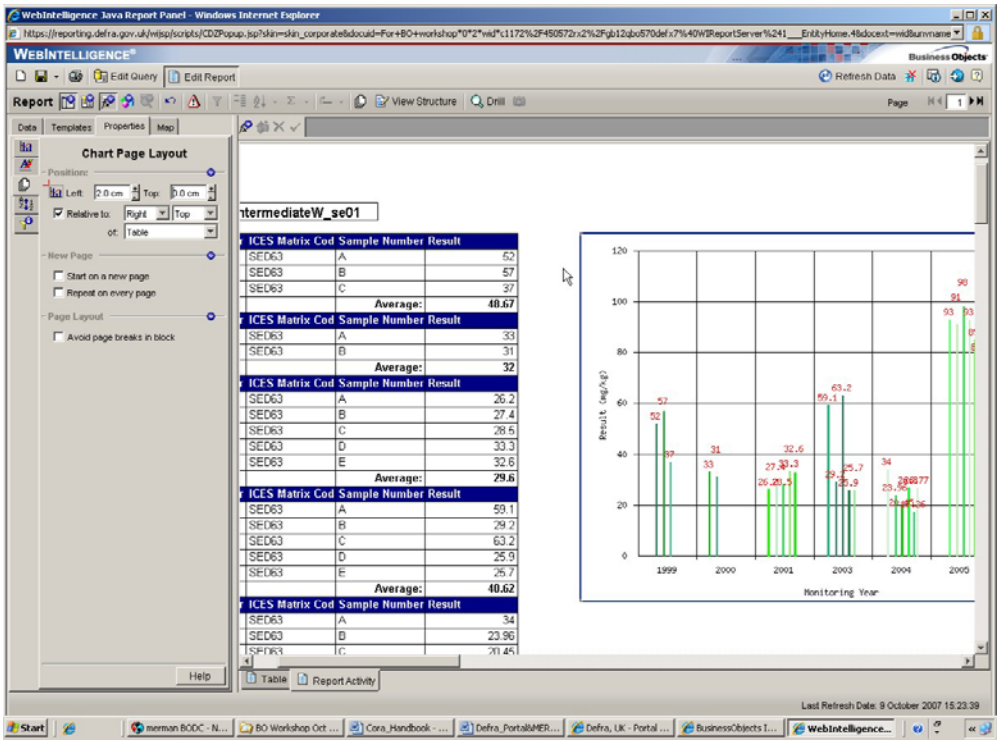


39. Select the ‘Show data values’ box.
40. Set the data values to be **Font-size 10** and make them **Red** and **Bold.**
41. Take the border off the bars.



42. Under the **Apply to** drop-down menu, select **Chart**
43. Put a thin black border around the chart.

44. To keep the format consistent, we can set the position of the objects so that they are related to each other. I.e. if you move the table for instance, the graph will move relative to it.
45. Click on the Chart so that a blue box appears around it.
46. Go to **Chart Page Layout**.
47. Check the **Relative to** Option. Now we can choose where we want the graph positioned, relative to the table.
48. Select **Right** and then **Top** from the drop down menus. After 'of', select **Table** (named previously).
49. In the positional values above, type in **2.0 cm from the RIGHT** and **0.0 cm from the TOP**.



50. If you try moving the table, the graph will automatically reposition.

51. Check the 'Avoid page breaks in block' option under **Page Layout**.

52. Remove the border from around the Station numbers.
53. Click the 'Station name' cell and under **Cell format**, remove the border.
54. Change the 'Station name' font colour to Red.

55. Now we will change the Report Title so that it adjusts automatically, depending on the prompts.

56. Double-click inside the Title.
57. Start the Formula with '='
58. Type in between quotes the generic text you want to display in the title.

    - Example : "Concentrations of "

59. Under Available Operators, select the operator to continue the formula – in this case we want to add something to the text so we use the (**+**) sign

60. Under **Available Functions** expand the **Data Provider** Folder.

61. From **Data Provider**, select **User Response**. The User Response function relates to the User's response to the Query Prompt.

62. Within the brackets, type in between quotes the filter prompt EXACTLY as it appears in the Query filters pane

    - Example : "Determinand Code Equal to:"

63. To add more text to the title add a **+** sign after the brackets and add what you want, again between quotes.

    - Example : " : " (Be aware of the spaces before and after the text)

64. To incorporate the Data Type you need to add in another User Response to the Title Formula. Under **Available Operators**, select the operator to continue the formula – in this case we want to add something to the text so we use the (**+**) sign

65. Under **Available Functions** expand the **Data Provider** Folder and select **User Response.**

66. With the brackets type in between the quotes the filter prompt EXACTLY as it appears in the Query filters pane

    - Example : "Data Type Equal to:"

67. Expand the Title Cell by double-clicking the side of it.
68. Remove the border around the Title and Underline it

69. Save the Report as **Final Activity.**

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