

IRIS-Vision “SeeScan”

Copyright© 2001-2014 by Iris Inspection Services, Inc.

User’s Guide



Table of Contents

1. INSTALLATION	3
1. SECURITY	3
2. START SOFTWARE	4
2.6.1 Use	4
2.6.2 Design	4
2.6.3 Back Up	4
2.6.4 Restore	4
2.6.5 Erase	5
2.6.6 Merge	5
3. CAPTURE TAB	6
3.6 Downloading C-Scan data from the IRIS 9000	7
4. INFORMATION TAB	8
5. VIEW TAB	10
5.1 Wall Remaining	10
5.2 Structure	11
5.3 Damage Type	12
5.4 B-Scan / C-Scan	13
6. SIDE VIEW TAB	15
6.16 Tube sheets and supports:	18
7. REPORTS TAB	19
7.3.1 Export Report	19
7.3.2 Import Report	19
7.3.3 Insert Report Line	19
7.3.4 Delete Report Line	19
8. PRINT TAB	20
8.2.1 Options:	21
8.2.2 Cover:	22
8.2.3 Report:	23
8.2.4 Images:	23
9. LEGEND TAB	24

Setup Guide

1. Installation

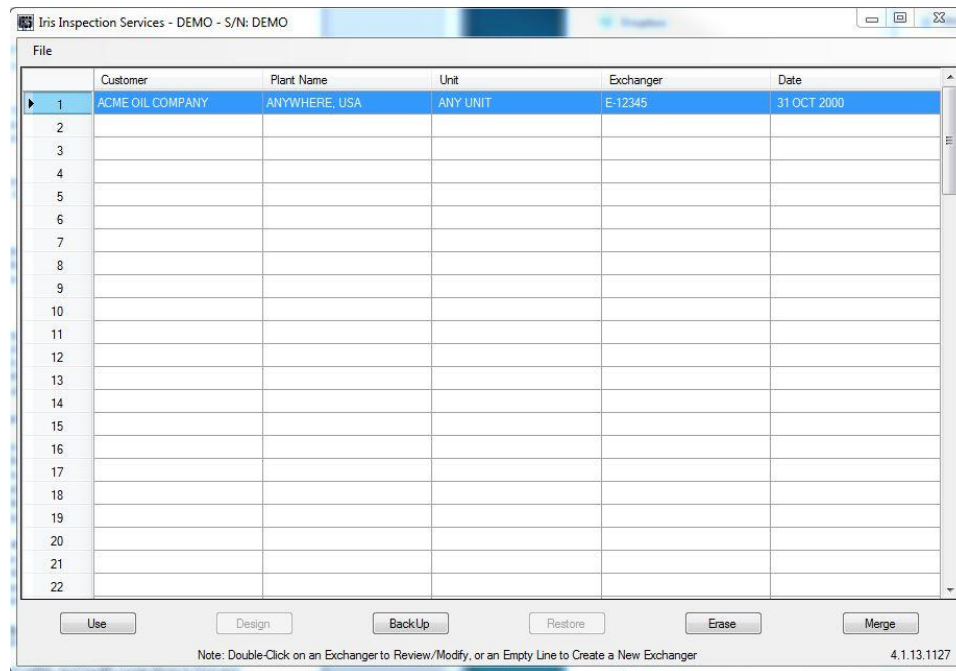
- 1.1 IRIS-Vision software is compatible with Windows XP, 7, and 8 operating systems
- 1.2 Insert IRIS-Vision software CD
- 1.3 Upon insertion, the CD should bring up an auto-play Window
 - 1.3.1 In the auto-play Window select *“Open Folder to View Files”*
 - 1.3.2 If the disc does not auto-play, select Start, Computer, and then your CD or DVD drive.
 - 1.3.3 Double click the file *“Iris Vision Setup 4.1.exe”*
 - 1.3.3.1 A new window will appear. *“Do you want to allow the following program from an unknown publisher to make changes to this computer”*
 - 1.3.3.1.1 Select Yes
 - 1.3.3.2 A new window will appear. *“Welcome to the IRIS-Vision SeeScan 4.0 Setup Wizard”*
 - 1.3.3.2.1 Select Next
 - 1.3.3.3 In the next window, you will be asked for a password.
 - 1.3.3.3.1 Enter: *IRIS2012*
 - 1.3.3.3.2 Select Next
 - 1.3.3.4 Follow on screen instructions
- 1.4 Upon completion of the SeeScan wizard, a new window will open. *“Welcome to the InstallShield Wizard for Sentinel System Installer 7.5.7”*
 - 1.4.1 Follow the prompt
- 1.5 A final completion window will open once setup is completed.
 - 1.5.1 Select *Finish*
- 1.6 Install the USB-Serial adapter driver (Supplied with Adapter)
 - 1.6.1 Insert the USB-Serial Adapter into a USB port.
 - 1.6.1.1 The device driver software will begin installing.
 - 1.6.1.2 Once installed, the USB-Serial Adapter will be ready to use.

IRIS-Vision

1. Security

- 1.1 Insert USB security key into a USB port.
 - 1.1.1 Upon inserting the key, the device driver software will begin installing.
 - 1.1.2 Once installed, IRIS-Vision will display your company name, serial number, and be fully functional.
 - 1.1.3 The security key is the software license so please protect the key.

2. Start software



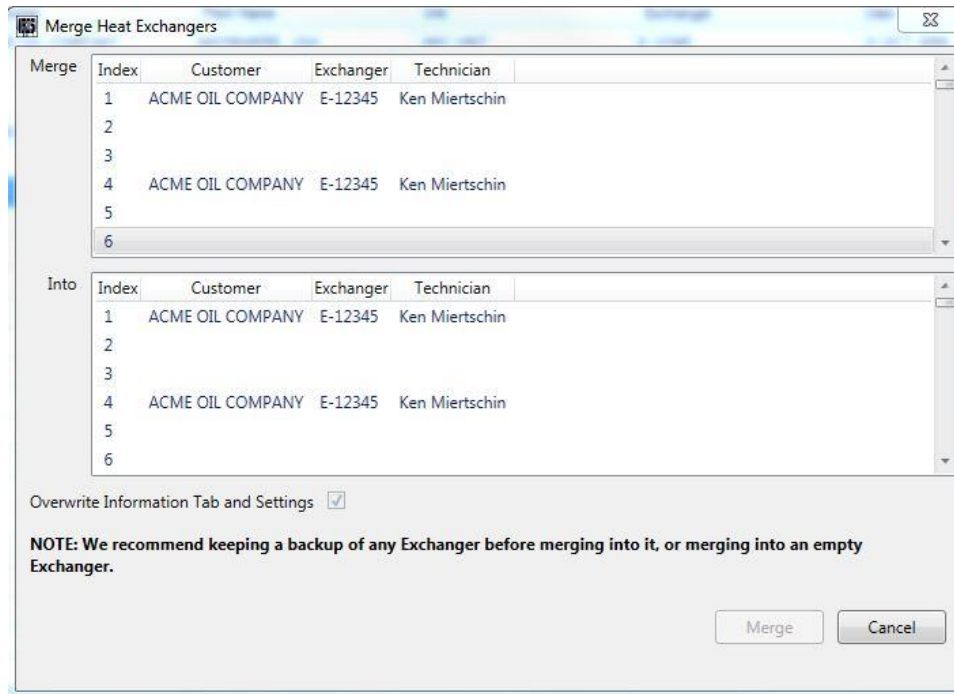
- 2.1 Insert the USB security Key then start the IRIS-Vision Software.
- 2.2 If a line with data is highlighted, *Use*, *Back Up*, *Erase* and *Merge* are active.
- 2.3 If a blank line is highlighted, *Design* and *Restore* are active.
- 2.4 Only one exchanger may be opened at a time.
- 2.5 To open an exchanger, either highlight the data line and select *Use* or double-click the data line.
- 2.6 Select Screen Buttons
 - 2.6.1 Use
 - 2.6.1.1 Select Use to open an existing report
 - 2.6.2 Design
 - 2.6.2.1 To design a new exchanger, double-click on a blank line or click blank line, click *Design* and a new screen appears to capture and build report data.
 - 2.6.3 Back Up
 - 2.6.3.1 Click to back up an existing report
 - 2.6.3.1.1 Select an existing exchanger, and then select *Backup*. A menu will appear showing the *File Name* (the exchanger number).
 - 2.6.3.1.2 Select the applicable *drive* and *directory* from their respective drop-down menus, then select *Save*.
 - 2.6.4 Restore
 - 2.6.4.1 Click to restore an existing report

- 2.6.4.1.1 Select a blank line and select the *Restore* button. A menu will appear.
- 2.6.4.1.2 Select the applicable *Drive* and *Directory* where the file is located from their respective drop-down menus.
- 2.6.4.1.3 Then select the file to be restored and select *Open*.

2.6.5 Erase

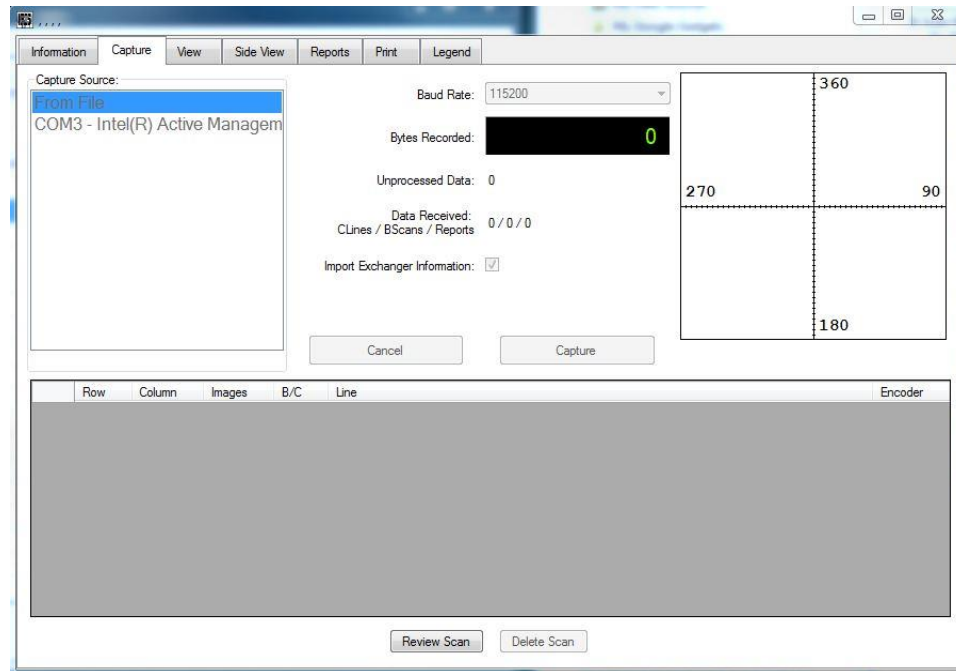
- 2.6.5.1 Click to erase an existing report
 - 2.6.5.1.1 Select the exchanger to be erased
 - 2.6.5.1.2 Click the *Erase* button

2.6.6 Merge



- 2.6.6.1 Click to merge two existing reports
 - 2.6.6.1.1 Click Merge, a new window will open
 - 2.6.6.1.2 In the top window select a report to merge
 - 2.6.6.1.3 In the bottom window select a report to merge into
 - 2.6.6.1.4 Click *Merge*

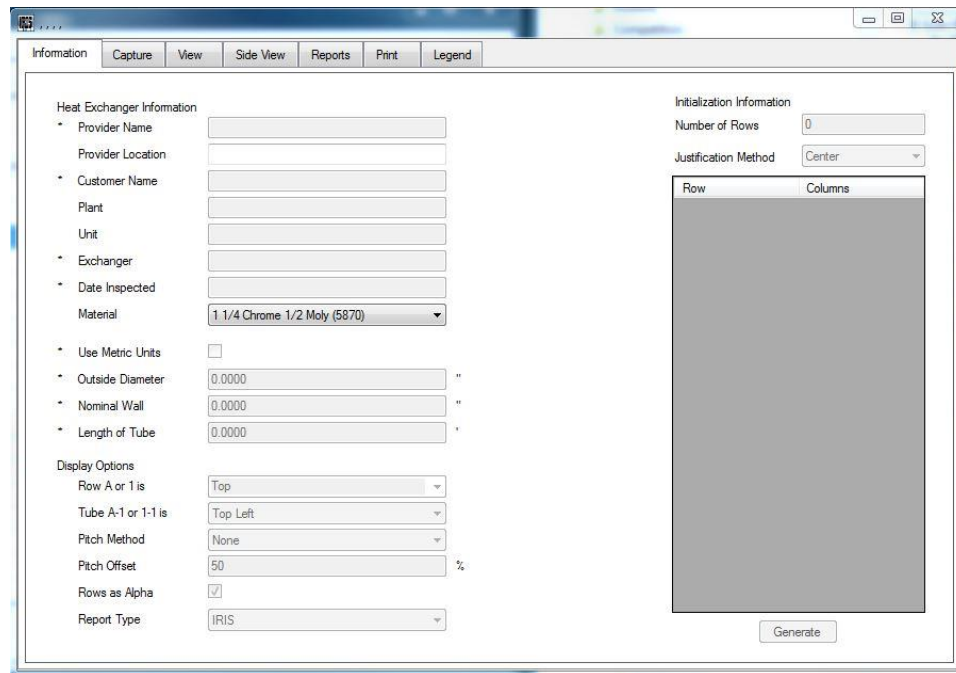
3. Capture Tab



- 3.1 *Note:* At this stage the Gray download cable with USB adapter should be connected between the parallel printer port of the IRIS to the USB port of the computer.
- 3.2 Select the Capture Source
 - 3.2.1 All available COM ports should be listed be sure to select the port with the Gray Download cable and USB Adapter.
 - 3.2.2 *Note:* Only one exchanger can be downloaded at a time, therefore after the inspection is complete on an exchanger, it must be downloaded before the next inspection is started.
- 3.3 Select the *Capture* button
- 3.4 **Downloading report and B-Scan data from the IRIS 9000**
 - 3.4.1 From the IRIS 9000, perform the following procedures to send report and B-Scan data to IRIS-Vision 4.0:
 - 3.4.1.1 Press *Control + N* to activate the Print Set-up Mode, on this screen select *Output* for both *Images* and *Report*, then press *Enter*
 - 3.4.1.2 On the next screen select *Laptop* and either (*Selected*) or *All*.
 - 3.4.1.2.1 If *All* is selected, type in first and last image to print. Press *Enter*
 - 3.4.1.2.2 If *Selected* is selected, the first stored image will appear when *Enter* is pressed. ← & → arrows will move to next image. *M* will mark and unmark image. When marking or unmarking is finished, press

- Enter*. Downloading marked images will begin.
- 3.4.1.3 After selected images are downloaded, the IRIS will ask do you want to delete all images from memory. (No) Yes
 - 3.4.1.3.1 Note: If Yes is selected, all stored images will be deleted.
 - 3.4.1.4 The next screen is for downloading the report
 - 3.4.1.4.1 Select *Laptop* and press *Enter*.
 - 3.4.1.5 After the report is downloaded the IRIS will ask do you want to delete all Report Lines from memory. (No) Yes
 - 3.4.1.5.1 Note: If yes is selected, all stored report lines will be deleted.
- 3.5 After data is sent from the IRIS 9000 press *Import Data* in the IRIS-Vision software.
- 3.6 **Downloading C-Scan data from the IRIS 9000**
- 3.6.1 From the IRIS 9000 perform the following:
 - 3.6.1.1 When at the beginning of the tube press Ctrl + L to send C-Scan data.
 - 3.6.1.2 When at the end of the tube press Ctrl + L to stop sending when pressed.
 - 3.6.2 After data is sent for each tube press *Import Data*
 - 3.6.3 Repeat steps for each tube
- 3.7 The bottom field will have all downloaded B-scans and C-Scans listed
- 3.7.1 Click on a scan line and click *Review Scan* to Review.
 - 3.7.2 Click on a scan line and click *Delete Scan* to delete a scan.

4. Information Tab



4.1 The Information screen is used to design the tube sheet layout

4.1.1 After the data is captured most fields will have the downloaded data.

4.1.2 Heat Exchanger Information. Revise and edit this information, if necessary.

4.1.2.1 *Provider Name*: The company name doing the inspection

4.1.2.2 *Provider Location*: Location of the company doing the inspection

4.1.2.3 *Customer Name*: Name of plant that owns the exchanger

4.1.2.4 *Plant*: Location of the plant that owns the exchanger

4.1.2.5 *Unit*: The area the exchanger is from or in

4.1.2.6 *Exchanger*: Identification number of the exchanger

4.1.2.7 *Date Inspected*: The date the exchanger was inspected

4.1.2.8 *Material*: The material the tubes are made of

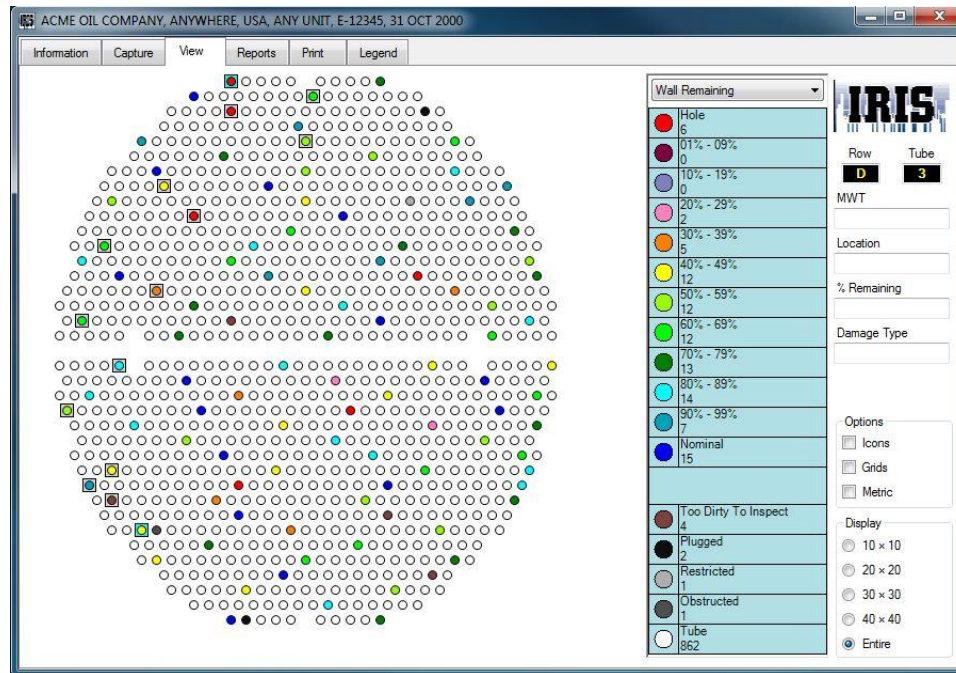
4.1.2.9 *Use Metric Units*: Check box if using metric, uncheck box if not metric

4.1.2.10 *Outside Diameter*: The outside diameter of the tubes in the exchanger

4.1.2.11 *Nominal Wall*: The wall thickness of the tube when new before any wall loss

- 4.1.2.12 *Length of Tube*: The length of the tube in the exchanger
- 4.1.3 Display Options
 - 4.1.3.1 *Row "A" or "1" is*: Where row "A" or "1" is located
 - 4.1.3.1.1 Select from dropdown list or type your own description
 - 4.1.3.2 *Tube "A-1" or "1-1" is*: Where row "A" or "1" and Tube "1" is located
 - 4.1.3.2.1 (Select from dropdown list
 - 4.1.3.3 *Pitch Method*: If the tubes are pitched (Offset)
 - 4.1.3.3.1 If no tube pitch: Select *None*
 - 4.1.3.3.2 If the odd numbered rows are pitched: Select *Odd*
 - 4.1.3.3.3 If the even numbered rows are pitched: select *Even*
 - 4.1.3.4 *Pitch Offset*: The distance the tubes are pitched (Offset)
 - 4.1.3.4.1 Default setting is *50*
 - 4.1.3.5 *Rows as Alpha*: Check box if using Alphabet for rows, uncheck box if using numbers for rows
- 4.1.4 Initialization Information
 - 4.1.4.1 *Number Of Rows*: Enter the total number of rows in the exchanger
 - 4.1.4.2 Justification Method:
 - 4.1.4.2.1 Select *Center* to build the exchanger from the center out
 - 4.1.4.2.2 Select *Left* to build the exchanger from left to right
 - 4.1.4.2.3 Select *Right* to build the exchanger from right to left
 - 4.1.4.3 *Row/Columns field*: Enter the number of tubes in each row.
- 4.2 When all information is entered and correct, select *Generate*.

5. View Tab



5.1 Wall Remaining

5.1.1 Displays the lowest readings in each tube by color or icons

5.1.2 Place the mouse pointer over a tube to view the row, tube, minimum wall thickness, location, percentage of wall remaining and type of damage

5.1.2.1 This information will be displayed to the right of the *View Screen* once the report has been applied.

5.1.2.2 To view a captured B-Scan move the mouse pointer to a tube displayed with a Gray background and right Click

5.1.2.3 To view a captured C-Scan move the mouse pointer to a tube displayed with a blue background and right click

5.1.2.4 Legends are displayed with the tube count for each

5.1.2.5 Options:

5.1.2.5.1 If *Icons* is selected the legends will change to icons

5.1.2.5.2 If *Grid* is selected a grid will be displayed on the map

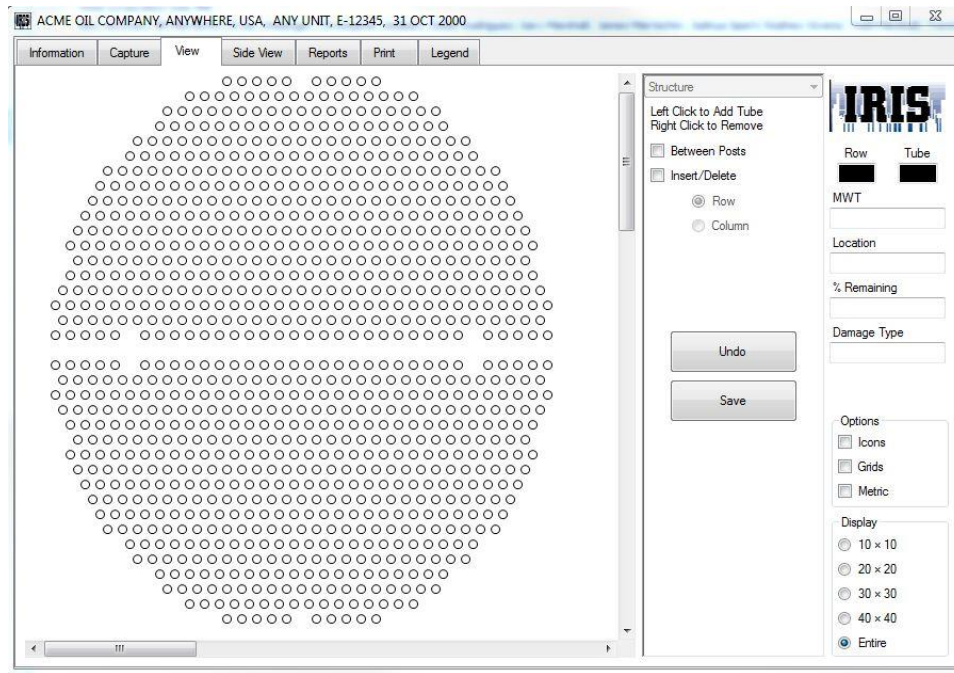
5.1.2.5.3 If *Metric* is selected all information will be displayed in Metric

5.1.2.6 Display:

5.1.2.7 If 10 x 10 is select the map will be displayed 10 tubes from left to right and 10 tubes from top to bottom

- 5.1.2.8 If 20 x 20 is select the map will be displayed 20 tubes from left to right and 20 tubes from top to bottom
- 5.1.2.9 If 30 x 30 is select the map will be displayed 30 tubes from left to right and 30 tubes from top to bottom
- 5.1.2.10 If 40 x 40 is select the map will be displayed 40 tubes from left to right and 40 tubes from top to bottom
- 5.1.2.11 If Entire is select the map will be displayed all tubes from left to right and all tubes from top to bottom

5.2 Structure



- 5.2.1 Note: No information will appear in the tubes while in *Structure* mode.
- 5.2.2 The tube layout can be modified or redesigned in the *Structure* mode
- 5.2.3 In the *Structure* mode, tubes, rows of tubes, blank rows and/or columns can be added or deleted
 - 5.2.3.1 To add or erase a tube, move the mouse pointer where the tube is to be added or deleted and left click to add and right click to delete.
 - 5.2.3.2 To add or delete a row of tubes, select *Between Posts*, then move the mouse pointer where the row should start and left click to add and right click to delete, and then move the mouse pointer to where the row should end and repeat.

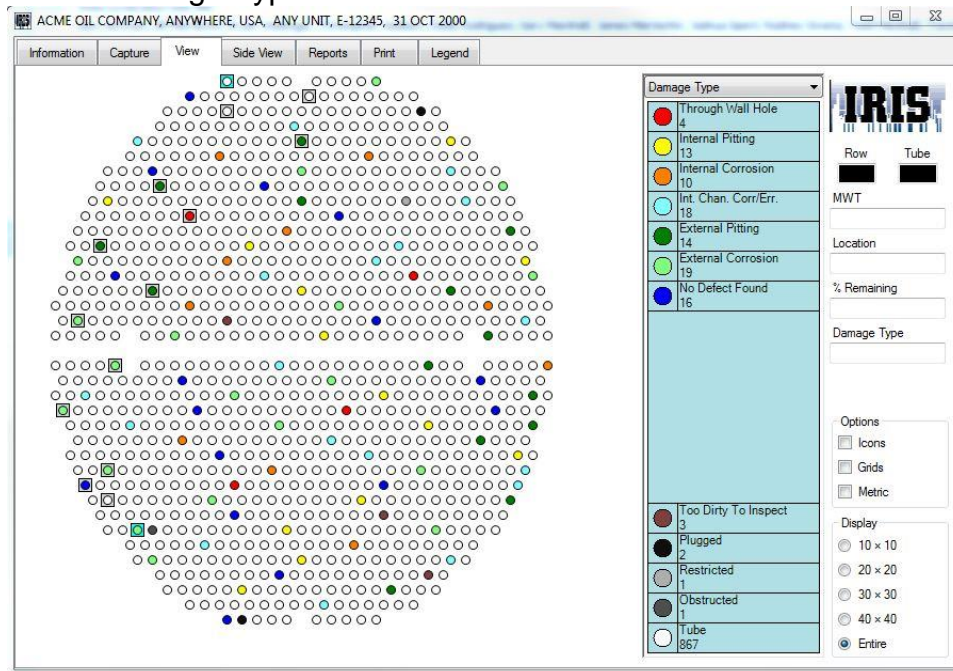
5.2.3.3 To insert or delete a blank row or column, Select *Insert/Delete* and then *Row* or *Column*, then move the mouse pointer where the blank row or column should be inserted or deleted. Left click to insert or right click to delete.

5.2.3.4 After the exchanger is changed select *Undo* or *Save*

5.2.3.4.1 *Undo* will set the exchanger back to the way it was before entering this screen

5.2.3.4.2 *Save* will save all changes made to the exchanger while in this screen

5.3 Damage Type

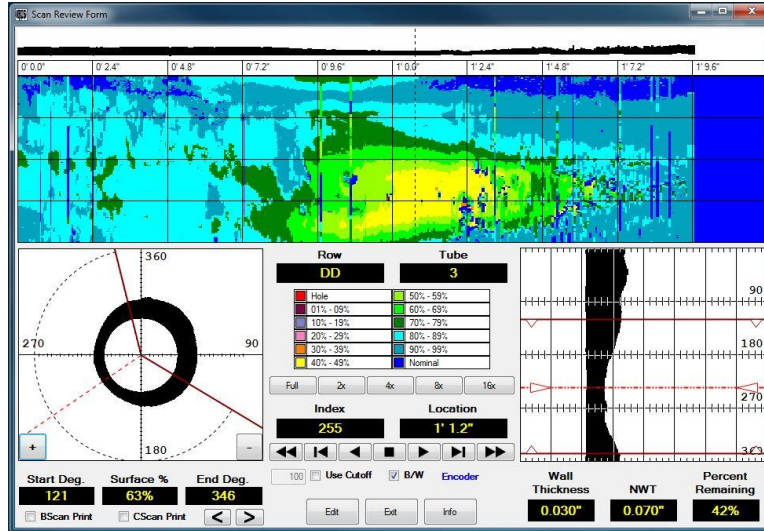


5.3.1 Displays the type of damage in each tube by color or icons

5.4 B-Scan / C-Scan

Longitudinal Scan →

Circular B-scan →



← C-Scan

← B-Scan

5.4.1 The top field is a longitudinal Scan and is a B-Scan of the entire area recorded.

5.4.1.1 Clicking on the Longitudinal scan will display the B-Scan of the selected area in the bottom left and right

5.4.2 The colored field is a C-Scan and displays the remaining wall thickness of the area recorded. These colors correspond to the legends in the middle of the screen.

5.4.2.1 Clicking on the C- scan will display the B-Scan of the selected area in the bottom left and right

5.4.2.2 The colors correspond to the legends in the middle of the page

5.4.2.3 To enlarge the view, click on the magnification buttons below the legends

5.4.2.3.1 Full shows the full tube

5.4.2.3.2 2x magnifies by two times

5.4.2.3.3 4x magnifies by four times

5.4.2.3.4 8x magnifies by eight times

5.4.2.3.5 16x magnifies by sixteen times

5.4.2.4 The scans can also be viewed by using the buttons below the *Index* and *Location*

5.4.2.4.1 ◀◀ = Move cursor to beginning

5.4.2.4.2 ◀ = Move cursor back one scan

5.4.2.4.3 ◀ = Run cursor in reverse

5.4.2.4.4 ■ = Stop cursor

5.4.2.4.5 ▶ = Run cursor forward

5.4.2.4.6 ▶ = Move cursor forward one scan

5.4.2.4.7 ▶▶ = Move cursor to end.

5.4.3 The bottom left field is a circular B-Scan

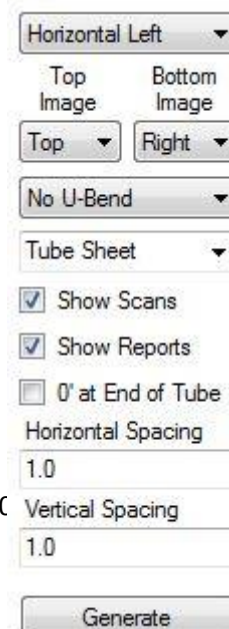
- 5.4.3.1 The percent a defect covers the circumference of a tube can be displayed by:
 - 5.4.3.1.1 Left clicking on the beginning of the defect
 - 5.4.3.1.2 Right clicking on the end of the defect
 - 5.4.3.1.3 This will display:
 - 5.4.3.1.3.1 *Start Deg.*
 - 5.4.3.1.3.2 *Surface %*
 - 5.4.3.1.3.3 *End Deg.*
- 5.4.4 The bottom right field is a B-Scan
 - 5.4.4.1 Click and hold the left mouse button on the field labeled B-Scan and move the mouse over the scan to display the remaining wall.
 - 5.4.4.1.1 To override the remaining wall displayed.
 - 5.4.4.1.1.1 Hold the *Ctrl* key and press the left mouse button this will move a cursor for the ID. Once the cursor is correctly set to the ID let go of both the left mouse button and the *Ctrl* key.
 - 5.4.4.1.1.2 Hold the *Ctrl* key and press the right mouse button this will move a cursor for the OD. Once the cursor is correctly set on the OD and the correct remaining wall is displayed let go of both the right mouse button and the *Ctrl* key.
- 5.4.5 To Print the desired B- and/or C-Scan's
 - 5.4.5.1 Check the box next to *BScan Print* or *CScan Print* for each selected scan
 - 5.4.5.2 Click the *Info* button and enter the desired information
 - 5.4.5.2.1 Under comments select the damage type for the dropdown list or type your own description
 - 5.4.5.2.2 When finished select *Done*
 - 5.4.5.3 After all desired images are stored click *Exit* to return to the *View* page
 - 5.4.5.4 < or > to move through created images
- 5.4.6 Select *Use Cutoff* to remove noise from the OD down to the nominal wall thickness
- 5.4.7 Select *B/W* to display B-Scans in black and white
- 5.4.8 Unselect *B/W* to display B-Scans in color per legends

6. Side View Tab



- 6.1 The side view is a layout of the defects found in the exchanger at the location where they were found and displayed by color legend as per remaining wall thickness.
- 6.2 When first coming to this page *Generate* must be clicked to have the exchanger side view appear.
- 6.3 Moving the cursor over any color defect will display the Row, Tube, MWT, Location % Remaining, to the top right.

6.4 Options on bottom



left

Item 1 →

Item 2 → ← *Item 3*

Item 4 →

Item 5 →

- 6.5 Top dropdown (*Item 1*)
 - 6.5.1 *Vertical Up*: Inspection end on top.
 - 6.5.2 *Vertical Down*: Inspection end on bottom
 - 6.5.3 *Horizontal Left*: Inspection end on left
 - 6.5.4 *Horizontal Right*: Inspection end on right
- 6.6 Top Image / Left Image dropdown (*Item 2*)
 - 6.6.1 When either Horizontal layout is selected the text will read *Top Image*
 - 6.6.1.1 *Top Image* dropdown
 - 6.6.1.1.1 *Left*: Looking at exchanger from the left side
 - 6.6.1.1.2 *Right*: Looking at exchanger from the right side
 - 6.6.1.1.3 *Top*: Looking at exchanger from the top down
 - 6.6.1.1.4 *Bottom* :Looking at exchanger from the bottom up
 - 6.6.2 When either vertical layout is selected the text will read *Left Image*
 - 6.6.2.1 *Left Image* dropdown
 - 6.6.2.1.1 *Left*: Looking at exchanger from the left side
 - 6.6.2.1.2 *Right*: Looking at exchanger from the right side
 - 6.6.2.1.3 *Front*: Looking at exchanger from the front to rear
 - 6.6.2.1.4 *Rear*: Looking at exchanger from the rear to front
- 6.7 Bottom Image / Right Image dropdown (*Item 3*)

- 6.7.1 When either Horizontal layout is selected the text will read *Bottom Image*
 - 6.7.1.1 *Bottom Image* dropdown
 - 6.7.1.1.1 *Left*: Looking at exchanger from the left side
 - 6.7.1.1.2 *Right*: Looking at exchanger from the right side
 - 6.7.1.1.3 *Top*: Looking at exchanger from the top down
 - 6.7.1.1.4 *Bottom* :Looking at exchanger from the bottom up
- 6.7.2 When either vertical layout is selected the text will read *Right Image*
 - 6.7.2.1 *Right Image* dropdown
 - 6.7.2.1.1 *Left*: Looking at exchanger from the left side
 - 6.7.2.1.2 *Right*: Looking at exchanger from the right side
 - 6.7.2.1.3 *Front*: Looking at exchanger from the front to rear
 - 6.7.2.1.4 *Rear*: Looking at exchanger from the rear to front
- 6.8 Next dropdown menu (*Item 4*)
 - 6.8.1 *No U-Bend*: Will show a straight tube exchanger
 - 6.8.2 *Top-to-Bottom*: will show U-bend tubes from top half to bottom half
 - 6.8.3 *Left-to-Right*: Will show U-Bend tubes from left half to right half
- 6.9 Next dropdown menu (*Item 5*)
 - 6.9.1 Select the text that should appear to identify the inspection tubesheet
 - 6.9.2 Type an alternate description
- 6.10 Show Scans: Show B-Scan and C-Scan data on the side view
 - 6.10.1 If checked scan data will be shown on the side view
 - 6.10.2 If unchecked scan data will not be shown on the side view
- 6.11 *Show Reports*: Show report line data on the side view
 - 6.11.1 If checked, report line data will be shown on the side view
 - 6.11.2 If unchecked, report line data will not be shown on the side view
- 6.12 *0' at End of Tube*: Where zero location should be located
 - 6.12.1 If checked zero length will be at the tubesheet opposite the inspection
 - 6.12.2 If unchecked zero length will be at the tubesheet of inspection
- 6.13 *Horizontal Spacing*: In this field you can set the distance between the tubes horizontally, to shape the side view correctly

6.14 *Vertical Spacing*: In this field you can set the distance between the tubes vertically, to shape the side view correctly

6.15 Generate: Will show the side view of the exchanger in the field to the left.

6.16 Tube sheets and supports:

6.16.1 To insert a Tubesheet or support hold the *Ctrl* key, left click and drag the mouse in the location for the tubesheet or support.

6.16.2 Once the tubesheet or support is created choices are:

6.16.2.1 Fore: Click on the color field to select the fore color

6.16.2.2 Back: Click on the color field to select the back color

6.16.2.3 Solid: Will fill with fore color

6.16.2.4 Horizontal: Will insert horizontal line with fore color

6.16.2.5 Vertical: Will insert vertical lines with fore color

6.16.2.6 Diagonal: Will insert diagonal lines with fore color

6.16.2.7 Cross: Will insert cross pattern with fore color

6.16.2.8 None: Will fill with nothing.

6.16.2.8.1 This option is good for defects under the tubesheet or supports

6.16.3 Repeat for the next tube sheet or support.

6.16.3.1 Note: The software will remember the last Baffle settings. So, once drawn, it will show the same fore color, back color and style.

6.16.3.2 To edit just click on the field that requires editing and change.

6.16.4 To move a tubesheet or support: Click and drag to desired location

6.16.5 To delete a tubesheet or support: Click and press delete.

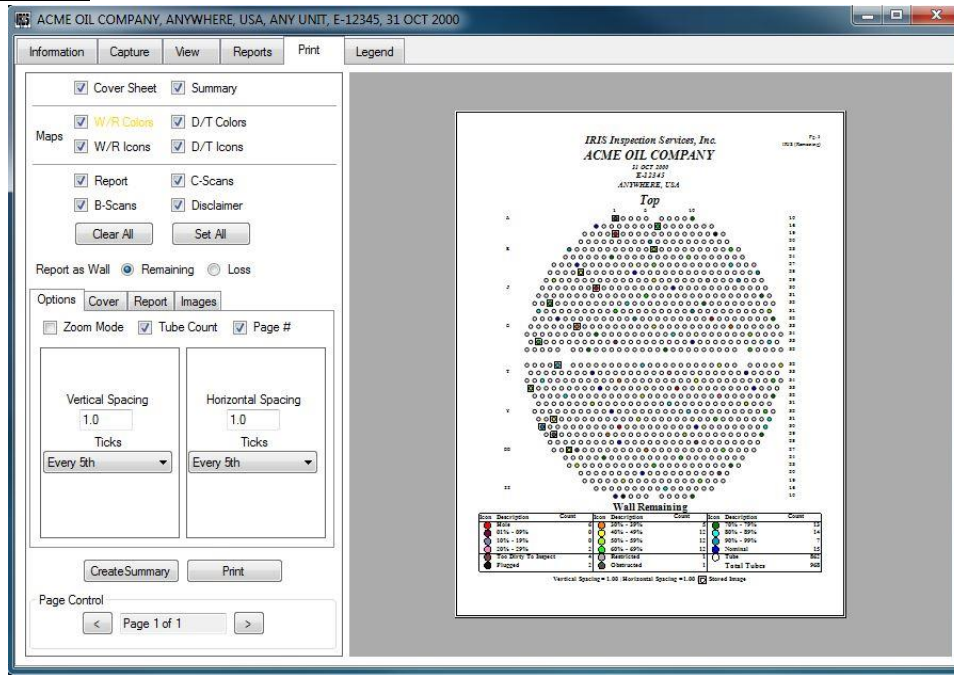


7. Reports Tab

Row	Col	MWT	Type	Location	Per%	Comments	Errors
1	1	0.000"	Through Wal...	0' 2.1"	0		
2	A	0.053"	External Corr...	1' 5.99"	76		
3	B	0.070"	No Defect F...		100		
4	B	0.048"	Internal Coro...	0' 0.3"	69		
5	C	0.000"	Through Wal...	0' 2.1"	0		
6	C	----	Plugged				
7	D	0.065"	Int. Chan. Co...	0' 3.4"	93	Bowed @ 1'	
8	E	0.067"	Int. Chan. Co...	0' 6.1"	96		
9	E	0.038"	External Pitting	0' 3.0"	54		
10	E	0.048"	Internal Pitting	0' 6.1"	69		
11	F	0.052"	Internal Coro...	0' 8.1"	74		
12	F	0.038"	Internal Coro...	0'10.0"	54		
13	G	0.070"	No Defect F...		100		
14	G	0.040"	External Corr...	0' 3.0"	57		
15	G	0.062"	Int. Chan. Co...	0' 5.5"	89		
16	H	0.031"	External Pitting	0' 3.0"	44		
17	H	0.070"	No Defect F...		100		
18	H	0.065"	External Corr...	0' 6.1"	93		
19	I	0.035"	Internal Pitting	0'11.0"	50		
20	I	0.032"	External Pitting	0' 7.0"	46		
21	I	----	Restricted				

- 7.1 After data is imported this screen displays report information on tubes in the imported exchanger.
 - 7.1.1 Check report for correctness. Correct if needed.
- 7.2 Across the bottom of the screen are two tabs
 - 7.2.1 IRIS 9000 Spreadsheet
 - 7.2.1.1 This tab is used to view the report spread sheet.
 - 7.2.1.2 To sort the report lines by alpha or numeric click the *Row* column
 - 7.2.1.3 To sort the report lines from lowest reading to highest reading click the *MWT* column
 - 7.2.2 Raw Report
 - 7.2.2.1 This tab is used to view the raw report downloaded from the IRIS 9000
- 7.3 Across the bottom are four buttons
 - 7.3.1 Export Report
 - 7.3.1.1 Will export the report data to Excel
 - 7.3.2 Import Report
 - 7.3.2.1 Will import report data from a excel file
 - 7.3.3 Insert Report Line
 - 7.3.3.1 Will open a window to manually enter a report line
 - 7.3.4 Delete Report Line
 - 7.3.4.1 Will delete a selected report line
- 7.4 If the report has errors, a note will appear in the *Errors* column

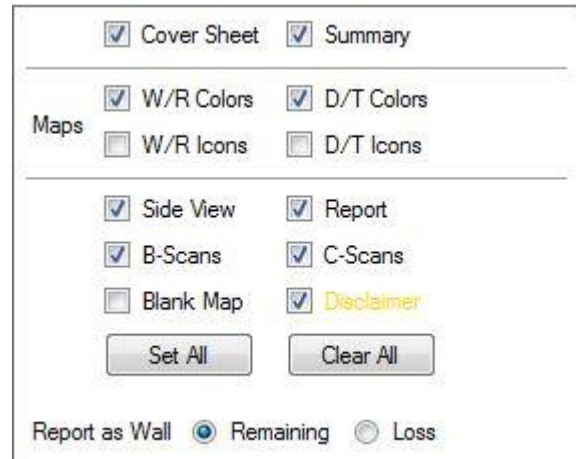
8. Print Tab



8.1 In the top left section there are:

8.1.1 Twelve print check boxes (Note: Only boxes with checks will print when the print button is clicked)

8.1.2 Right clicking on any of these will pull up that report page in the review window to the right



- 8.1.2.1 *Cover Sheet*: Cover page for the report
- 8.1.2.2 *Summary*: Summary of what was found in the exchanger and anything else that the client should know about the exchanger
- 8.1.2.3 *W/R Colors*: Wall Remaining tubesheet map using color legends
- 8.1.2.4 *W/R Icons*: Wall remaining tubesheet map using icon legends
- 8.1.2.5 *D/T Colors*: Damage type tubesheet map using color legends
- 8.1.2.6 *D/T Icons*: Damage type tube sheet map using icon legends

- 8.1.2.7 Side View: Wall remaining side view of the exchanger using color legends
- 8.1.2.8 Report: Report lines for each tube inspected
- 8.1.2.9 B-Scans: Images of B-Scans marked to be printed
- 8.1.2.10 C-Scans: images of C-Scans marked to be printed
- 8.1.2.11 Blank Map: Blank tubesheet map without data
- 8.1.2.12 Disclaimer: States the limit of responsibility the inspector and company accept for the inspection data
- 8.1.3 Two buttons
 - 8.1.3.1 *Clear All* will unmark all check boxes
 - 8.1.3.2 *Set All* will mark all check boxes
- 8.1.4 Two check circles
 - 8.1.4.1 *Report as Wall:*
 - 8.1.4.1.1 *Remaining:* Will print all report data in remaining wall thickness
 - 8.1.4.1.2 *Loss:* Will print all report data in loss wall thickness

8.2 In the center Left section are four tabs:

8.2.1 Options:

8.2.1.1 *Zoom:* When checked, the preview image on the right will zoom.

8.2.1.2 *Tube Count:* When checked, the preview image on the right of the maps will show the total number of tubes next to each row.

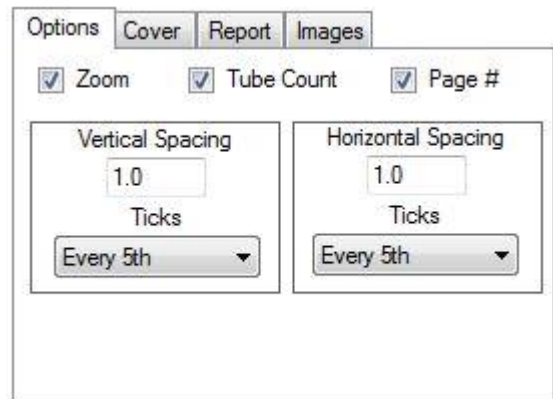
8.2.1.3 *Page #:* When checked, each page of the report will have the page number printed in the top right corner

8.2.1.4 *Vertical Spacing:* In this field, you can set the distance between the tubes vertically, to shape the tubesheet map correctly

8.2.1.4.1 *Ticks:* Used to set which rows on the tubesheet maps are indicated. The dropdown menu has the following options:

8.2.1.4.1.1 *None:* No row will be indicated

8.2.1.4.1.2 *Every:* Every row will be indicated



- 8.2.1.4.1.3 *Every 5th*: Every 5th row will be indicated
- 8.2.1.4.1.4 *First and Last*: Only the first and last rows will be indicated
- 8.2.1.5 *Horizontal*: In this field you can set the distance between the tubes horizontally, to shape the tubesheet map correctly
 - 8.2.1.5.1 *Ticks*: Used to set which columns on the tubesheet maps are indicated. The dropdown menu has the following options:
 - 8.2.1.5.1.1 *None*: No column will be indicated
 - 8.2.1.5.1.2 *Every*: Every column will be indicated
 - 8.2.1.5.1.3 *Every 5th*: Every 5th column will be indicated
 - 8.2.1.5.1.4 *First and Last*: Only the first and last columns will be indicated

8.2.2 Cover:
8.2.2.1

All of this information will show on the cover sheet of the report.

Options	Cover	Report	Images
Date	31 OCT 2000		
Customer	ACME OIL COMPANY		
Plant	ANYWHERE, USA		
Unit	ANY UNIT		
Exchanger	E-12345		
Exch. Name			
Technician	Ken Miertschin		

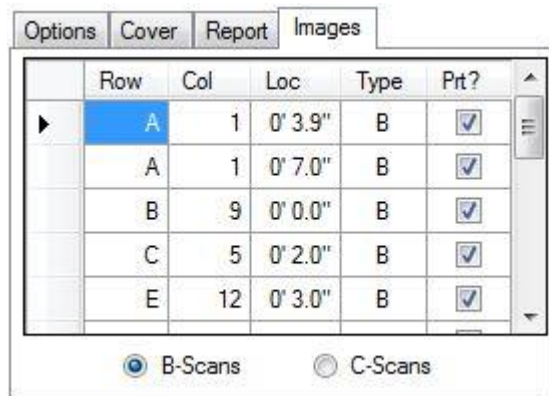
- 8.2.2.2 *Date*: Date the inspection was done (Automatically filled in)
- 8.2.2.3 *Customer*: Name of the plant that owns the exchanger (Automatically filled in)
- 8.2.2.4 *Plant*: Location of the plant that owns the exchanger (Automatically filled in)
- 8.2.2.5 *Unit*: The area the exchanger is from or in (Automatically filled in)
- 8.2.2.6 *Exchanger*: Identification number of the exchanger (Automatically filled in)
- 8.2.2.7 *Exch. Name*: Name of the exchanger (manually fill in)
- 8.2.2.8 *Technician*: Name of technician that performed inspection (manually fill in)

- 8.2.3 Report:
 - 8.2.3.1 *All*: Will print all report line pages
 - 8.2.3.2 *Selected Pages*: Will print all selected report line pages



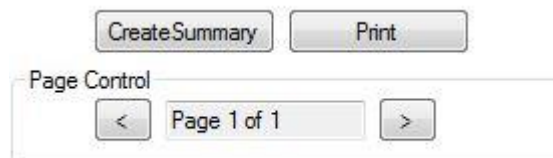
8.2.3.2.1 Enter page numbers to print separated by commas.

- 8.2.4 Images:
 - 8.2.4.1 On this tab B-Scan and C-Scan images that have been set to print can be skipped by unchecking the box to the right of that image.



- 8.2.4.2 *B-Scans*: Checking *B-Scans* will show a list of B-Scan images set to print
- 8.2.4.3 *C-Scans*: Checking *C-Scans* will show a list of C-Scan images set to print

- 8.3 Bottom right field
 - 8.3.1 Create Summary: Used to type a summary of the results found on the exchanger

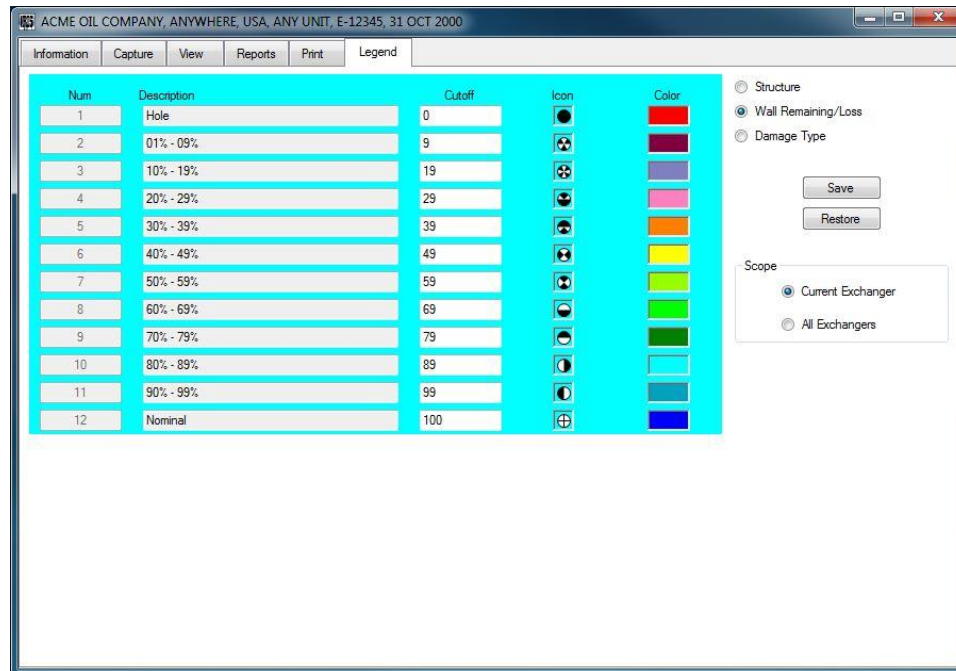


- 8.3.1.1 Clicking will open Notepad
 - 8.3.1.1.1 Type the summary
 - 8.3.1.1.2 Click *file* select *Save*
 - 8.3.1.1.3 Exit
- 8.3.1.2 To edit summary click *Create Summary*
 - 8.3.1.2.1 Repeat steps for creating the summary
- 8.3.2 *Print*: Print all checked boxes in the top left field
 - 8.3.2.1 When *Print* is selected a new window will open.

8.3.2.1.1 Select the printer that is to be used and select print.

8.3.3 *Page Control:* When reviewing the report, any section that has multiple pages can be moved through by using < or >

9. Legend Tab



- 9.1 The *Legends* tab brings up the *Legends* screen.
- 9.2 This screen identifies what each color and icon represents.
- 9.3 On this page there are three lists to be displayed on the screen:
 - 9.3.1 *Structure*
 - 9.3.2 *Wall Remaining/Loss*
 - 9.3.3 *Damage Type*
- 9.4 To change the legends:
 - 9.4.1 Select the display to change
 - 9.4.2 Select the icon or color to change
 - 9.4.3 Select the desired new icon or color
 - 9.4.4 Click *OK*.
- 9.5 Select if the changes should be for the *Current Exchanger* only or *All Exchangers*
- 9.6 To save the new settings click *Save*.
- 9.7 To restore the default settings click *restore*.