BILLING ENHANCEMENTS

Changes to the QESTLab billing module to cover Coffey's business needs.

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System:	QESTLab
Author:	Dirk Janek
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	Dirk Janek	1.0	Original Document
17 November 2005	Darren Fidler	1.1	Added sections: 1.2.6, 1.2.7, 2.7 & 2.8

RELATED DOCUMENTATION

Name	Location	Details

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1. Business Requirements

1.1 Overview

The existing QESTLab billing module provides for the automated generation of billing data based on sample registration and test allocation. This billing information can then be presented in an invoice run. The existing system is well suited to volume testing operations, in particular in the field of concrete and aggregate testing. Coffey's testing operations require more flexibility in the management of billing information, in particular:

- The ability to better control the identification information that describes the sample/location for the activity being billed.

- The ability to automatically bill for 'slump only' concrete tests.

- The ability to associate one master 'billable item' with multiple QESTLab test documents.

- The ability for the user to interactively select and edit billing items to be included / excluded from an invoice run.

- A different invoice layout with the optional ability to rollup all work of a specific activity into a single billing line.

- The ability to raise credit notes.

- To have invoices that print four copies, each with a different label.

1.2 Detailed Requirements

1.2.1 Definable identification information for billed work.

When Coffey provides an invoice to a customer it is important that the customer can easily identify the work that has been billed and correlate it with the testing services provided. This is an important goal to ensure that billing enquires and disputes are kept to a minimum. Currently the QESTLab uses specific sample information for this purpose. The current information is too limited and needs to be expanded. The information gathered also needs to be different for Concrete samples, individual Soil Samples and Soil Samples associated with a work order (i.e. field testing)

1.2.2 Automated billing of slump only tests.

The QESTLab allows for the registration of concrete samples that do not have any destructive test specimens, but rather are for slump testing purposes only. Slump tests are often included in the fee for the collection and testing of concrete cylinders, however if these are not required then the slump test is billed as a separate item. While the slump test is currently captured it is not automatically billed. Because most other work will be automatically billed by the QESTLab it is important to do this for slumps also to ensure that the customer is charged for this work and it is not overlooked.

1.2.3 Associating one master billable item with multiple test documents.

To facilitate the automatic billing of tests the QESTLab manages a 'Billable Items Master' list and a 'Fee Schedule'. The master list manages a relationship between a billable item number that defines a specific type of work in the financial systems and the QESTLab test document which is the representation of that work in the QESTLab system. This relationship is currently one to one. This does not suit Coffey's billable items which are more generic and may refer to an activity such as 'Field Density Tests' that have more than one corresponding test document in QESTLab (to cater for multiple Australian and State test methods).

1.2.4 Interactive selection/de-selection of billing lines for an invoice.

An invoice run in QESTLab can be generated for all jobs or a specific job. One invoice is created per job for the data range selected. This invoice includes all billing entries for the selected period that have not yet been billed. The user does not have any ability to 'hold back' specific billing entries without returning to the data entry screens used initially during sample registration. The 'hold back' ability is required to stop billing of work that may not yet have been completed and to meet other commercial and customer relationship considerations. Invoices could then be generated which exclude certain billing entries that will appear in the next invoice run instead.

1.2.5 New invoice layout with rollup ability.

The invoice layout needs to be modified to better suit Coffey's needs. QESTLab invoices currently provide one billing line per 'Master Billing Item' performed for a sample or group of samples. For example an individual soil sample that had three tests performed on it would have three corresponding billing lines. A concrete sample group that consists of two samples each with three cylinders would have a single billing line for 'Compressive Strength testing' with a quantity of 6. Likewise the tests performed both in the field and laboratory for a single work order (that may include 10 or more samples) would have their billing lines consolidated to one per 'Master Billing Item' (test). This process ensures that the information provided on an invoice is not heavily replicated.

It is however still possible for very large jobs that invoices generated in this manner may run into tens of pages. To overcome this, an additional mode should be provided on a per invoice basis that rolls-up all billing lines for the same 'Master Billing Item' (test) into a single billing line. The sample identification/location information would simply make reference to a billing detail report. The billing detail report can be generated using the standard QESTLab ad-hoc reporting tool and would be attached to the invoice sent to the customer.

1.2.6 Raising credit notes.

When an invoice is to be withdrawn a credit note needs to be sent to negate the amount previously invoiced. QESTLab needs to allow a credit note invoice to be generated from an existing invoice, which then becomes a new invoice in its own right, with a single item on it to negate the total of the initial invoice. These credit note invoices otherwise operate like standard invoices, but are not to be updated or changed at all due to other charge items.

1.2.7 Multiple Copies of invoices.

Multiple copies of each invoice need to be generated to go to different people such as the customer, head office etc. Coffey need to have four copies of each invoice, with a different label on each to indicate the purpose of the copy. These settings (the number of copies and the label) are fixed nationwide and need to be constant across the system.

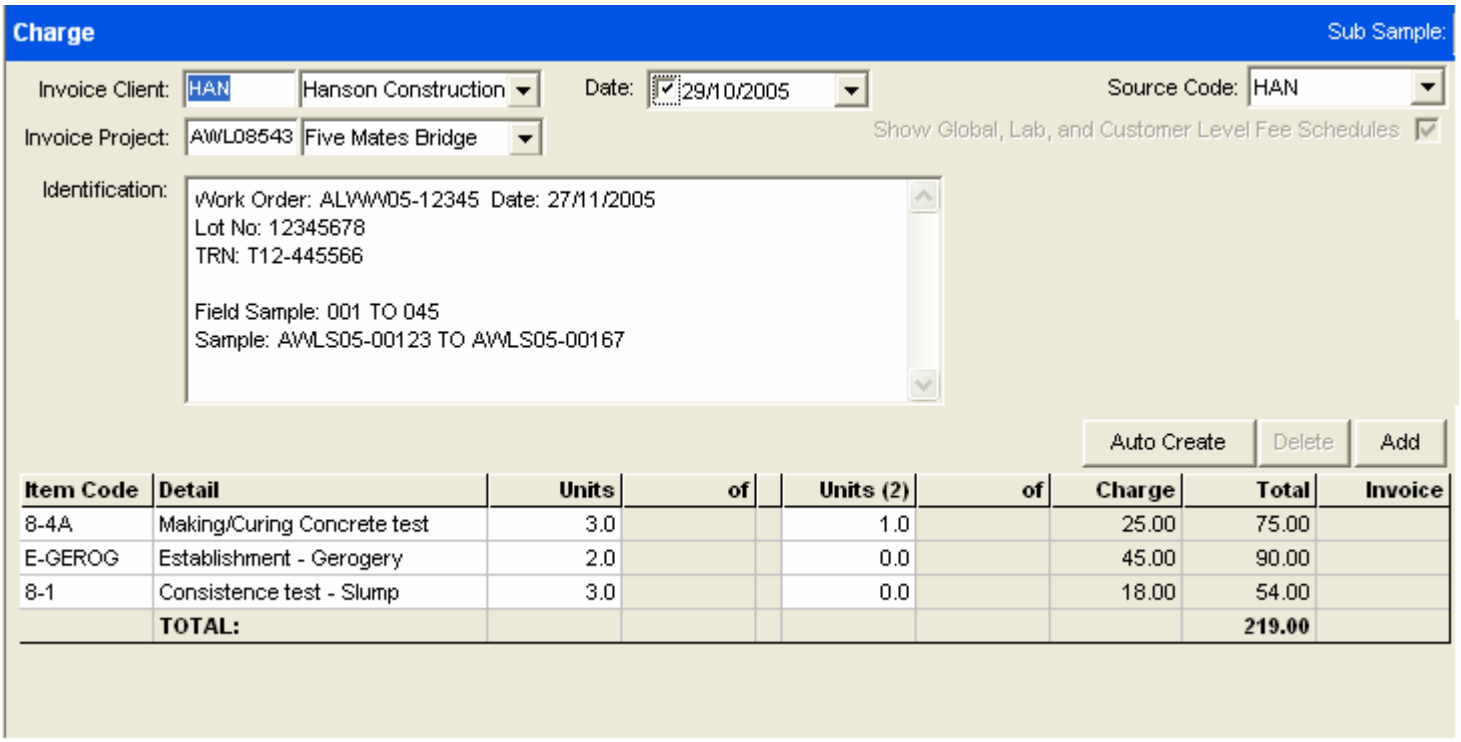
2. Functional Requirements

2.1 Overview

This section outlines the functional requirements that need to be implemented in the software to achieve the business requirements outlined in the previous section.

2.2 Definable identification information for billed work.

Identification information for billing work varies depending on the type of sample (soil, field, concrete, etc.). It is proposed to extend the existing billing document to capture the relevant information from the sample data entry. The billing document will incorporate a new large text edit box 'Identification' that is automatically populated but can be edited as required. The following screen shot shows this:



The data automatically placed in the identification field will vary depending on the type of sample as follows:

For individual Soil Samples (i.e. not part of a work order):

```
Date of Test
Sample No
Field Sample No
Lot No
TRN Number
```

For Soil Samples from a work order:

```
Date of Test
Work Order No
Lot No
TRN Number
Location of Job
Sample No Range
Field Sample No Range
```

For Concrete Samples:

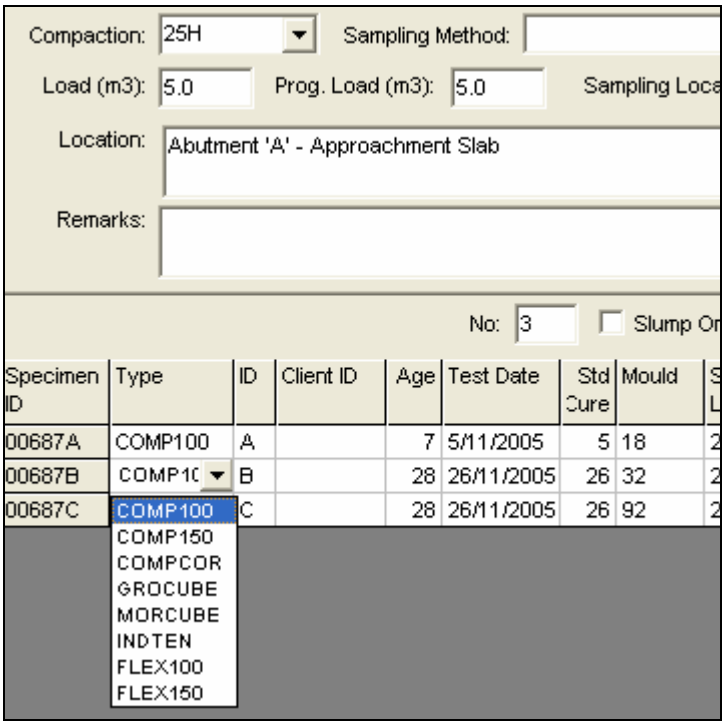
```
Date of Test
Sample Group No (Report No)
Location of Job
Docket numbers
```

2.3 Automated billing of slump only tests.

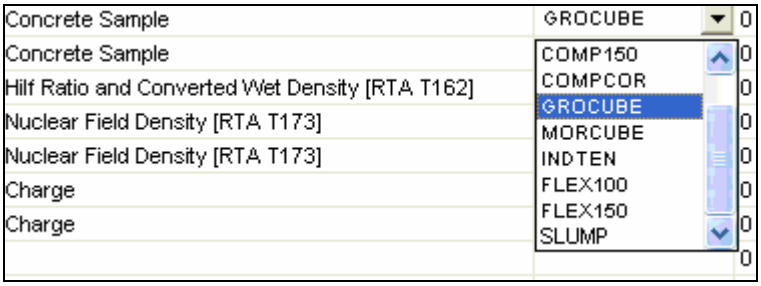
When working with concrete samples the 'Billable Items Master' currently allows for different sub items per type of destructive test being performed. For example the following screen shot shows two list entries, one for 100mm Compressive Strength tests and the other for Grout Cubes.

8-4A	Making/Curing Concrete test	Concrete Sample	COMP100
8-4B	Making/Curing Concrete grout cube	Concrete Sample	GROCUBE

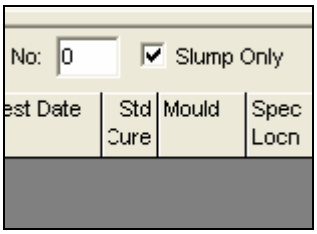
The appropriate billable item is used based on the test selection made when registering the concrete sample as per the screen shot below:



The proposed change will make available a new 'sub item' for 'SLUMP' when establishing items in the 'Billable Items Master'.



Fees associated with this item will automatically be used when a concrete sample is set to 'slump only' as per the following screen shot:



2.4 Associating one master billable item with multiple test documents.

It is not practical to provide a solution to this problem in the QESTLab at the moment. We suggest that this item is revisited when integration with Coffey's financial systems is investigated in the future. In the meantime, as a work around, we suggest that multiple entries are created in the 'Billable Items Master' for each type of QESTLab test document. Each of these will require a unique code, so where the current billable item code for 'Density in Place – Nuclear Method' may be 2-6B, we recommend a post fix for each instance such as 2-6B-1, 2-6B-2, etc.

This will allow for consolidated reporting if required and simplified conversion of data should the system change in the future.

2.5 Interactive selection/deselection of billing lines for an invoice.

2.5.1 Changes to the QESTLab tree

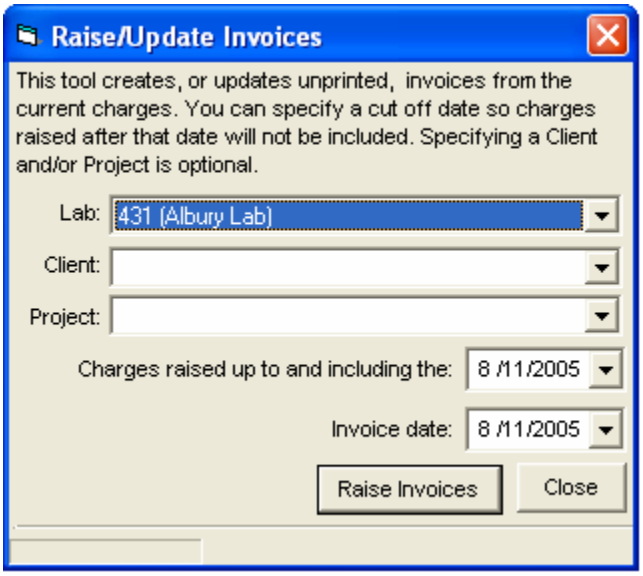
The current invoice generation process is initiated via the QESTLab tools menu. The new requirements in this document are better suited working with a top level node from the QESTLab tree, in a similar fashion to Work Orders and Samples. It is therefore proposed that the QESTLab tree be changed as follows:

When on the billing node a new toolbar will be provided that will have the following functions:

Generate Invoices	Creates new invoice documents for invoicing the current billing data.
Export Billing Information	Exports billing information (not currently used by Coffey)
Update Charges	Scans for billing documents that have no associated billing data and automatically adds billing information based on the tests performed (same functionality as the 'Auto Create' button on the billing document)

2.5.2 Generate Invoices

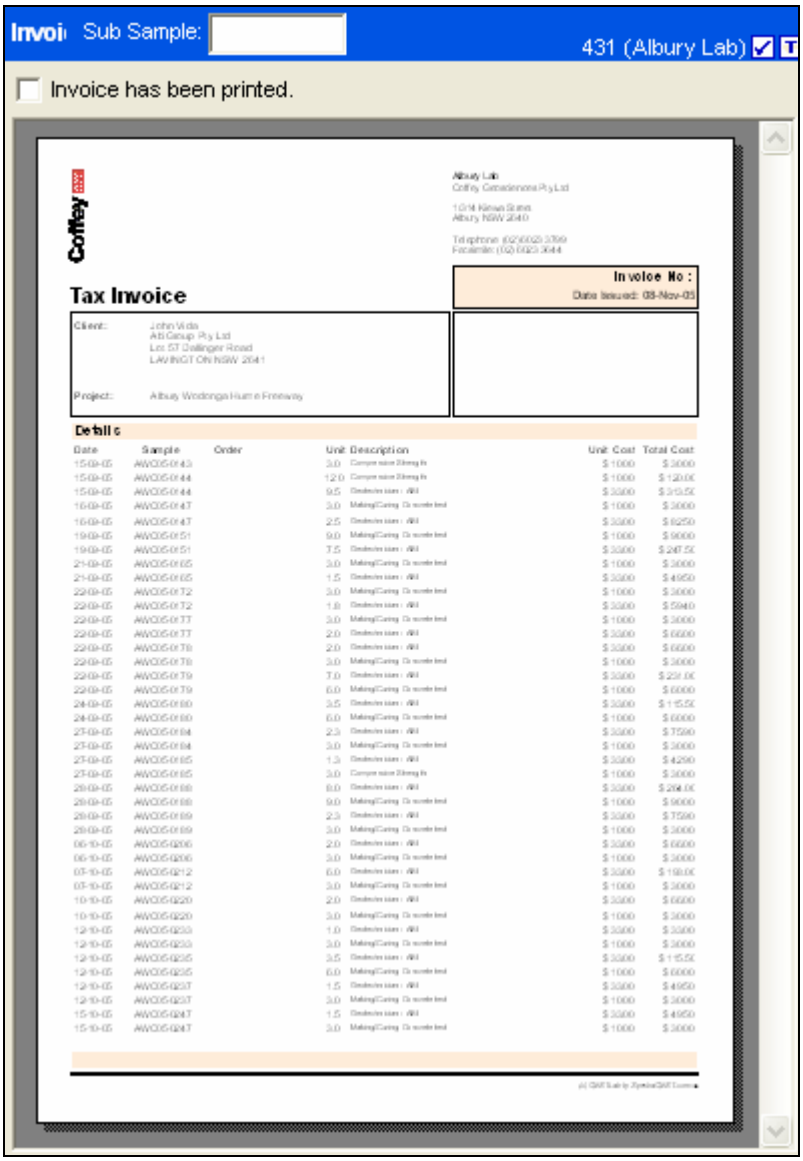
Generating invoices is the process by which new invoice documents are added to the QESTLab system. The following dialog is used for this process:



The process can be run for a all clients/projects or for a specific client and/or project. A new invoice document will be added for each project that has unbilled charges for the specified date range. These invoice documents will be marked as 'unprinted invoices'. 'Unprinted Invoices' appear under the sub node of the same name. When an invoice is in the unprinted state it is not yet assigned an invoice number. If you re-run the generate invoices process and new billing data is found for a project and this project already has an 'unprinted invoice' then the data will be added to this invoice rather than creating a new invoice.

2.5.3 Previewing and Editing Invoices

Currently the QESTLab allows the user to preview an invoice before it is printed. This is done by selecting the invoice document (which is listed under the 'unprinted invoices' node of the tree).



The billing data that appears on the invoice is restricted by project and the date specified in the 'Generate Invoices' process.

It is proposed that functionality be introduced to allow the user to deselect specific charges that they may not yet need to invoice. At the same time also allowing the selection of new charges that have been added since the invoice was generated. To enable this functionality an additional 'Detail' view will be added for the invoice document, the current view will be named 'Preview'.

Views are selected from a drop down in the toolbar. The toolbar will have a new item as follows:

The new preview view will display a tabular representation of all the currently un-invoiced billing data for the project. The data that is already selected to be included on the invoice will be marked as such. The user can then deselect items to remove them from the invoice or select items to add them to the invoice.

	Identification	No	Details	Unit Charge	Total Charge
	Work Order: ALWW05-12345	3	Making/Curing Concrete Tests	$25.00	$75.00
☑	Date: 27/11/2005	1	Consistence Test - Slump	$18.00	$18.00
	Lot No: 12345678 TRN:T12-445566				
	Work Order: ALWW05-12498	6	Making/Curing Concrete Tests	$25.00	$150.00
☐	Date: 27/11/2005				
	TRN:T12-445566				
	Work Order: ALWW05-12555	3	Making/Curing Concrete Tests	$25.00	$75.00
☑	Date: 28/11/2005	1	Consistence Test - Slump	$18.00	$18.00
	Lot No: 12345999				

A limitation of the selection/de-selection process is that it deals with a billing document in its entirety. That is all billing lines from a billing document are either to be included or excluded as a whole. Individual lines can not be selected. A billing document applies either to an individual soil sample (in which case all tests for the sample must be billed at the same time), or a work order (in which case all tests for all soil samples belonging to the work order must be billed at the same time) or a concrete sample group (in which case all tests performed on all the concrete samples belonging to the group must be billed at the same time). Therefore in the sample shown above, it would not be possible to separate the billing of the 'Making/Curing Concrete Tests' and 'Consistence Test – Slump' from Work Order 'ALWW05-12345' as they are all selected/deselected as a single item.

This limitation steams from the way the QESTLab currently marks billing data as invoiced. If this does not meet Coffey's requirements then this marking process will need to be changed.

2.5.4 Printing Invoices

While working with a single invoice document it can be printed at anytime. Printing is initiated by a toolbar icon.

If it is the first time that the invoice has been printed the next available invoice number will be issued.

Invoices can also be printed as a batch process. This is done by selecting the 'Unprinted Invoices' node of the tree and then chosing the 'Print' button on the toolbar. This will automatically print all unprinted invoices.

2.5.5 Viewing Printed Invoices

Once invoices are printed they no longer appear on the 'Unprinted Invoices' node of the tree. They are now available via the 'Printed Invoices' node. This node will use the standard QESTLab data filtering to restrict the invoices shown. The searchable fields will be:

```
Client
Project
Invoice Number
Invoice Date
```

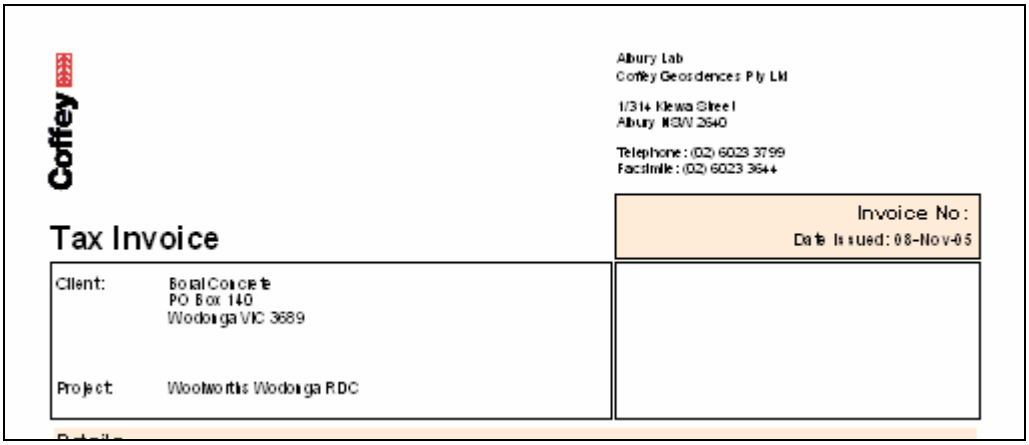
The user can then click on any invoice document that is returned to see the 'preview' view of the invoice. At this stage the 'detail' view is not longer available as the invoice has been issued and should not be modified. If there was a mistake on the invoice the user can clear the 'Invoice has been printed' check box and make the required adjustments, then re-print the invoice. In this case the same invoice number will be used when it is printed again.

2.6 New invoice layout with rollup ability.

Changes to the existing invoice layout are recommended to better suit Coffey's requirements. These changes should conform to the current standard reporting layouts common throughout QESTLab. This is predominately concerned with the consistent layout of the header section of reports. The layout change proposed is mainly focused around providing space for the reporting of the identification information as per section 2.2. Additionally a roll-up ability is proposed to further consolidate the billing information on an invoice.

2.6.1 New invoice layout

The header section of the invoice is to remain consistent with all other QESTLab reports.



The detail section is to change to provide a larger area for the reporting of the 'identification information' as per section 2.2 of this document.

Details

Sample/Location Details		Unit	Description
Work Order : AWLW05-12345 Slab near south entrace	12/11/2005	6.0 1.0	Making/Curing Concrete test Establishment - Barnawartha
Work Order: AWLW05-12346 My Location here	13/11/2005	6.0 1.0	Making/Curing Concrete test Establishment - Barnawartha
Work Order: AWLW05-12234 Lot No: 123456789 TRN: TX112234 Main Street, South Big City	24/11/2005	9.0 1.0	Making/Curing Concrete test Establishment - Barnawartha
Sample No: AWLS05-0045 Date: 25/11/2005		6.0 1.0	Making/Curing Concrete test Establishment - Barnawartha

The Sample/Location details section will expand and collapse as required to fit the details provided.

2.6.2 Rollup ability

A new option will be provided via a check box that allows the user to select to rollup all like billing items on the invoice. So for example in the case above where there are two distinct types of work that have been performed the amounts for these would be totaled. In this case it would not be possible to provide the details of each billed item so a reference to a separate detailed billing report would be provided instead.

Details

Sample/Location Details	Unit	Description
Work performed as per attached document	27.0 4.0	Making/Curing Concrete test Establishment - Barnawartha

The words 'Work performed as per attached document' would be fixed in the case of a 'rollup' invoice.

2.7 Raising Credit Notes

When an invoice (but not a credit note invoice) is being viewed, a new icon will be shown in the toolbar alongside the 'View' drop-down.

When pushed, the user will be prompted with "Are you sure you wish to generate a credit note for invoice XXXXXX?" (where XXXXXX is the invoice number in question) with 'Yes' and 'No' options.

- If the user selects 'No' then the prompt is dismissed and no further action occurs.

- If the user selects 'Yes' then a new charge document is created with one item with details 'Credit for items billed as per invoice XXXXX' (where XXXXXX is again the invoice number) and a charge of the negative of the total of invoice XXXXXX. The client and project will be copied from invoice XXXXXX also. Identification will be left blank.

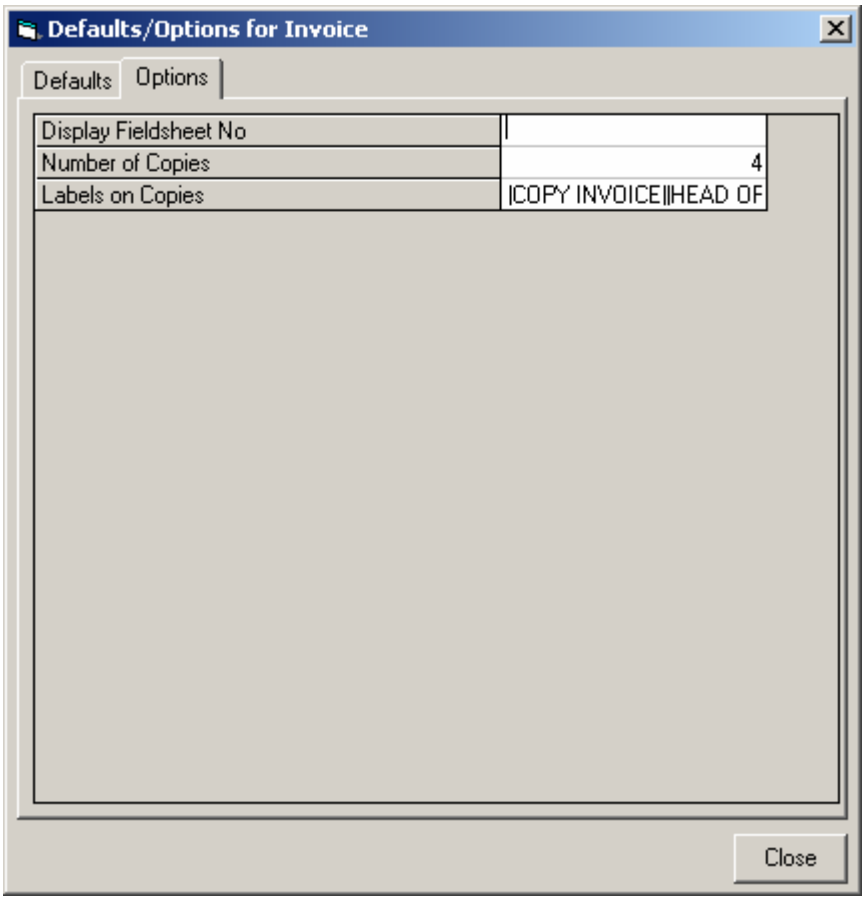
A new credit note invoice is also automatically created for the credit note charge and will appear in the 'Unprinted Invoices' section of the tree ready to be printed. A credit note operates like a normal invoice, with a new invoice number, but will only ever include the single charge item on it to negate another invoice and will not change when the Raise/Update invoices tool is run.

2.8 Multiple Copy Invoices

Two new document options will be added to the Invoice document (18019) to allow multiple copies of an invoice with different labels. These are:

Number of Copies: The number of duplicate copies of the invoice. These copies will be shown in the invoice preview on subsequent pages.

Labels on Copies: The labels to display on each copy of the invoice. These are entered in a pipe-separated string, the position in the string corresponding to the copy of the report. The entered label is shown on each page of that copy of the invoice.



The invoice will appear as follows, with the labels being displayed opposite the 'Tax Invoice' title, shown below as 'HEAD OFFICE COPY'. Note that font many vary on actual invoice.

Coffey

Albury Lab
Coffey Geosciences Pty Ltd

1/314 Kiewa Street
Albury NSW 2640

Telephone: (02) 6023 3799
Facsimile: (02) 6023 3644

Tax Invoice

HEAD OFFICE COPY

In
Date Issue

Client: John Vida
AbiGroup Pty Ltd
Lot 57 Dallinger Road
LAVINGTON NSW 2641

Project: Albury Wodonga Hume Freeway

Payment Options
Etc.

Details

Date	Sample	Order	Unit	Description	Unit Co
15-09-05	AWC05-0143		3.0	Compressive Strength	$ 10.
15-09-05	AWC05-0144		12.0	Compressive Strength	$ 10.
15-09-05	AWC05-0144		9.5	Geotechnician - ABI	$ 33.
16-09-05	AWC05-0147		3.0	Making/Curing Concrete test	$ 10.

Invoice Terms/Payment Options:

Payment options can currently be defined in the Admin Console in the general option Invoice Terms. This is then displayed in the box on to the right of the client and project details where "Payment Options Etc." is shown above. These details will be shown on all pages and copies of the invoice. The font size used may need to be reduced to fit Coffey's current Payment Options text.

Please note: This text is currently plain text with no formatting (tabs, bold etc), please confirm this is adequate. The payment options also appear on all copies of the invoice currently unlike the current Coffey's invoices, please advise us if this is a problem.

3. Assumptions and Additional Constraints

[Details any prior knowledge assumed and any dependencies with QEST or third party systems, procedures, etc. What standards and conventions should be adhered to? What principles should be applied, for what factors take precedence from performance, memory utilisation, ease of use, etc? These are NOT constraints arising from the design, rather constraints that may impact on the design.]

4. Implementation Instructions

4.1 Overview

[Overview of how the solution will be implemented technically. This is the 'technical specification']

4.2 ...

[Each sub section of section 4 should relate to a specific part of the application that needs to change to meet the functional requirements. Ideally there should be a sub section here that corresponds to each sub section in section 2. The technical details must be unambiguous. Details that are not relevant to the customer should be set in a grey font colour.]

4.3 ...

[]

4.x Coding Reference

[Summary of any database tables, classes, code modules, Active X and other files affected by the solution]

5. Design Consequences

5.1 Limitations

[Specify any limitations to the functionality arising from the chosen design.]

5.2 Recommendations

[Outline any recommendations for future development involving the components included in this specification, such as code re-use possibilities, suggested direction of future enhancements etc.]

5.3 Side effects

[Specify any side effects to existing functionality that may arise from the implementation of this specification. This includes and is not limited to the need of database patches, old functionality being replaced, QAC options needing to be reset, or any other related functionality being disabled/enhanced. All associated risks of the change request should also be clearly outlined.]

6. Testing

6.1 Code Review

Review the code for correct naming conventions, design and commenting.

6.2 Unit Testing

[Detailed test cases for confirming the functionality works in all the required scenarios. This will be used for in house testing (pre and post build) and for testing by the customer. Regression testing to be done as the scope demands]

6.3 Regression Testing

[Identify regression testing required for backward compatibility]

7. Documentation

7.1 External (Customer)

[What external documentation is required / needs updating to cover the change to functionality such as release notes and user guides.]

7.2 Internal (Spectra QEST)

[What internal documentation is required / needs updating to cover the change in functionality such as design documents and technical references.]

8. Post Installation Tasks

8.1 File updates needed

[Include a list of all files that need to be sent over/replaced post install. This could include QEST.LIC files or QDI Mapping files etc]

8.2 Patches/Scripts needed

[Any database scripts/patches needed should be mentioned here with the necessary details]

9. Open/Closed Issues

9.1 …

[Each issue that requires clarification should be detailed here. This section of the document is intended to be dynamic and will be updated as new issues arise and old issues are resolved.]

Appendices

Appendix A: …

[Supporting information that does not need to be present in the main sections of the document such as table definitions, mappings, etc.]