



Integration of Solids Data with LIMS through API

ExpressWeigh

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8/8/16

Solids Analysis Summary



Total Suspended Solids (TSS)

- An aliquot of sample (liquid) is vacuum filtered through a pre-weighed glass-fiber filter. The filter traps particles and is dried at 104°C for at least 1 hour. The filter is then cooled and weighed to obtain a post-weight. The drying, cooling, and weighing steps are repeated until a stable weight (+/- 0.5mg) is achieved.

Total Dissolved Solids (TDS)

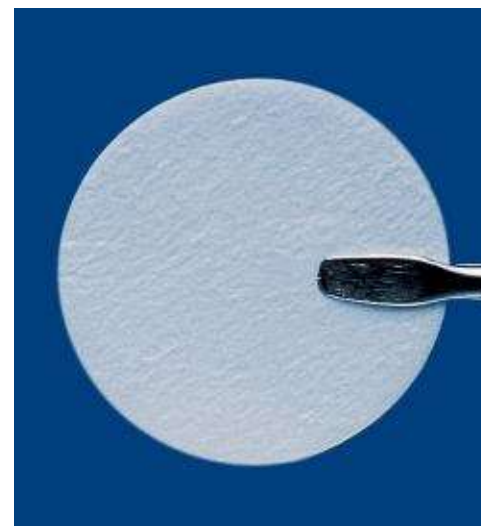
- An aliquot of sample (liquid) is vacuum filtered through a prepared glass-fiber filter. The filtrate is collected and placed into a pre-weighed vessel. The liquid portion is then evaporated from the vessel and the vessel is placed into an oven at 180°C oven. The vessel is cooled and weighed to obtain a post-weight. The drying, cooling and weighing steps are repeated until a stable weight (+/- 0.5mg) is achieved.



Preparation of Filters for TSS

Standard Methods 2540 D requirements

- The glass-fiber filter used in the TSS analysis must be prepared and weighed to method specifications.
 - Filter is washed with under vacuum with 3 successive 20-mL portions of reagent-grade water.
 - Dry in an oven at 103 – 105°C for 1 hour.
 - Cool in a desiccator to balance temperature and weigh.
 - Repeat the cycle of drying, cooling, desiccating, and weighing until weight change is +/- 0.5mg.





Preparation of Vessels for TDS

Standard Methods 2540 C requirements

- The vessel used in the TDS analysis must be prepared and weighed to method specifications.
 - Wash vessel to remove residue if used prior to current analysis.
 - Heat the clean vessel at 180°C for 1 hour in an oven.
 - Cool in a desiccator to balance temperature.
 - Weigh immediately before use.



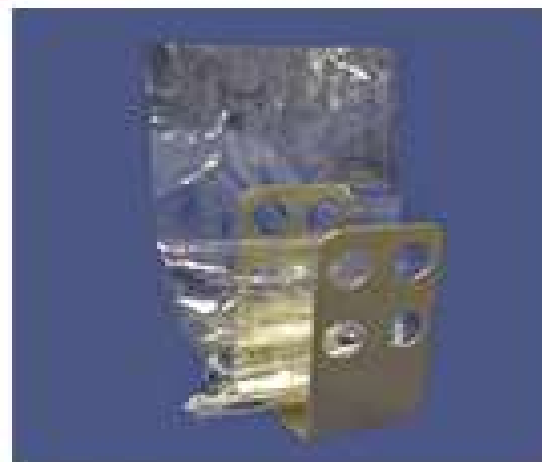
Pre-Weighed Products



Environmental Express offers products for both the TSS and TDS analysis that are already prepared per method requirements to save the laboratory time and money.



ProWeigh



StableWeigh

Data Traceability Challenges



How does the laboratory ensure that the pre-weighed products purchased meet the method QC/QA requirements laid out in the analytical method?

Environmental Express Filter Data

Please enter your box or pan ID to access filter data:

Submit

F93447MM-X

DoubleWeigh Filters for TSS, 47MM, 100pk
Lot Number: 600006-3239-R2



← Box I.D.

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Data Traceability Challenges



Environmental Express Filter Data

Enter New Box/Pan ID

[Click to Download Filter Data for Box 201875](#)

Item No.: F93447MM-X - DoubleWeigh Filters for TSS, 47mm, 100pk

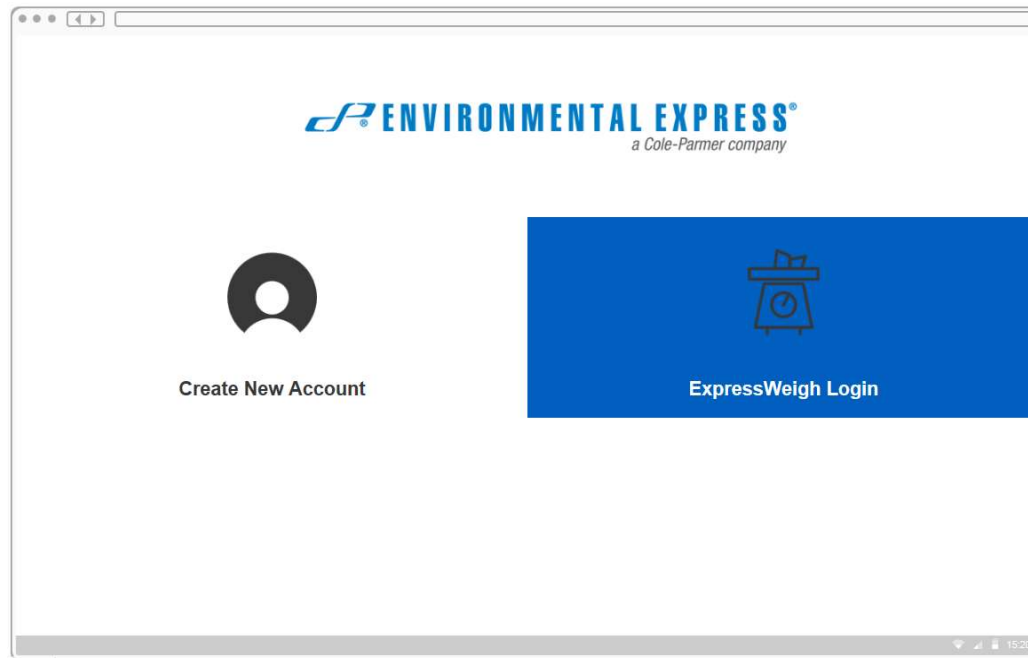
Box ID	ID	Weight 1	Weight 2	Lot
201875	FG3SN	0.1202	0.1202	600014
201875	FG3SY	0.1193	0.1194	600014
201875	FG6DT	0.1143	0.1146	600014
201875	FG6DW	0.1165	0.1168	600014
201875	FG6E4	0.1143	0.1144	600014
201875	FG6E7	0.1189	0.1191	600014
201875	FG6E9	0.1083	0.1083	600014

Data Traceability Challenges



Auditors still require traceability from the EE website through the data entry / collection process.

- Currently not a way to show this process within one contained system.
- ExpressWeigh offers a way to do just this.
 - Web-based program accessed through the EE website
 - GUI interface

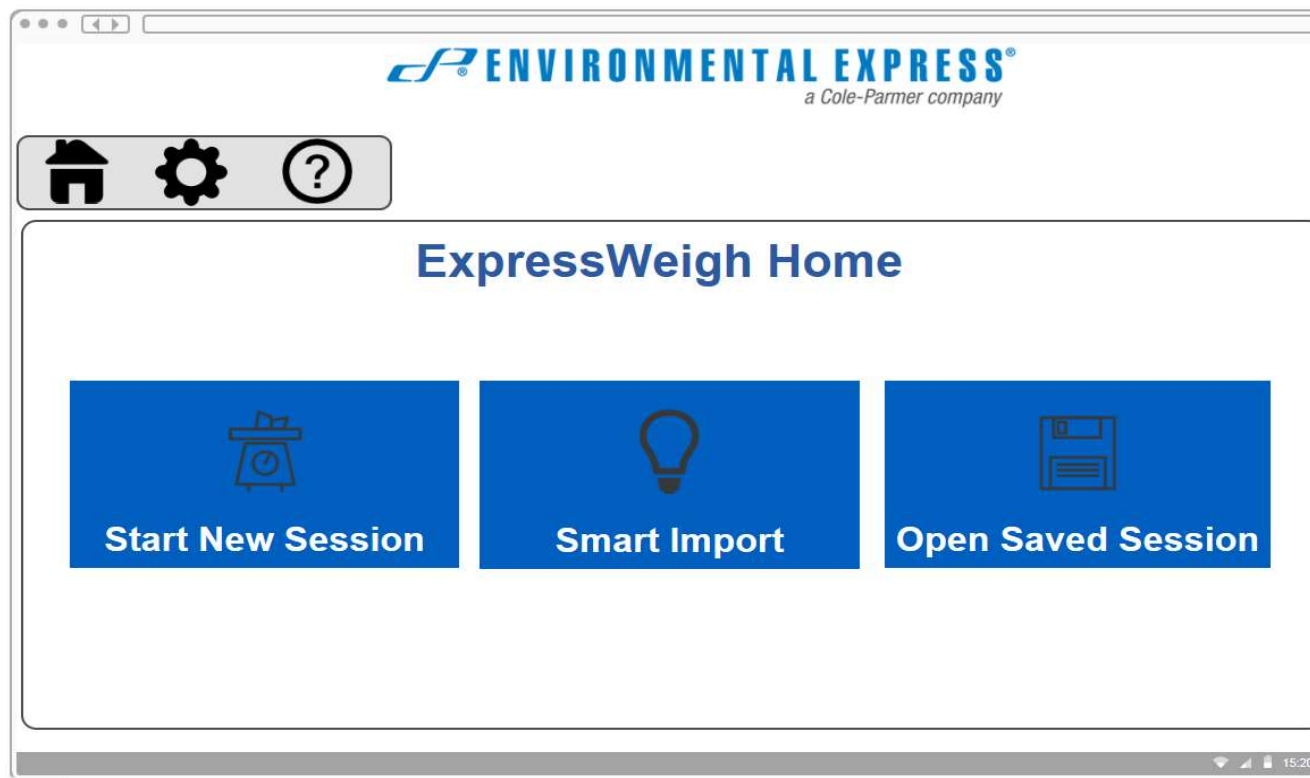


ExpressWeigh



Option to enter data manually or import data

- Data can be imported from EE website (ProWeigh and/or StableWeigh weights)
- Data can be imported from LIMS system (Sample IDs, etc)



ExpressWeigh – Data Import



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Home Settings Help

Smart Import

Enter Box or Pan ID Below

201875

Where is my box or pan ID?

Submit

ENVIRONMENTAL EXPRESS[®]
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Home Settings Help

Smart Import

ID: 201875 Item No: F93447MM-X Item: DoubleWeigh Filters for TSS, 47mm, 100pk

View Data

Start Lab!

ExpressWeigh will import ProWeigh or StableWeigh data directly from the EE website

ExpressWeigh – QC Management



ExpressWeigh has the ability to assign limits for QC samples and other parameters.

A screenshot of the ExpressWeigh Settings web application. The interface is titled 'ExpressWeigh Settings' and includes a navigation bar with a home icon, a settings gear icon, and a help icon. The main content area is divided into three sections: 'Lab Users', 'QC Management', and 'Sample Management'. The 'Lab Users' section lists four users: Johnney Appleseed, Dennis Pope, Sell Out, and Lindsey Gihga, each with a delete icon (X). The 'QC Management' section contains a table for setting limits for various parameters, including Stability (mg), Blank (mg), Duplicate (%), Control 1 (mg/L), Control 2 (mg/L), and Total Residue (mg). Each row has input fields for 'Insert value', 'mg' or '%', and 'TO' with corresponding units. The 'Sample Management' section lists four samples: Sample A, Sample B, Sample C, and Sample D, each with a delete icon (X). There are 'Add User', 'Add Sample', and 'Update' buttons at the bottom of their respective sections. The bottom status bar shows the time as 15:20.

Lab Users		
Johnney Appleseed		X
Dennis Pope		X
Sell Out		X
Lindsey Gihga		X
<button>Add User</button>		

QC Management		
Stability (mg)	Insert value >	mg TO mg
Blank (mg)	Insert value >	mg TO mg
Duplicate (%)	Insert value >	% TO %
Control 1 (mg/L)	Insert value >	mg/L TO mg/L
Control 2 (mg/L)	Insert value >	mg/L TO mg/L
Total Residue (mg)	Insert value >	mg TO mg
<button>Update</button>		

Sample Management	
Sample A	X
Sample B	X
Sample C	X
Sample D	X
<button>Add Sample</button>	

ExpressWeigh – Data Entry



The screenshot shows the ExpressWeigh data entry interface. At the top, there is a navigation bar with a home icon, a settings gear icon, and a help question mark icon. Below this, the 'Lab Name' field is prominently displayed. To the right, a metadata box contains the following information: Lab User: Johnney Appleseed, Method Type: Suspended Solids, Batch ID: A1234567a, and Sample Type: DirtA12-1. The main data entry area is divided into two rows. The first row contains 'FG3SN', '0.1202', and '0.1202'. The second row contains 'Sample 101', '0.1251', and '0.1249'. Below the data entry area, there are three radio buttons for 'Standard', 'Blank', and 'Duplicate', all of which are currently selected. To the right of these buttons is a 'Volume' dropdown menu with options for '40 mL', '60 mL', '100mL', and '200 mL'. At the bottom right, there are two buttons: 'Save & Exit' and 'Finish Lab'. The bottom status bar shows a Wi-Fi icon, a signal strength icon, a battery icon, and the time '15:20'.

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Home Settings Help

Lab Name

Lab User: Johnney Appleseed
Method Type: Suspended Solids
Batch ID: A1234567a
Sample Type: DirtA12-1

< Back Filter: 1 of 1 Next >

FG3SN	0.1202	0.1202
Sample 101	0.1251	0.1249

☒ Standard
☒ Blank
☒ Duplicate




Volume
40 mL
60 mL
100mL
200 mL


Save & Exit Finish Lab

15:20

ExpressWeigh – Assigning QC Samples






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Lab Name

Lab User: Johnney Appleseed

Method Type: Suspended Solids

Batch ID: A1234567a

Sample Type: DirtA12-1

[< Back](#)Filter: 2 of 2[Next >](#)

FG3SY	0.1193	0.1194
Sample 101 DUP	0.1242	0.1244

☒ Standard

☒ Blank

☒ Duplicate

40 mL

Volume

60 mL

100mL

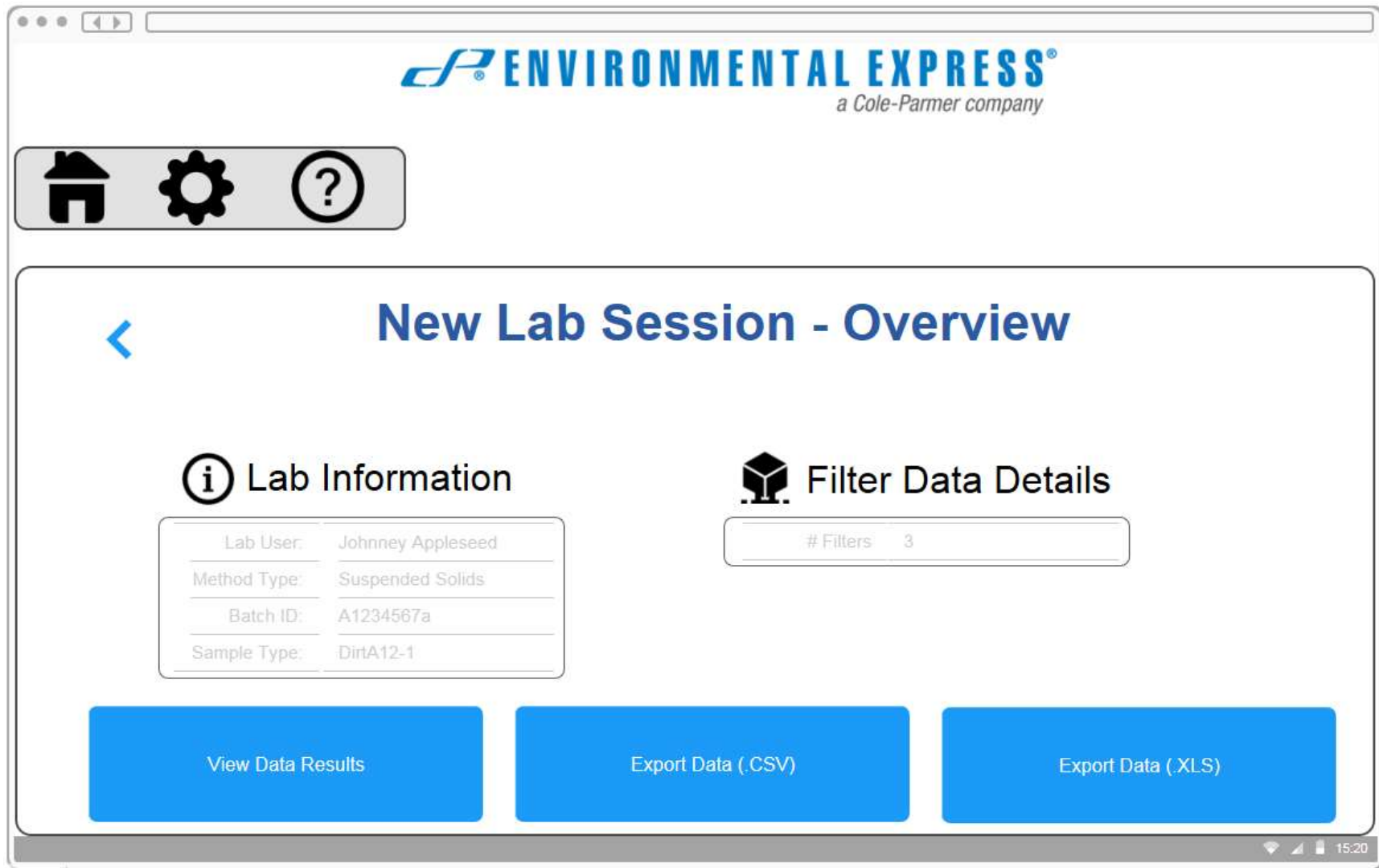
200 mL

Save & Exit

Finish Lab

 15:20

ExpressWeigh – Data Results




The screenshot displays the 'New Lab Session - Overview' page of the Environmental Express web application. The page features a navigation bar with a home icon, a settings gear, and a help question mark. Below the navigation bar, the title 'New Lab Session - Overview' is prominently displayed. The main content area is divided into two sections: 'Lab Information' and 'Filter Data Details'. The 'Lab Information' section contains a table with the following data:

Lab User:	Johnney Appleseed
Method Type:	Suspended Solids
Batch ID:	A1234567a
Sample Type:	DirtA12-1




The 'Filter Data Details' section shows a box with the text '# Filters 3'. At the bottom of the page, there are three large blue buttons: 'View Data Results', 'Export Data (.CSV)', and 'Export Data (.XLS)'. The footer of the page includes the Environmental Express logo and the text 'a Cole-Parmer company'.

ExpressWeigh – Viewing Data Results






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ExpressWeigh Lab Results

 **Lab Information**

Lab User: Johnney Appleseed

Method Type: Suspended Solids




Batch ID: A1234567a

Sample Type: DirtA12-1

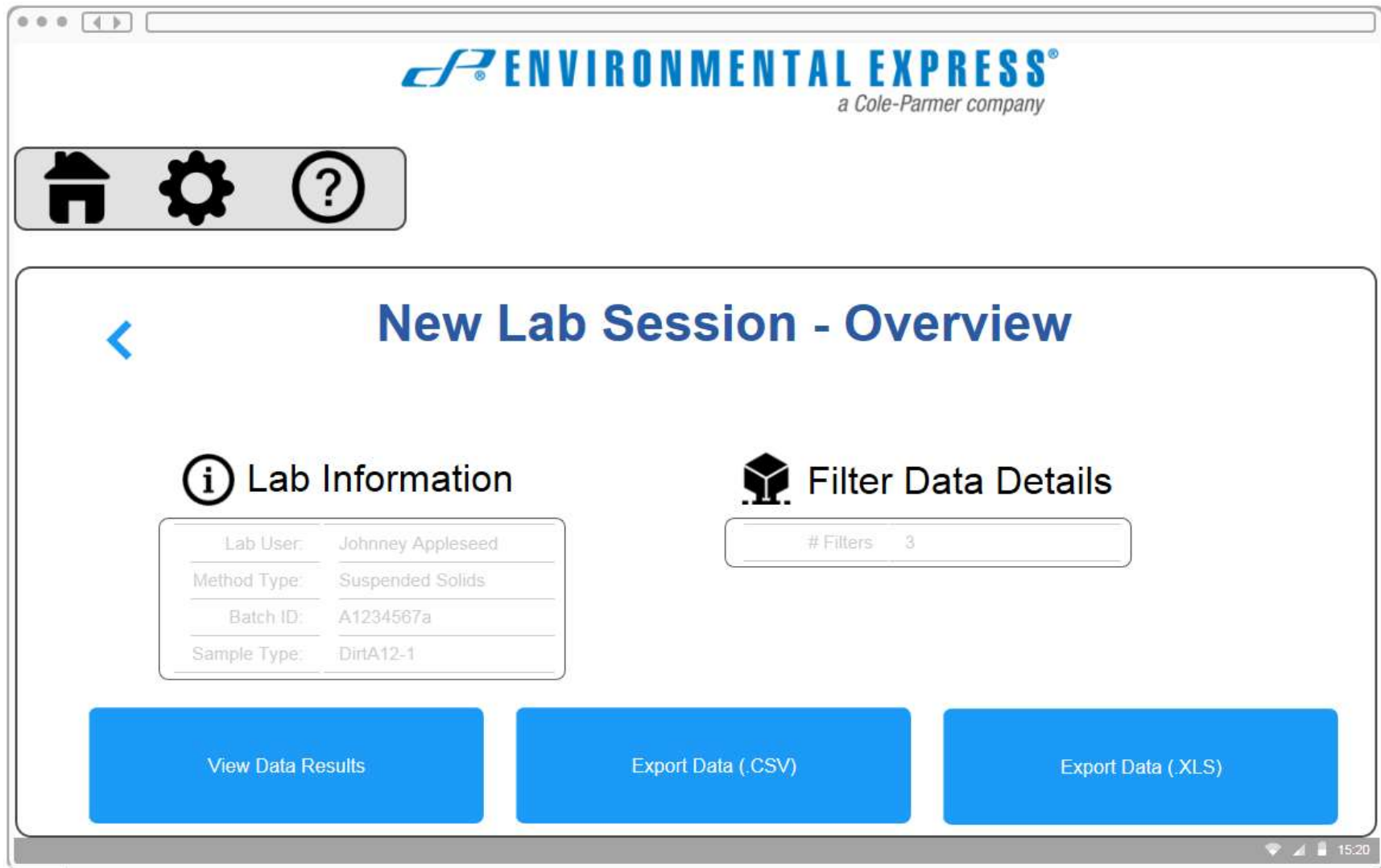
FilterData : FilterData

Filter ID	Timestamp	Pre-Weight 1	Pre-Weight 2	Sample Volume	Post-Weight 1	Post-Weight 2	Method Type	Calculated Fin.
A12345	12:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12346	13:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12347	14:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12348	15:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12349	16:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12350	17:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128
A12351	18:51:01	0.0128	0.0128	100 mL	0.0128	0.0128	TSS	0.0128

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 15:20

ExpressWeigh – Data Results

A screenshot of a web application interface for 'ENVIRONMENTAL EXPRESS a Cole-Parmer company'. The interface shows a 'New Lab Session - Overview' screen. At the top, there is a navigation bar with a home icon, a settings gear icon, and a help question mark icon. Below this, the title 'New Lab Session - Overview' is displayed with a back arrow. The main content area is divided into two sections: 'Lab Information' and 'Filter Data Details'. The 'Lab Information' section contains a table with the following data: Lab User: Johnney Appleseed, Method Type: Suspended Solids, Batch ID: A1234567a, and Sample Type: DirtA12-1. The 'Filter Data Details' section shows '# Filters: 3'. At the bottom, there are three blue buttons: 'View Data Results', 'Export Data (.CSV)', and 'Export Data (.XLS)'. The bottom status bar shows a Wi-Fi icon, a battery icon, and the time 15:20.

ExpressWeigh – Data Export



ExpressWeigh – Demonstration



<https://pr.to/L4UCBQ/>

Questions?

