



Electrical Solutions Corporation

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Honeywell Corrosion Monitoring System

The corrosion monitoring system for the Amine Plant consists of 3 probes that are installed at the Contactor, Flash Tank, and the Reda Pumps. Each probe consists of 3 electrodes attached to one end of a rod and provisions for attaching an electrical cable to the opposite end. The electrode end of the probe is inserted into the process and the opposite end is connected to a 5-pin Amphenol connector, which in turn, is attached to the computer monitoring system.

The Corrosion Monitoring System actually measures the resistance of the process fluid between the electrodes. Based on this reading, the software calculates various types of corrosion values.

Starting the System

Starting the corrosion monitoring system is pretty easy and is illustrated on the next few pages.

Electrical Notes

Each probe should be tested prior to installation and any time the B-value (as seen in the HMI) is negative. There are 3 electrodes on one side of the probe, and a 5-pin connector on the other side. One of the pins is not used, and 2 of the pins are electrically connected together. So the electrician should be able to read continuity between each electrode and one of the pins at the connector. The continuity readings should vary between 0.2 ohms and 30 ohms. (One electrode should show continuity on (2) of the pins.) The electrician should also make sure that the electrodes are not shorted out to the probe body.

We are running FieldCET 2.16 software, on a WindowsXP, SP2 (Pentium III), machine. A serial cable connects a DB9 port on the PC to an RS232 to RS485 converter. The distance between PC and the converter is about 5'. From the converter, a 4-wire cable runs about 250' to a central location in the plant where it terminates at an interior power/communications unit. (2 of the wires are being used for communications --- (Data+ and Data-) --- and 2 of the wires are being used to supply 24VDC power the converter). The only thing currently in this j-box is an Omron 0.6A, 24 VDC power supply, a signal booster, and a terminal strip.

The power/communications unit is located at a central location in the plant, and provides a location where the RS485 network can be connected in a "Star" configuration.

From the power/communications unit, a separate cable is run to each SmartCET corrosion monitoring unit. The distance from the power/communications unit to the SmartCET units are:

1. Probe 1: 390'
2. Probe 2: 360'
3. Probe 3: 370'



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Data Archiving Notes

Every month when the corrosion coupons are pulled, the corrosion data should be archived by creating a new file, into which the HMI will write the corrosion data. This procedure will currently be performed by the Safety Tester.

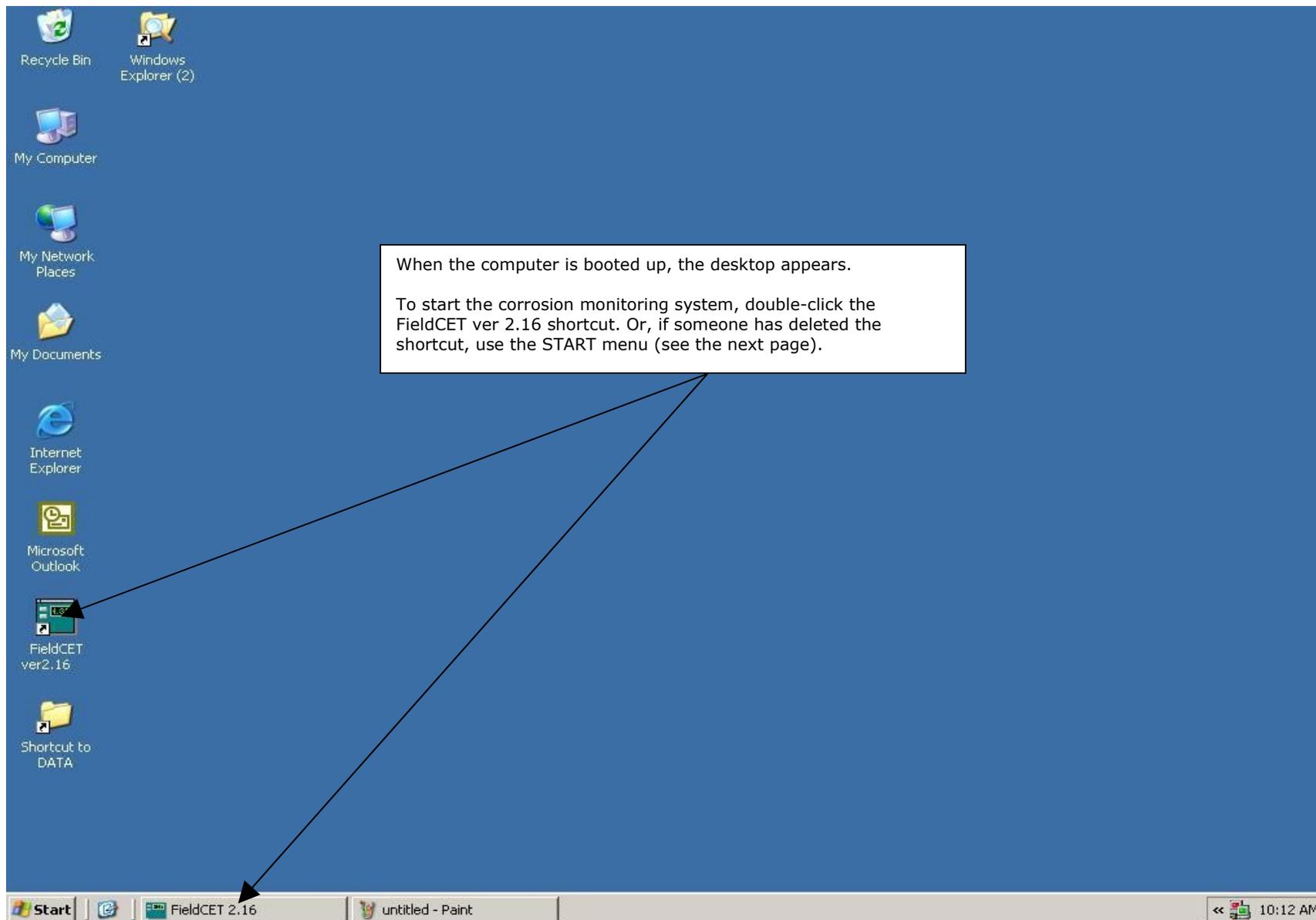
With the Corrosion Monitor System running (FieldCET):

1. Press the “Probe Settings” button.
2. Uncheck the “Auto Start on Reboot” check box.
3. Close and restart the application.
4. Press the Probe 1 “Settings” button.
5. Select a path where the new data will be stored.
 - a. C:\FieldCET\Data\foldername\filename
 - b. The folder name should have the format yyyy_mm_month (for example, 2007_05_May or 2007_04_April). If the file is named in this way it makes it easier to sort files and find the right one.
 - c. The filename should be in the format Probe#_yyyymmdd (for example Probe1_20070517 or Probe2_20070615. Use the date that the file is created.
 - d. Accept the changes.
6. Select the path for the new Probe 2 files.
7. Select the path for the new Probe 3 files.
8. Re-check the “Auto Start on Reboot” check box.
9. Close and Restart the application.
10. Verify that the new files have been created by checking the paths created in steps 5-7.



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Recycle Bin Windows Explorer (2)

My Computer

My Network Places

My Documents

Start

FieldCET 2.16

10:13 AM

If the shortcut on the desktop has been deleted, start the corrosion monitoring system by pressing *Start - Programs - FieldCET - FieldCET ver 2.16*.

- Accessories
- Administrative Tools
- Adobe
- AutomationDirect Tools
- Citrix ICA Client
- Computer Associates
- DirectSOFT 4
- EPSON
- FieldCET
 - FieldCET ver 2.16
- Games
- Microsoft Office
- Microsoft Office Tools
- PcBugDoctor
- SBC Yahoo! Dial
- Spybot - Search & Destroy
- Startup
- Yahoo!
- Adobe Reader 7.0
- Internet Explorer
- Microsoft Access
- Microsoft Excel
- Microsoft Outlook
- Microsoft PowerPoint
- Microsoft Word
- Outlook Express
- SBC Yahoo! Mail
- Windows Journal Viewer
- Windows Media Player



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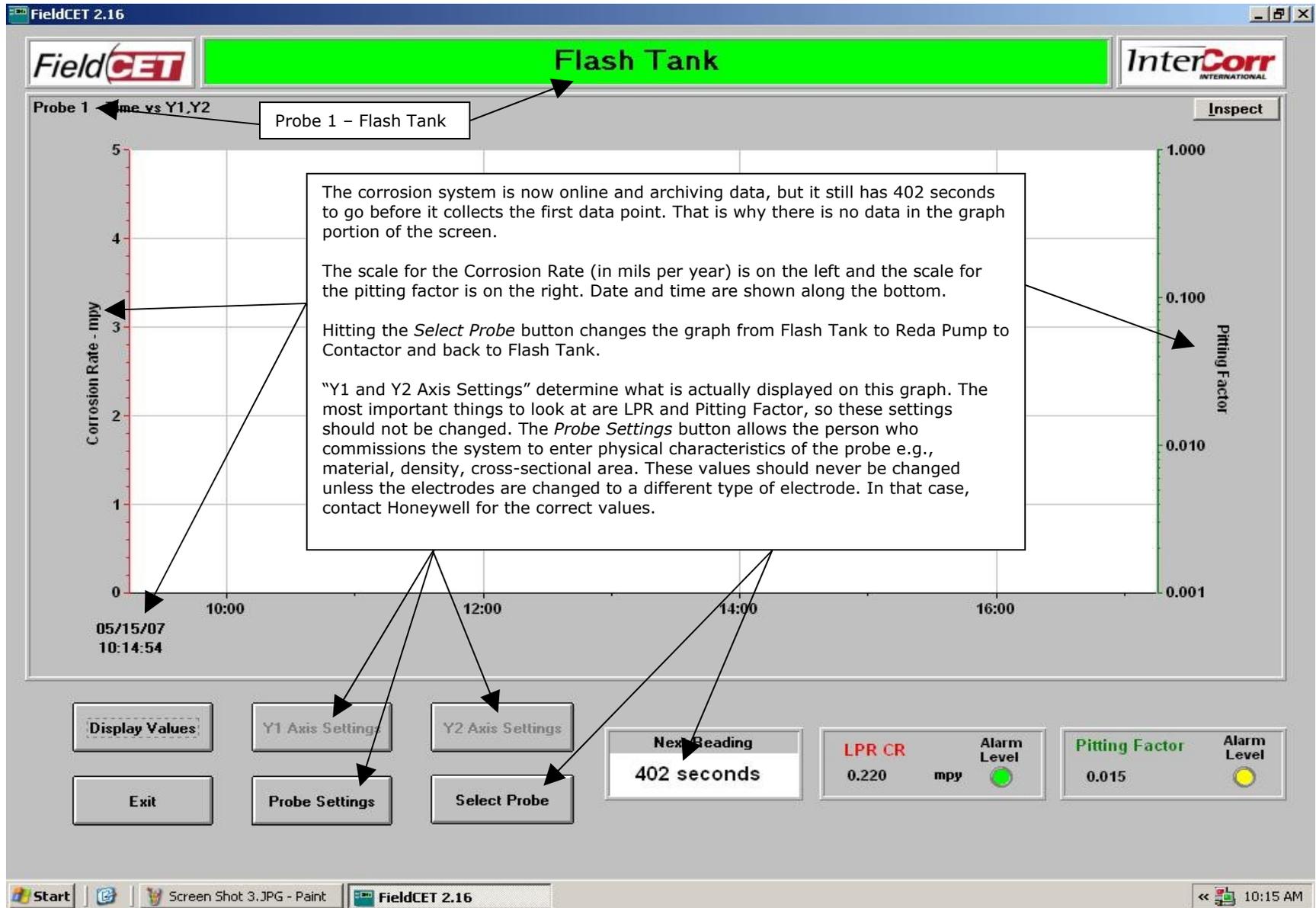
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The screenshot shows the FieldCET 2.16 software interface. At the top, there are logos for FieldCET and InterCorr INTERNATIONAL. Below them is a 'Settings Panel' containing three probe settings (Probe 1, Probe 2, Probe 3), each with a green status indicator, a dropdown menu set to 'Enabled', and a 'Settings' button. Below the probes is a checkbox for 'Auto Start on Reboot' (checked), a 'Corrosion Rate - units' dropdown set to 'mpy', and an 'Acquire Data' button. At the bottom, there are several buttons: 'Display Values', 'Y1 Axis Settings', 'Y2 Axis Settings', 'Exit', 'Probe Settings', and 'Select Probe'. On the right side, there are two data display boxes: 'Next Reading' showing 'File Initialization' and 'LPR CR' showing '0.000 mpy' with an 'Alarm Level' indicator (green light). Another box shows 'Pitting Factor' as '0.000' with an 'Alarm Level' indicator (green light). A text box in the center-right explains the screen's function: 'This is the first screen that is shown when the FieldCET software starts. If the "Auto Start on Reboot" checkbox is checked, this screen will appear for only a few seconds before the system automatically starts logging data. If the checkbox is not checked, then the operator will need to press the Acquire Data button otherwise no data will be collected and archived. No other changes should be necessary. Each of the three probes should already be "Enabled". If the computer needs to be restarted for any reason, the Exit button can be pressed to close the application before restarting the computer.' Arrows point from the text box to the 'Enabled' dropdowns, the 'Auto Start on Reboot' checkbox, the 'Acquire Data' button, and the 'Exit' button. The Windows taskbar at the bottom shows the Start button, open windows for 'Screen Shot 2.JPG - Paint' and 'FieldCET 2.16', and the system clock showing '10:14 AM'.



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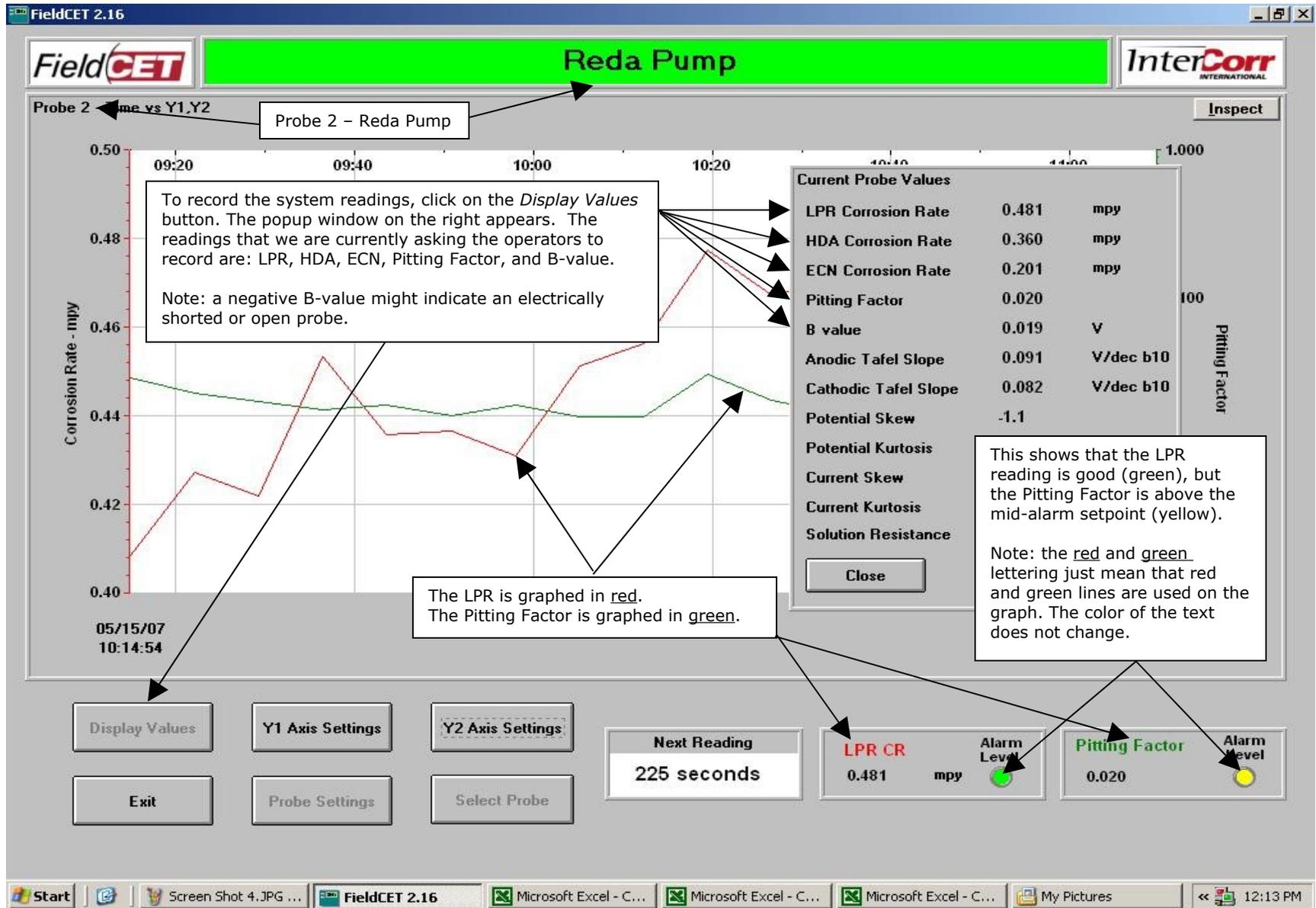
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