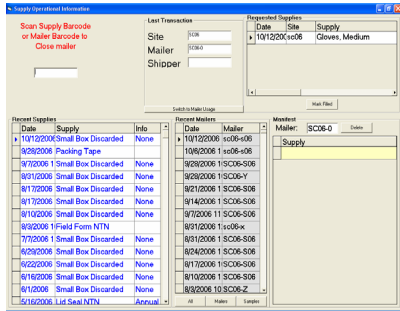
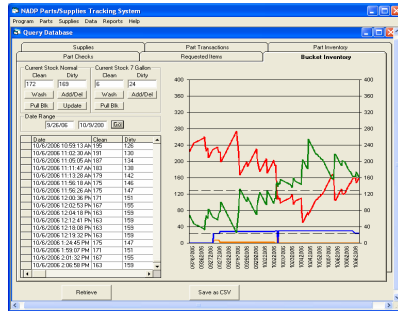


The Role of Custom Computer Programs and Databases in NADP/CAL Shipping and Receiving, Data Entry, and Laboratory Analysis

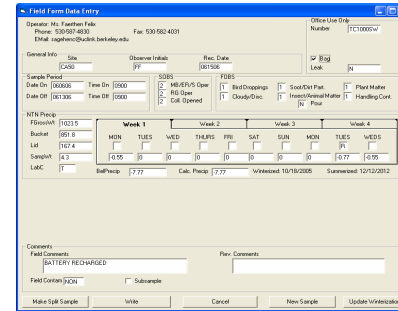
By Matt Layden and Tom Bergerhouse



The SAP Shipping and Receiving screen provides information such as requested supplies and shipping history.

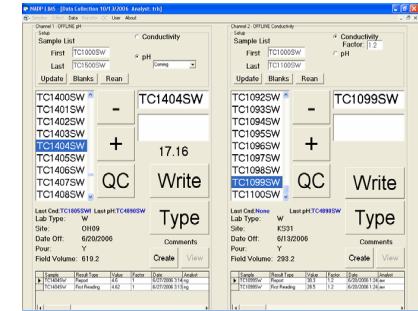


Tracking Bucket Inventory



Data Entry

Information from the Field Observer Report Forms (FORF) are entered into the Laboratory Information Management System (LIMS). The form is more than just an entry form, however. It is programmed to detect a variety of potential data entry or data completeness issues. These range from invalid or out of order dates to missing precipitation types to winterization issues.



pH/Conductivity

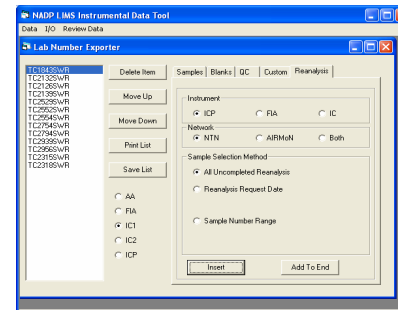
Conductivity and pH meters communicate directly with the LIMS database. Results are transmitted and stored electronically, eliminating the possibility of transcription errors. Like the FORF entry program, this program alerts the analyst to potential problems such as unusual result values and failed QC.

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

Document Supply Consumption

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

Part Replacement Record



Generating a List of Samples to be Analyzed

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

Importing and Reviewing Analysis Results

Assisting the Site Liaison
With the SAP program, the site liaison has a variety of information available to him during communications with site operators. This includes the history of parts sent to the site, supplies sent to the site, and samples received from the site. The availability of this information makes it easier to resolve issues involving site operation.

Instrumental Chemistry
The LIMS provides many tools for analysts. The program generates a sample list that can be imported into the instrument software, imports and stores analytical results, and generates control charts.

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

History of Supplies Sent to Sites and Samples Received From Sites

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

Request Supplies to be Sent to Sites



Control Charts

Date	Site	Supplier	Item	Quantity	Unit	Comments
10/15/2006	1012006	GLOVES	1012006-001	100	EA	
10/15/2006	1012006	GLOVES	1012006-002	100	EA	
10/15/2006	1012006	GLOVES	1012006-003	100	EA	
10/15/2006	1012006	GLOVES	1012006-004	100	EA	
10/15/2006	1012006	GLOVES	1012006-005	100	EA	

Viewing Data

The LIMS Query screen allows the user to view data in a number of different ways. This is useful for various Data review functions such as reanalysis, calculating ion balances, or evaluating blanks.