

DATASTORE 2.0

INSTALLATION AND OPERATION MANUAL

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1. Intro & Installation

THEORY OF OPERATION

You must have moisture sensor firmware that is version 5.3 or higher. DataStore 2.0 has been programmed to work on this version; any older versions of firmware will not be compatible, and DataStore will not work.

DataStore is to be used with GreenStar Yield Monitoring System and GreenStar Harvest Monitor systems and can hold the data from up to 12 different yield systems at one time.

DataStore will transfer field summaries and crop summaries from the GreenStar Yield Monitor or GreenStar Harvest Monitor to a personal computer in your office. DataStore will allow the user to view or print the summary information in an Excel spreadsheet or in an HTML format.

Table 1: System Requirements

Combine Model	00,10	00, 10, 50	60
Hardware	4/5 CAN Sensor	Dual CAN	Harvest Monitor
*Software Version	5.60	6.51	1.01

***Software versions are subject to updates. To verify most recent software version, contact 1-888-GRN-STAR.**

Combine Cab Harness Installation

1. Take the Cab T-harness and the DataStore to the combine.



2. Unplug the cab harness 10-pin rectangular female connector from the GreenStar Display.



3. Connect the T-harness 10-pin rectangular male connector to the cab harness 10-pin rectangular female connector.



NOTE: The T-harness is labeled to help determine which connector to plug into which harness or component.

4. Connect the T-harness 10-pin rectangular female connector to the GreenStar Display. The 12-pin gray connector should hang below the display for easy connection to the DataStore.



5. Connect the DataStore to the gray connector on

the cab T-harness.



WARNING: Do not leave the DataStore connected while harvesting or when you are not downloading data to the computer. The unit should be connected ONLY when data is being transferred.

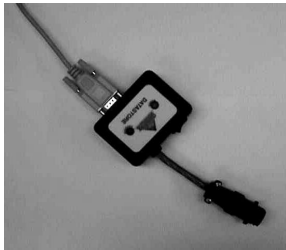
More information about transferring data to DataStore to follow later in this document.

Computer Harness Installation

1. Unpack the Serial Port Adapter, wall transformer, and the serial extension cable.

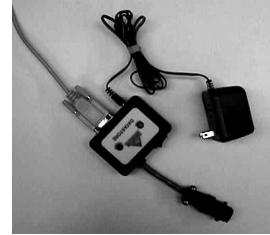


2. Connect the serial extension cable to the Serial Port Adapter and screw in the two connecting screws.



3. Connect the wall transformer to the Serial Port

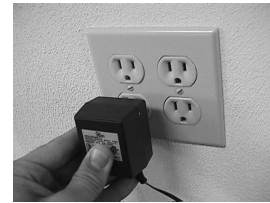
Adapter.



4. Connect the serial extension cable to the serial communications port on the back of the personal computer and screw in the two connecting screws.



5. Plug the wall transformer into a wall outlet.



6. Connect the DataStore to the connector on the Serial Port Adapter.



WARNING: Do not leave the DataStore connected while harvesting or when you are not downloading data to the computer. The unit should be connected ONLY when data is being transferred.

Installing DataStore Software

This section will step you through the installation of DataStore on your office computer. You will be prompted

for information during this procedure to customize your installation.

DataStore will work on the following platforms and corresponding versions of Microsoft Excel and web browsers:

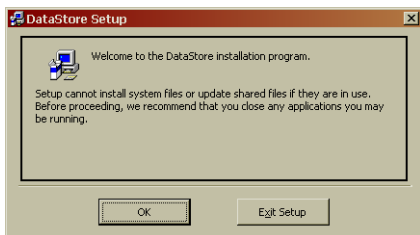
- Windows 98, ME, NT, 2000, XP [Home], and XP [Professional]
- Excel 97, 2000, Office XP
- HTML (e.g. MS Internet Explorer)

Install the DataStore software on your computer:

You must uninstall older versions of DataStore before installing the latest version. If you have an older version of DataStore currently installed, begin with Step 1 and uninstall. If you do not have any version of DataStore installed, proceed to step 5.

1. To uninstall DataStore, click **Start** and navigate to **Settings > Control Panel > Add/Remove Programs**.
2. Select **DataStore**.
3. Click **Change/Remove**.
4. Click **Yes**.
5. Close any open applications on your computer.
6. Restart your computer before installing the software.
7. Place the DataStore installation CD into your CD Rom Drive.
 - If it does not start on its own (Auto Run), go to the **Start** button and select **Run**. In the text box, enter **D:\setup.exe** (assuming D is your CD Rom drive letter) and click **OK**.
8. Click **OK**; the program will start copying initialization files.

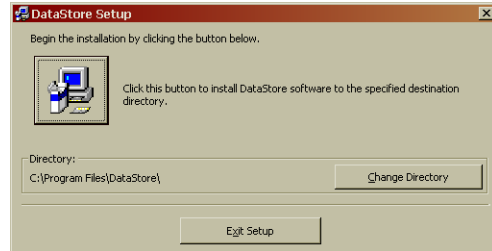
The DataStore Setup screen will appear to remind you to close any open applications.



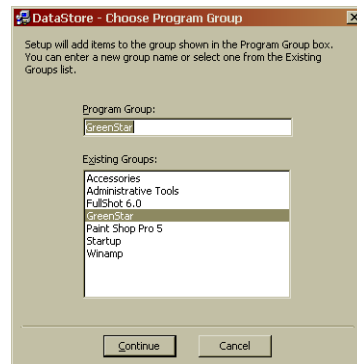
9. Close all open operations, and click **OK** to continue if all other programs are closed.

Otherwise, click on **Exit Setup** and close all other programs. Restart the install process.

The destination folder for the DataStore program is set to a default location; no changes are necessary unless you want to install it in a different location. If so, select **Change Directory** to select the new location.

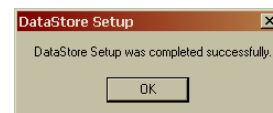


10. Click the large **computer icon** to continue.
11. The Choose Program Group screen shows you where the DataStore software will be installed. All DataStore installations will automatically be saved to a GreenStar folder. If you have installed JDmap or JDOffice on your system, this folder will already exist, and DataStore software will be added to it. You can select a different folder in the list if desired. Click **Continue** when done.



The installation process begins. A progress bar will indicate the installation progress. When the installation is finished, a message will state that the “DataStore Setup was completed successfully.”

12. Click **OK**.



2. Available Help

This application was created to provide the user a convenient way to retrieve, store, and analyze crop data gathered by the GreenStar Yield Monitoring System or GreenStar Harvest Monitor System. To ensure that you can easily learn to use this software, there are two forms of help always at your fingertips: a User's Guide, and an online Help system.

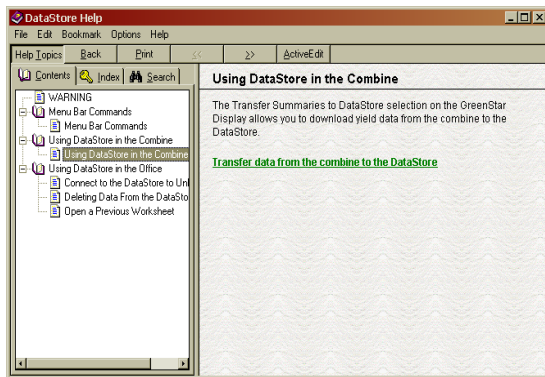
USER'S GUIDE

The User's Guide is designed to lead you through not only installing DataStore, but also using it. The User's Guide provides detailed information and instructions on how to use this system. It is intended to be used whenever you need assistance with DataStore.

ONLINE HELP

Once your software has been installed, you will find Help on the Command Bar.

Online Help is an easy-to-use mini program within DataStore that you can access at any time for assistance or clarification. Follow the instructions in the online Help to obtain information on program commands, or to learn how to accomplish specific program tasks.



3. Using DataStore

WARNING: Do not leave the DataStore connected while harvesting or when you are not downloading data to the computer. The unit should be connected ONLY when data is being transferred.

THEORY OF OPERATION

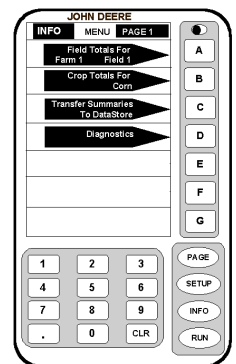
DataStore is to be used with a GreenStar Yield Monitoring System or a GreenStar Harvest Monitor System, and can hold the data from up to 12 different systems at one time. DataStore will transfer field summaries and crop summaries from the combine to a personal computer in the office. It then uses a software program that will allow the user to view or print the summary information.

Using DataStore in the Combine

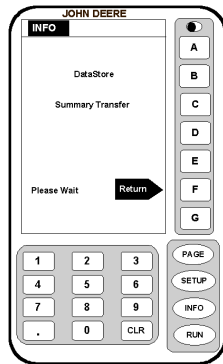
The "Transfer Summaries to DataStore" selection on the Info Menu page of the GreenStar Display allows the user to download yield data from the combine to the DataStore.

Transfer data from the combine to the DataStore:

1. Connect DataStore to cab T-harness.
2. Press the **Info** button on GreenStar Display.
3. Select **Yield Monitor** or **Harvest Monitor** (depending on your system) from the list.
4. Select **Transfer Summaries to DataStore** from the list.



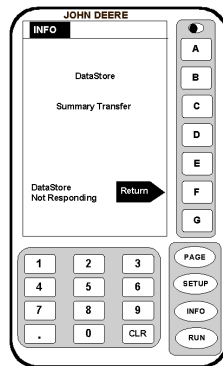
The DataStore Summary Transfer screen will appear while the system transfers summary information to the DataStore.



One of the following three screens will appear next:

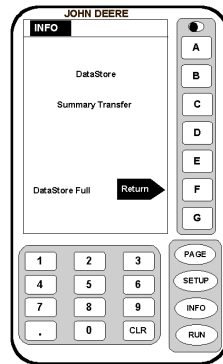
DataStore Not Responding

The Yield Monitor or Harvest Monitor can not find the DataStore. Check the connection and press the F button to return to the Info menu. Select “Transfer Summaries to DataStore” when the problem is fixed.



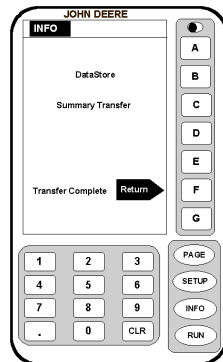
DataStore Full

Twelve monitors have already been downloaded to the DataStore. You must first delete at least one of them to make space available. Refer to “Deleting Data From DataStore” on page 8.



Transfer Complete

The transfer of the data was successful. You are now ready to download the data from the DataStore to your office computer.

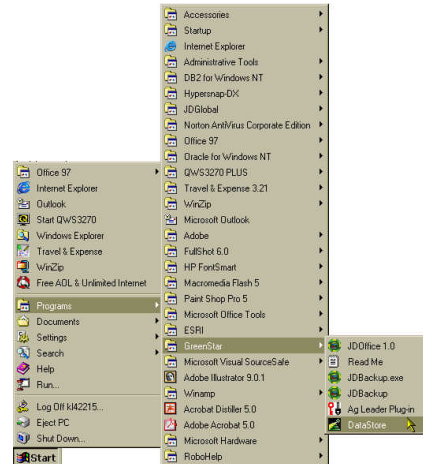


Using DataStore in the Office

The DataStore can hold information for up to 12 monitors at a time. Because it is intended to be used as a transfer device and not an archive device, the data will need to be transferred to your office computer. During the transfer, the data will be summarized on your computer. This file can be viewed, edited or printed.

The program automatically saves the file in the **C:\Program Files\DataStore\DS Sheets** default folder.

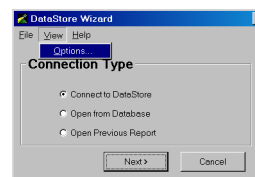
After plugging the DataStore harness into the **computer**, **start the application by selecting Program>GreenStar>DataStore** from the Start menu on your desktop.



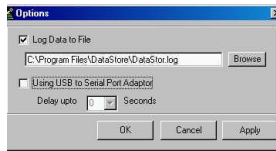
The Connection Type window will appear first. At this point you have one of three options: connect to the DataStore to download data, or open a previous spreadsheet, or open from database.

Log File Options

1. In the **DataStore Wizard**, click **View** to open the drop down menu.
2. Choose **Options**.



- Verify the correct location of DataStore.

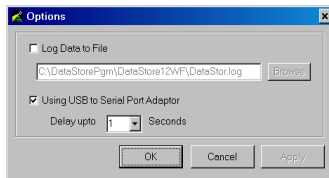


NOTE: The default location for DataStore is *C:\Program Files\DataStore\DataStor.log*

- To change the location, click in the box beside **Log Into File**. If the box is not checked, you will not be allowed to change the location of DataStore.

Serial Port Options

- In the **DataStore Wizard**, click on **View** to open the drop down menu.
- Choose **Options**.
- Place a check mark inside the box next to **Using USB to Serial Port Adaptor** by clicking inside the box.



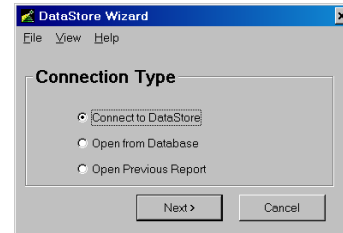
- Choose the appropriate number of seconds needed to transfer DataStore files.

NOTE: More time will be required for a large number of records. If you choose too few seconds, an error message will appear and direct you to choose a greater number of seconds.

- Click **OK**.

Connect to DataStore to Unload Data

- Select **Connect to DataStore**.



- Click **Next**.

The Searching for DataStore window will appear. Read the reminders on this screen before proceeding, because any variation from these will prevent you from unloading the data.



- Click **Search**.

The **Status** line will display the ports that are being polled. After initial connection, the Wizard will remember which port the Serial Port Adapter was connected to.

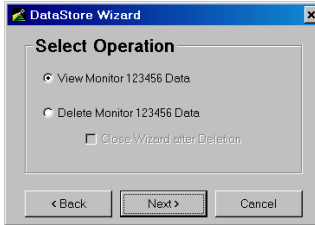
- Select the monitor (moisture sensor) serial number to unload from the list. Only one can be unloaded at a time.



- Click **Next**; a status bar will display the unloading progress.

A Select Operation window asks if you want to view the monitor data or delete it from DataStore. Remember, if

you delete the data before you view it, it will be lost.



To view the data, continue with these directions.

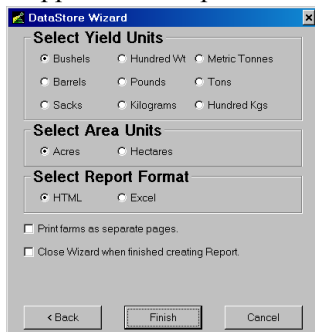
To delete the data, refer to “Deleting Data From DataStore” on page 8.

6. Select **View Monitor nnnn Data** (“nnnn” represents the monitor serial number).

NOTE: *The spreadsheet file must be viewed to be saved. If you delete a monitor’s information from the DataStore before opening it in Excel, the data is gone; it must be downloaded again from your combine.*

7. Click **Next**.
8. Select the **Yield Unit** desired.

The units highlighted in the **Select Units** screen are the ones which were selected in the combine. You can choose a different measurement when you unload the data. Both unit choices will appear on the spreadsheet.



9. Select the **Area Unit** desired.
10. Select Report Format (Microsoft Excel must be installed to generate an Excel report. A web browser must be enabled to create an HTML report).

All farms within one monitor will print on the same report. To have each farm’s information print as a separate Field Summary Report, check **Print farms as separate pages**.

If you want the DataStore to automatically close after the

report opens, Place a check mark in the **Close Wizard when finished creating worksheet** box.

11. Click **Finish**; the data will be displayed in an HTML format, unless another format was selected in step 10.

Deleting Data From DataStore

It is not necessary to delete data if returning to the same Monitor. The new data will update the old data on the DataStore.

To delete a monitor data from the DataStore, follow the previous Unload instructions.

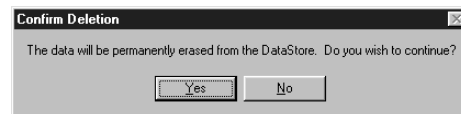
1. In the Select Operation window, select **Delete Monitor nnnn Data** (“nnnn” represents the monitor serial number).



HINT: If you want the DataStore program to automatically close after the data is deleted, check **Close Wizard after Deletion**. If this is left unchecked, the program will remain open.

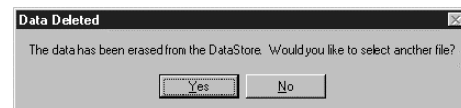
2. Click **Next**.

A Confirm Deletion window will open. Click **No** if you want to return to the Select Operation screen without deleting any data.



3. Click **Yes** to delete the data.

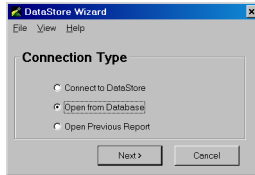
If the data was erased successfully, a message will open indicating success. At this time, you also have the opportunity to select another monitor file to delete.



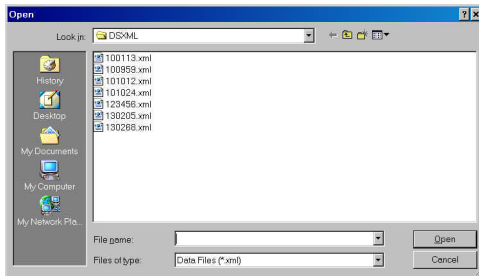
Selecting **No** will end the program; selecting **Yes** will return you to the screen to select the next monitor serial number to delete.

Open from Database

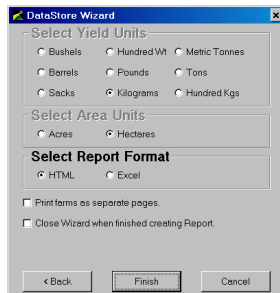
1. Click **Open from Database** and click **Next**.



2. Choose the file to open, and click **Open**.



3. Within the DataStore Wizard, choose either **HTML** or **Excel** to view the report.



4. Click **Finish**.

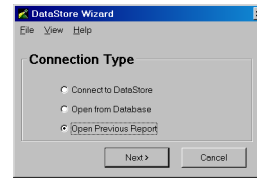
Open a Previous Report

Once a monitor's data has been opened from the DataStore as a report, the file is automatically saved to the **/Program Files/DataStore/DSsheets** default folder.

Open a previous worksheet:

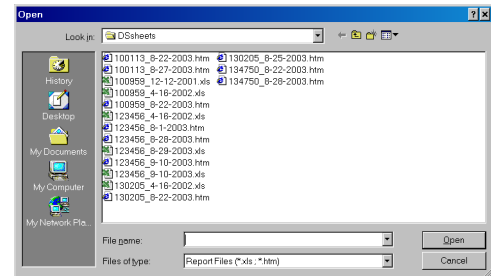
1. Select **Open Previous Report** from the Connection

Type screen.



2. Click **Next**.

Because all previously viewed data is saved to the DSsheets folder, an Open window will appear listing the spreadsheets saved there.



3. Select a **.xls** or **.htm** file by selecting it from the list.

HINT: The name of the file is the monitor number plus the date it was unloaded (e.g., 102987_9-30-2003.xls). Each time you unload the same monitor on the same day, a dash and number [starting with zero] will be added to the file name. The highest number denotes the latest downloaded data (e.g. 102987_9-30-2003-5.xls).

4. Click **Open**.

These spreadsheets can also be opened using the standard **File>Open** procedure within Excel.

Types of Spreadsheets

There are three worksheets created from the data: Field Summary, Crop Summary and Combine Setup. The following figures show sample worksheets. To access a different worksheet while in Excel, click the appropriate tab at the bottom of the screen.

Excel Field Summary Tab

Excel Combine Setup Tab

Excel Combine Summary Tab

NOTE: For Field and Crop Summaries, columns describing “Total Dry” and “Total Wet” weight information display the data in the unit of measure which was chosen in the combine.

Excel Crop Summary Tab

Sample Printed Excel Reports

GreenStar
DataStore Monitor 123456

DataStore Version 1.3a

Field Summary Report

Farm	Field	Crop	Area (Ac)	Yield Dry (Bu/Ac)	Yield Wet (Bu/Ac)	Total Dry (Bu)	Total Wet (Bu)	Total Dry (Bu)	Total Wet (Bu)	Moist (%)	Harv. Time (Hr)	Prod. (bu/ha)	Prod. (bu/ha)
1		Com	7	232	290	1626	1700	83263	85041	20.5	0.3	26.6	8322
		SBW	1.7	82	106	139	175	24288	25401	14.2	1	24.2	2438
		SBW	1.7	82	106	139	175	24288	25401	14.2	1	24.2	2438
		SBW	1.7	82	106	139	175	24288	25401	14.2	1	24.2	2438
		Com	7	232	290	1626	1700	83263	85041	20.5	0.3	26.6	8322
		MW	2.4	97	100	232	230	1500	6-30	0.7	C.I	24.7	2430
2		Flax (Car)	2.2	73	00	75	190	9730	1-31C	24	C.I	24.6	1030
		Flax (Car)	2.2	73	00	75	190	9730	1-31C	24	C.I	24.6	1030

123456_8-26-2003.xls Field Summary Page 1 of 1

Combine Model: 9500

Calibration Factors: Flow Comp Number:

Com	650	1.00
Millet	685	1.00
Rye (Euro)	605	1.00

123456_8-26-2003.xls Combine Setup Page 1 of 1

Combine Setup Report

Field Summary Report of all farm's data

GreenStar
DataStore Monitor 123456

DataStore Version 1.3a

Crop Summary Report

Crop	Area (Ac)	Yield Dry (Bu/Ac)	Yield Wet (Bu/Ac)	Total Dry (Bu)	Total Wet (Bu)	Total Dry (Bu)	Total Wet (Bu)	Moist (%)	Harv. Time (Hr)	Prod. (bu/ha)	Prod. (bu/ha)
Com	7	232	290	1626	1700	83263	85041	20.5	0.3	26.6	8322
Wheat	1.2	87	109	104	123	1789	5433	18.7	0	24.7	2410
Rye (Euro)	2.2	79	69	175	184	4789	11070	24	0.1	24.7	1038

123456_8-26-2003.xls Crop Summary Page 1 of 1

Crop Summary Report

Sample Printed HTML Reports

NOTE: HTML Reports should be printed in Landscape format.

DataStore Summary Report Page 1 of 4

GreenStar
DataStore Monitor 123456 DataStore Version 1.3b

Field Summary Report

Field	Crop	Area (ac)	Yield Cr; (bu/ac)	Yield St; (bu/ac)	Total Cr; (bu)	Total St; (bu)	Total Gr; (bu)	Total St; (bu)	Moist (%)	Harv. Time (hr)	Prod. (bu/hr)	Prod. (bu/hr)
1												
1	Corn	7.0	235	250	1655	1760	92703	95541	20.5	0.3	26.5	6232
2	Millet	1.2	97	108	116	129	5799	6430	19.7	0.0	24.7	2400
3	Millet	1.2	97	108	116	129	5799	0	19.7	0.0	24.7	2400
Summary Totals												
	Corn	7.0	235	250	1655	1760	92703	95541	20.5	0.3	26.5	6232
	Millet	2.4	97	108	232	258	11598	6430	19.7	0.1	24.7	2400
2												
1	Rye (E110)	2.2	79	89	175	198	9780	11070	24.0	0.1	24.6	1938
Summary Totals												
	Rye (E110)	2.2	79	89	175	198	9780	11070	24.0	0.1	24.6	1938

file //C:\Documents%20and%20Settings\vh32972\Local%20Settings\Temp\123456 8-26-2... 9/17/2003

HTML Report Sample Page 1

DataStore Summary Report Page 3 of 4

Combine Model: **9500**

	Calibration Factors:	Flow Comp Number:
Corn	650	100
Millet	695	100
Rye (E110)	605	100

file //C:\Documents%20and%20Settings\vh32972\Local%20Settings\Temp\123456 8-26-2... 9/17/2003

HTML Report Sample Page 3

DataStore Summary Report Page 2 of 4

GreenStar
DataStore Monitor 123456 DataStore Version 1.3b

Crop Summary Report

Crop	Area (ac)	Yield Cr; (bu/ac)	Yield St; (bu/ac)	Total Cr; (bu)	Total St; (bu)	Total Gr; (bu)	Total St; (bu)	Moist (%)	Harv. Time (hr)	Prod. (bu/hr)	Prod. (bu/hr)
Corn	7.0	235	250	1655	1760	92703	95541	20.5	0.3	26.5	6232
Millet	1.2	97	108	116	129	5799	6430	19.7	0.0	24.7	2400
Rye (E110)	2.2	79	89	175	198	9780	11070	24.0	0.1	24.7	1938

file //C:\Documents%20and%20Settings\vh32972\Local%20Settings\Temp\123456 8-26-2... 9/17/2003

HTML Report Sample Page 2