



# SDMS

(Sample Data Management System)

A Solution for LIMS Implementation

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# About us

Headquarters: Houston, TX  
Employees: 40+  
Funded: 2008  
Products: BTLIMS, Inventory Management,  
LDM, SDMS

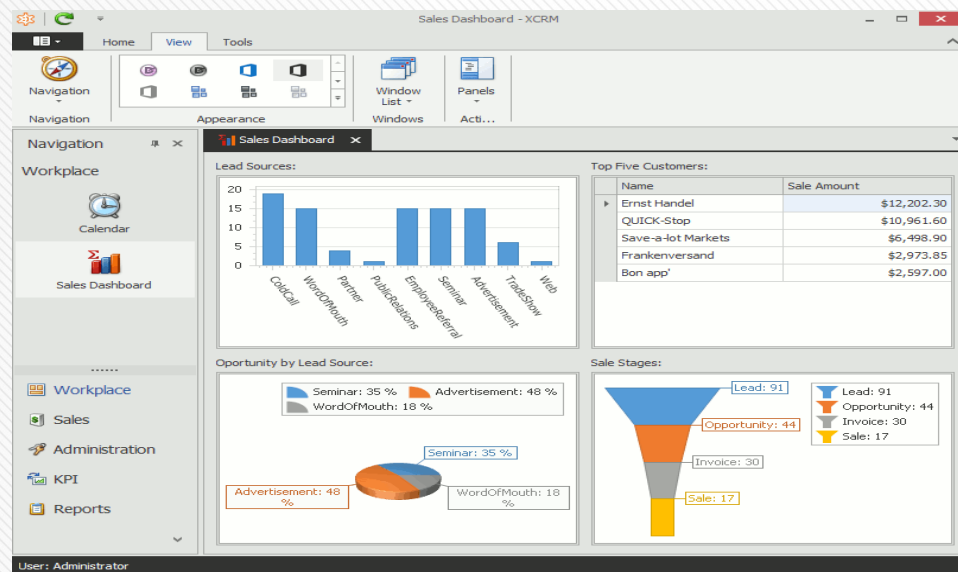


International Laboratory  
Standard

ISO/IEC17025

Lab Expert

Quality Assurance



Lab Data Master

## Sample Data Management System (SDMS)

- What is SDMS? What can SDMS do? What is it different versus LIMS?

We always face challenges during the LIMS implementations:

Customization, Customization, Customization...on:

Original sample analysis reports  
Original data entry templates

No end...



## Original Sample Analysis Reports and Data Entry Templates

The report and data entry layout design could be varied based on:

- ☐ Industries: Environmental, Industry, Food, Clinical, Microbiology, Asbestos...
- ☐ Elements: Water, Soil, Air, Gas, Media, Noise...
- ☐ Data Capture: Static Sampling; Dynamic Sampling (Frequency)
- ☐ Custom Preference: The templates that have been used for long time
- ☐ More...

Comparisons: The way regular LIMS handles vs the way clients prefer

# Normal LIMS\_ELN Data Entry: Ammonia

File Edit

Retrieve Data Correlation Check Export

Date 10/23/2018 08:30 New Calibration AttachCalibration Retrieve

### Calibration Runs

RunType	StdConc	Units	VolUsed(ml)	DIVolUsed(ml)	CalibConc	Reading	LogConc	Result	SpikeAmount	%Rec
<input checked="" type="checkbox"/> Blank	0	mg/L	0	50.0	0				0	
<input checked="" type="checkbox"/> Calibration1	0.1	mg/L	0.5	49.5	0.1	123.8	-0.9920	0.1	0.1	100
<input checked="" type="checkbox"/> Calibration2	0.5	mg/L	2.5	47.5	0.5	84.6	-0.3248	0.5	0.5	100
<input checked="" type="checkbox"/> Calibration3	1.0	mg/L	5.0	45.0	1.0	64.9	0.0105	1.0	1.0	100
<input checked="" type="checkbox"/> Calibration4	5.0	mg/L	25.0	25.0	5.0	23.6	0.7134	5.2	5.0	104

Record 1 of 6

### Calibration Chart

### Sample Run log

Sample Run log QC Run log

SampleID	Matrix	CalibrationDate	QCBatchID	VolumeUsed(ml)	Weight(g)	DF	Reading	LogConc	Result	NumericResult	Units	RptLimit	Qualifier	AnalysisDate
18101032.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	112.6	-0.8013	0.2	0.1580	mg/L	0.1		10/23/2018
18101037.02	Liquid	10/23/2018 08:30	Qb18102311	50		1	120.3	-0.9324	0.1	0.1168	mg/L	0.1		10/23/2018
18101053.02	Liquid	10/23/2018 08:30	Qb18102311	50		1	126.0	-1.0294	BRL	0.0935	mg/L	0.1		10/23/2018
18101056.01	Liquid	10/23/2018 08:30	Qb18102311	5		10	19.4	0.7849	60.9	60.9360	mg/L	1		10/23/2018
18101088.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	130.4	-1.1043	BRL	0.0787	mg/L	0.1		10/23/2018
18101122.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	128.2	-1.0668	BRL	0.0857	mg/L	0.1		10/23/2018
18101124.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	132.1	-1.1332	BRL	0.0736	mg/L	0.1		10/23/2018
18101126.01	Liquid	10/23/2018 08:30	Qb18102311	10		5.00	12.6	0.9006	39.8	39.7719	mg/L	0.500		10/23/2018
18101127.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	121.7	-0.9562	0.1	0.1106	mg/L	0.1		10/23/2018
18101347.01	Liquid	10/23/2018 08:30	Qb18102311	50		1	138.2	-1.2370	BRL	0.0579	mg/L	0.1		10/23/2018

Record 1 of 10

Export Save Edit Cancel Exit

# Normal LIMS\_ELN Data Entry: TSS

File Edit													
Retrieve Data Correlation Check Export													
Query	Sample Run Log QCSample Run Log												
	<input type="checkbox"/> SampleID	TrayID	InitialWt1(g)	InitialWt(g)	FinalWt1(g)	FinalWt(g)	WtDiff(g)	Appearance	VolumeUsed(ml)	Weight(g)	Results	NumericResults	Unit
	<input type="checkbox"/> 18101275.01	39	1.39053	1.39053	1.39087	1.39087	0.00034	CLOUDY	100		3.4	3.4	mg
	<input type="checkbox"/> 18101276.01	40	1.39774	1.39774	1.40245	1.40245	0.00471	cloudy	100		47.1	47.1	mg
	<input type="checkbox"/> 18101307.01	41	1.40177	1.40177	1.40638	1.40638	0.00461	DIRTY	10		461.0	461	mg
	<input type="checkbox"/> 18101310.01	28	1.40149	1.40149	1.40154	1.40154	0.00005	CLEAR	250		BRL	0.2	mg
	<input type="checkbox"/> 18101310.02	29	1.40010	1.40010	1.40040	1.40040	0.00030	CLEAR	250		1.2	1.2	mg
	<input type="checkbox"/> 18101310.03	30	1.39696	1.39696	1.39691	1.39691	-0.00005	CLEAR	250		BRL	-0.2	mg
	<input type="checkbox"/> 18101310.04	31	1.41160	1.41160	1.42050	1.42050	0.00890	CLEAR	250		35.6	35.6	mg
	<input type="checkbox"/> 18101347.01	33	1.41416	1.41416	1.41442	1.41442	0.00026	CLEAR	250		1.0	1.04	mg
Query	Sample Run Log QCSample Run Log												
	<input type="checkbox"/> RunType	SampleID	TrayID	InitialWt1(g)	InitialWt(g)	FinalWt1(g)	FinalWt(g)	WtDiff(g)	Appearance	VolumeUsed(ml)	Weight(g)	Results	Numeric
	<input checked="" type="checkbox"/> Method Blank		42	1.39587	1.39587	1.39586	1.39586	-0.00001		100		BRL	-0.1
	<input type="checkbox"/> Dup	18101275.01	43	1.39221	1.39221	1.39260	1.39260	0.00039	CLOUDY	100		3.9	3.9
	<input type="checkbox"/> LCS		44	1.39195	1.39195	1.43565	1.43565	0.04370		100		437.0	437



# Normal LIMS\_ELN Data Entry: Total Coliform

File Edit

Retrieve Data Correlation Check Export

Select Parameter Total Coliform Retrieve

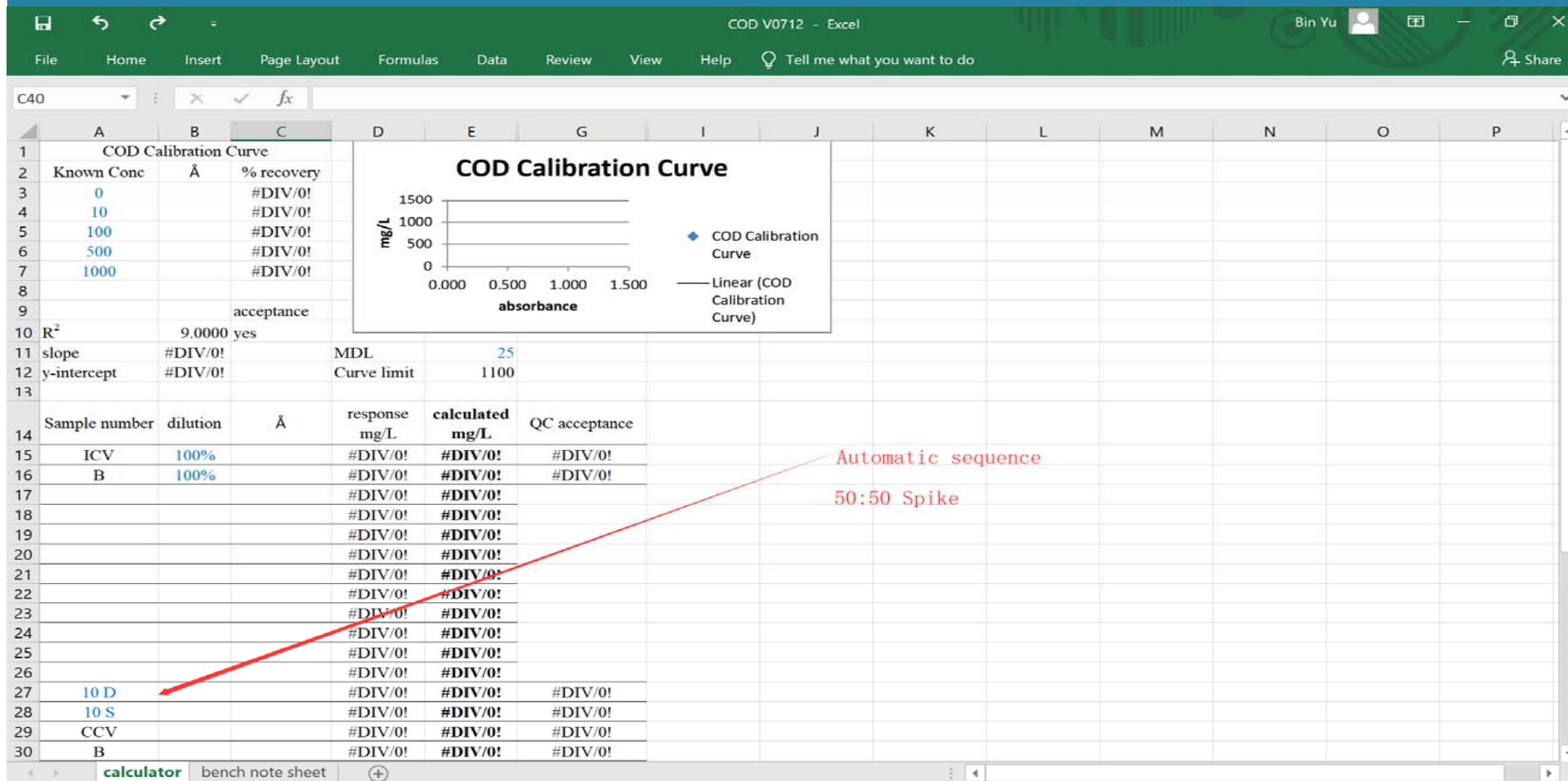
**Sample Run Log**

JobID	SampleID	QCBatchID	SetupDateTime	SetupBy	Read@DateTime	OvenTemp(C)	Cl2Check	T.Coliform	E.coli	Qualifier	C	TCEQ PWS NUMBER
<input checked="" type="checkbox"/> 18101142	18101142.01	qb18101924	10/18/2018 10:15	Raja	10/19/2018 10:15 - 10/19/2018 1...	35	-	Absent	Absent		<input checked="" type="checkbox"/>	
<input type="checkbox"/> 18101151	18101151.01	qb18101924	10/18/2018 12:50	Raja	10/19/2018 12:50 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101164	18101164.01	qb18101924	10/18/2018 14:00	Raja	10/19/2018 14:00 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101164	18101164.02	qb18101924	10/18/2018 14:00	Raja	10/19/2018 14:00 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101165	18101165.01	qb18101924	10/18/2018 14:00	Raja	10/19/2018 14:00 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101165	18101165.02	qb18101924	10/18/2018 14:00	Raja	10/19/2018 14:00 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101184	18101184.03	qb18101924	10/18/2018 15:25	Raja	10/19/2018 15:25 - 10/19/2018 1...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101186	18101186.01	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101186	18101186.02	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Present	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101186	18101186.03	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101192	18101192.01	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Present	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101192	18101192.02	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101193	18101193.01	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101193	18101193.02	qb18101924	10/18/2018 16:00	Raja	10/19/2018 16:00 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	
<input type="checkbox"/> 18101203	18101203.01	qb18101924	10/18/2018 16:35	Raja	10/19/2018 16:35 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	TX0150559
<input type="checkbox"/> 18101203	18101203.02	qb18101924	10/18/2018 16:35	Raja	10/19/2018 16:35 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	TX0150559
<input type="checkbox"/> 18101203	18101203.03	qb18101924	10/18/2018 16:35	Raja	10/19/2018 16:35 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	TX0150559
<input type="checkbox"/> 18101219	18101219.01	qb18101924	10/18/2018 17:45	Raja	10/19/2018 17:45 - 10/19/2018 2...	35	-	Absent	Absent		<input type="checkbox"/>	

Record 1 of 18

Retrieve Export Save Edit Cancel Exit

# Customer raw data entry template (Single analyte): COD





# Customer raw data entry template (multiple analytes): Monitoring

Log example - Excel

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

A13

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

A B C D E F G H I J K L M N O P Q R S T U V W X Y

Add header

Time	RAW WATER							R. MIX		Settled Water			Filtered				Distribution					OPER
	Flow	Temp	pH	Turb (ntu)	Cl <sup>2</sup> Res	Alk	Cl <sup>2</sup> Res	pH	pH	Turb (ntu)	Cl <sup>2</sup> Res	pH	Turb (ntu)	Chlorine		pH	Turb (ntu)	Chlorine		Chart		
														Free	Total			Free	Total			
0:00																						
1:00																						
2:00																						
3:00																						
4:00																						
5:00																						
6:00																						
7:00																						
8:00																						
9:00																						
10:00																						
11:00																						
12:00																						
13:00																						
14:00																						
15:00																						
16:00																						
17:00																						
18:00																						
19:00																						

DEER PARK  
EST. 1897

WATER PURIFICATION PLANT  
State Mandated Testing

DATE: \_\_\_\_\_  
DAY: \_\_\_\_\_

Do not write below this point.

Filter Data

1) 5)  
2) 6)  
3) 7)

State Mandated Testing

Sheet1 | Wellsite Data

Click to

## Customer raw data entry template (complex): TH/Methane

[illegible]

# The Solutions and Goals to be Achieved

Be able to

- 1) design any custom raw data result entry templates
- 2) create multiple level calibration regression curve
- 3) manage single or multiple parameters (analytes)
- 4) set up formulas for calculations in any field
- 5) have data parsing functions to define fields and save to database
- 6) have functions to build simple parsers for instrument data imports
- 7) have functions to design and create complex custom raw data reports
- 8) have functions to set up run sequences with automatic QC batch creation
- 9) set up multi-level result approval process



## Solve the Problems with SDMS!

Examples to demonstrate what we have achieved  
with our Sample Data Management System

BTLIMS

LIMS File Home Insert Page Layout Formulas Duration 1 Sec Progress... Retrieved...% SDMS Version 18.1.6731.30463

Export To Excel Exit Complete Save New Calibration Switch to SAMPLING Roll Back Delete Clear Edit Refresh Bind Grid Retrieve Insert to LIMS Import Files ApplyFormula My Pending Task Result Batch Review Generate Reports Template Builder LogOff

Mode View Enter Review Verify Test COD Analytical Batch Calibration ID

SDMS Result Sheet Analytical Batch Results Calibration Curve

Calibration Runs Known Conc Unit

Sample Sequence Edit

Test COD Job ID No.Runs 1 Reset Retrieve

AnalysedBy Department Add

Add QC Add Sample

Record 0 of 0

Calibration Curve

Record 0 of 0

Previous Sort

Retrieve Samples

<input checked="" type="checkbox"/>	JobID	NoSx	ProjectName	ClientName
<input checked="" type="checkbox"/>	181015001	1	Parshall Flume	Jim Beam Brands (CL)
<input checked="" type="checkbox"/>	181012012	1	Effluent - Weekly - Comp	Jim Beam Brands (FF)
<input checked="" type="checkbox"/>	181012010	1	Effluent - Monthly - Comp	Jim Beam Brands (FF)
<input checked="" type="checkbox"/>	181012002	1	Parshall Flume	Jim Beam Brands (CL)
<input checked="" type="checkbox"/>	181011010	1	Parshall Flume	Jim Beam Brands (CL)
<input checked="" type="checkbox"/>	180301033	1	Plant #1 - Outfall #002	ConAgra Foods
<input checked="" type="checkbox"/>	180301032	1	Plant #1 - Outfall #001	ConAgra Foods
<input checked="" type="checkbox"/>	170203025	1	Daily	Jim Beam Brands (CL)
<input checked="" type="checkbox"/>	160721016	1	Effluent - Weekly - Comp	Jim Beam Brands (FF)

8TLIMS

LIMS File Home Insert Page Layout Formulas Duration 1 Sec Progress... Retrieved...% SDMS Version 18.1.6731.30463

Export To Excel Exit Complete Save New Calibration Switch to SAMPLING Roll Back Delete Clear Edit Refresh Bind Grid Retrieve Insert to LIMS Import Files ApplyFormula My Pending Task Result Batch Review Generate Reports Template Builder LogOff

Mode View Enter Review Verify Test COD Analytical Batch Calibration ID

SDMS Result Sheet Analytical Batch Results Calibration Curve

Calibration Runs

Sample Sequence Edit

Automatic Run Sequence

Test COD Job ID 181015001,181012... No.Runs 1 Reset Retrieve

AnalysedBy admin Department Instrument COD #1 Reactor

Add QC

50:50 Spike  
Blank  
CCV  
Dup  
ICV

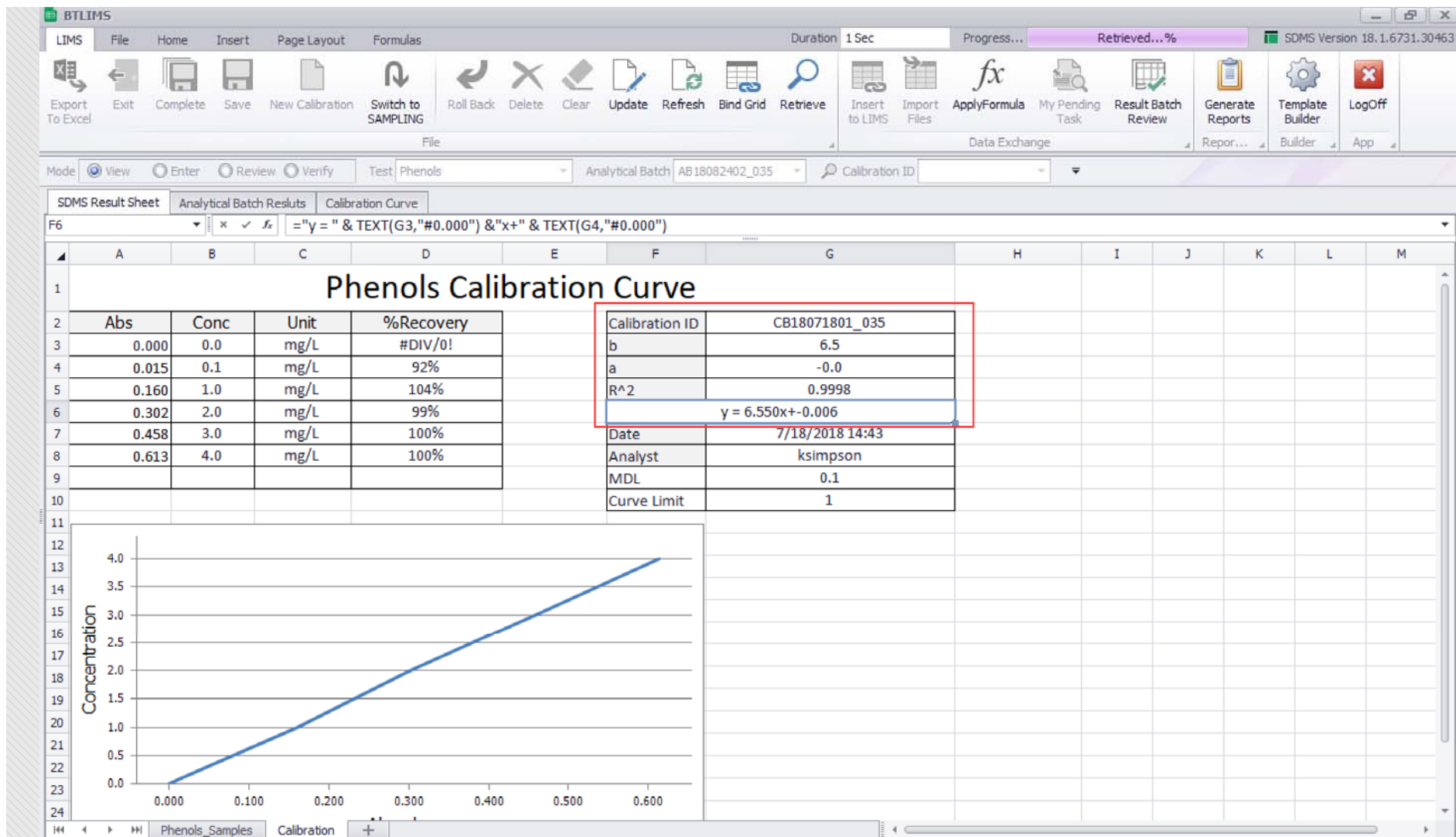
Add Sample

QCType	SampleID	RunNo	Station	Layer	collection Date	ProjectID	ClientName
ICV	ICV	1					
Blank	Blank	1					
SAMPLE	181011010.02	1			10/11/2018	Parshall Flume	Jim Beam Brands (CL)
Dup	181011010.02	1					
50:50 Spike	181011010.02	1					
SAMPLE	181012002.02	1			10/12/2018	Parshall Flume	Jim Beam Brands (CL)
SAMPLE	181012010.02	1			10/12/2018	Effluent - Monthly - ...	Jim Beam Brands (FF)
SAMPLE	181012012.02	1			10/12/2018	Effluent - Weekly - C...	Jim Beam Brands (FF)
SAMPLE	181015001.02	1			10/13/2018	Parshall Flume	Jim Beam Brands (CL)
CCV	CCV	1					
Blank	Blank	1					

Record 1 of 11

Previous OK





BTLLMS

LIMS File Home Insert Page Layout Formulas Duration 1 Sec Progress... Retrieved...% SDMS Version 18.1.6731.30463

Export To Excel Exit Complete Save New Calibration Switch to SAMPLING Roll Back Delete Clear Update Refresh Bind Grid Retrieve Insert to LIMS Import Files ApplyFormula My Pending Task Result Batch Review Generate Reports Template Builder LogOff

File Data Exchange

Mode View Enter Review Verify Test Phenols Analytical Batch AB18082402\_035 Calibration ID

SDMS Result Sheet Analytical Batch Results Calibration Curve

F9  $=IF(E9="", "", +(E9*Calibration!G$3)+Calibration!G$4)$

	B	C	D	E	F	G	H	I	J	L	M	N	S
1	Phenols Analysis Result Entry												
2	Matrix	Aqueous		Room Temp	25	Wave Lenth (nm)	254	Rpt Limit	0.1				
3	Test	Phenols		Humidity	70	Cell Lenth (cm)	10						
4	Method	EPA 420.1		Reagent ID	LT10345	Analysis Date	8/24/18 8:45						
5	Instrument	Spec 20		MDL	0.1	Analyzed By	ksimpson						
6													
7	QCType	SampleID	Dilution	A	Response	Calculated ppm	Result	Spike Amt	TrueValue	QC Acceptance	%Recovery	%RPD	Rpt Limit
8	ICV		1	0.462	3.02	3.02	3.0	3.0		YES	100.6		0.1
9	CCV		1	0.450	2.94	2.94	2.9	3.0		YES	98.0		0.1
10	Blank		1	0.000	-0.01	-0.01	<0.1			YES			0.1
11	SAMPLE	180810017.02	1	0.075	0.48	0.48	0.5						0.1
12	SAMPLE	180802001.11	1	0.055	0.35	0.35	0.4						0.1
13	SAMPLE	180808035.05	1	0.062	0.40	0.40	0.4						0.1
14	SAMPLE	180809012.02	1	0.052	0.33	0.33	0.3						0.1
15	SAMPLE	180802001.05	1	0.044	0.28	0.28	0.3						0.1
16	Dup	180802001.05	1	0.047	0.30	0.30	0.3			YES		6.7	0.1
17	50:50 Spike	180802001.05	1	0.254	1.66	1.66	1.7	3.0	1.646	YES	100.7		0.1
18	CCV		1	0.454	2.97	2.97	3.0	3.0		YES	98.9		0.1
19	Blank		1	0.000	-0.01	-0.01	<0.1			YES			0.1
20													

Phenols\_Samples Calibration +

BT LIMS

LIMS

FileHomeInsertPage LayoutFormulas

Duration1 SecProgress...Retrieved...%SDMS Version 18.1.6731.30463

Export To ExcelExitCompleteSaveNew CalibrationSwitch to SAMPLINGRoll BackDeleteClearUpdateRefreshBind GridRetrieve

Insert to LIMSImport FilesApplyFormulaMy Pending TaskResult Batch ReviewGenerate ReportsTemplate BuilderLogOff

FileData Exchange

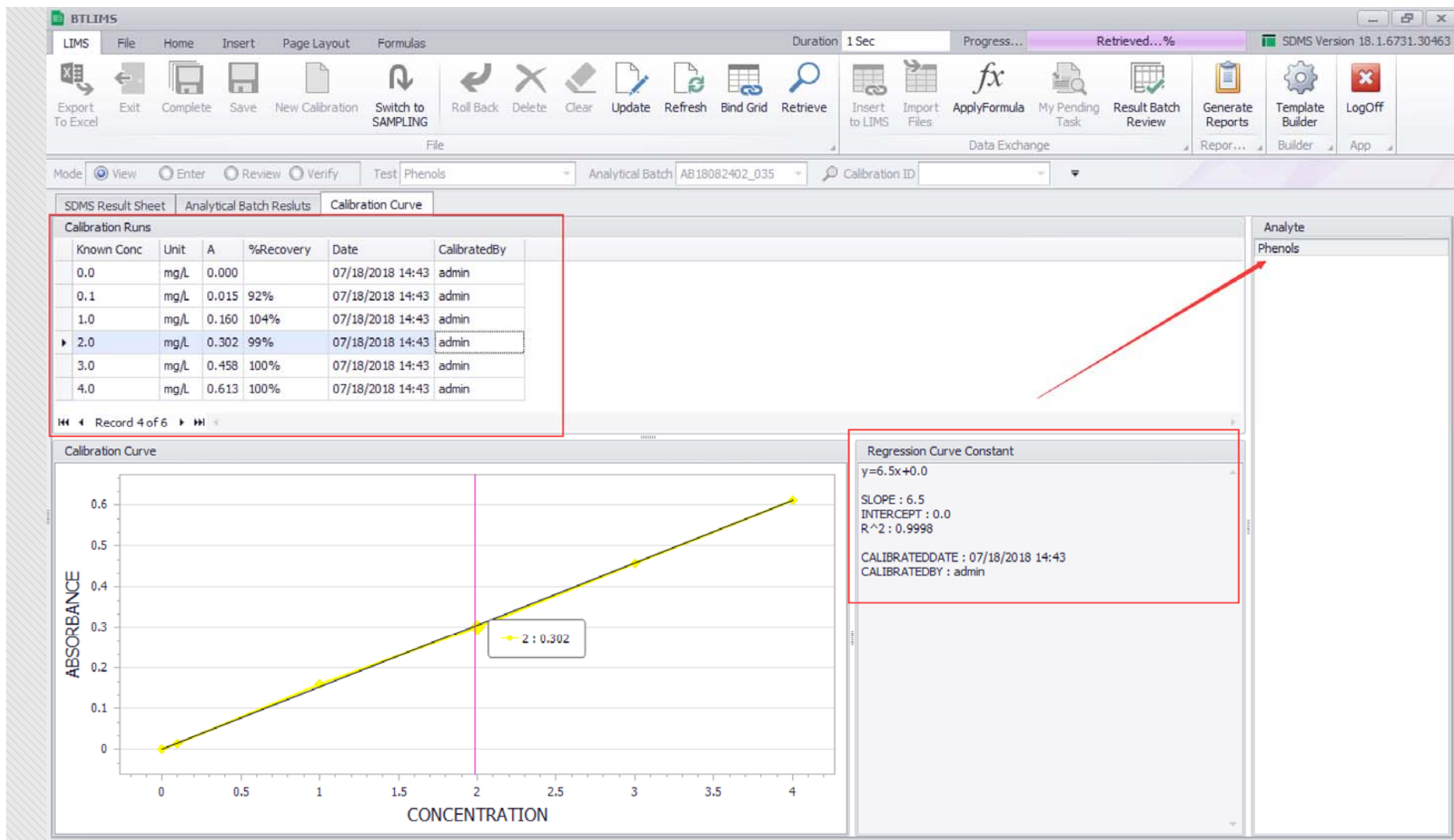
ModeViewEnterReviewVerifyTestPhenolsAnalytical BatchAB18082402\_035Calibration ID

SDMS Result SheetAnalytical Batch ResultsCalibration Curve

<input type="checkbox"/>	Run Type	QC Type	Sample ID	Dilution	Reading	Response mg/L	Calculate mg/L	Result	Spike Amt	True Value	QC Acceptance	%Recovery	RPD	MDL	RptLimit	Status	Analyzed By	Analyzed Date
<input type="checkbox"/>	STANDARD	ICV		1	0.462	3.02	3.02	3.0	3.0		YES	100.6		0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	STANDARD	CCV		1	0.450	2.94	2.94	2.9	3.0		YES	98.0		0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	METHODBLANK	Blank		1	0.000	-0.01	-0.01	<0.1			YES			0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SAMPLE	SAMPLE	180810017.02	1	0.075	0.48	0.48	0.5						0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SAMPLE	SAMPLE	180802001.11	1	0.055	0.35	0.35	0.4						0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SAMPLE	SAMPLE	180808035.05	1	0.062	0.40	0.40	0.4						0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SAMPLE	SAMPLE	180809012.02	1	0.052	0.33	0.33	0.3						0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SAMPLE	SAMPLE	180802001.05	1	0.044	0.28	0.28	0.3						0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SPIKE	Dup	180802001.05	1	0.047	0.30	0.30	0.3			YES		6.7	0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	SPIKE	50:50 Spike	180802001.05	1	0.254	1.66	1.66	1.7	3.0	1.6	YES	100.7		0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	STANDARD	CCV		1	0.454	2.97	2.97	3.0	3.0		YES	98.9		0.1	0.1	Exported	ksimpson	08/24/2018 08
<input type="checkbox"/>	METHODBLANK	Blank		1	0.000	-0.01	-0.01	<0.1			YES			0.1	0.1	Exported	ksimpson	08/24/2018 08

Record 1 of 12







BT LIMS

File Home Insert Page Layout Formulas View

Duration 0 Sec Progress... Completed%

SDMS Version 18.1.7084.30161

Export To Excel Exit Complete Save New

Mode View Enter Review

SDMS Result Sheet Analytical Batch Result

A1

	A	B
1		
2	项目编号	SHEDT19002
3	仪器型号和编	气相色谱
4	柱温	80°C
5	色谱柱	柱1(总烃柱)
6		柱2(甲烷柱)
7	标准物质名称	
8	标气批号	
9	标气浓度(PPM)	
10	标准浓度(以C计)(mg/m³)	
11	样品编号	
12		
13	C1903001.01	
14	C1903005.01	
15	C1907025.01	
16	C1907183.01	
17	C1903005.02	
18	C1907025.02	
19	C1907025.03	

1

#VALUE! 10500 #VALUE! #VALUE! #VALUE!

Sheet1

### Import Instrument Files

Find the files to import

Instrument File Type ☐ Single ☒ Multiple Chemstation GC

Agilent GC

Upload Progress

Imported Files

Clear Import

File Name	Size	Pages	Date Added	Remove
-----------	------	-------	------------	--------

Load files

Record 0 of 0



BTLMMS

LIMS File Home Insert Page Layout Formulas View Duration 0 Sec Progress... Completed% SDMS Version 18.1.7084.30161

Export To Excel Exit Complete Save New Calibration Switch to SAMPLING Roll Back Delete Clear Edit Refresh Bind Grid Retrieve Insert to LIMS Import Files ApplyFormula Generate Reports SDMS Report View Template Builder LogOff

Mode View Enter Review Verify Test 非甲烷总烃 Date Query 1M 3M 6M 1Y All Analytical Batch

SDMS Result Sheet Analytical Batch Results

A1 总烃/非甲烷总烃气相色谱法分析原始记录表

总烃/非甲烷总烃气相色谱法分析原始记录表													
项目编号	SHEDT19002191009-		样品类别	有组织废气	测定项目	非甲烷总烃	方法依据	HJ 38-2017					
仪器型号和编	气相色谱仪 (GC) AI-018			检测器	FID	进样量	1ml	气化室温度	100°C				
柱温	80°C	检测器温度	200°C	空气流量									
色谱柱	柱1(总烃柱)	玻璃微珠不锈钢填充											
	柱2(甲烷柱)	不锈钢填充柱, GDX-502.6											
标准物质名称	净化空气	氮气中甲烷	氮气中甲烷	氮气中甲烷	分析项目	结果(mg/m³)	相对误差	空白	是否合格				
标气批号					甲烷		#DIV/0!		#DIV/0!				
标气浓度(PPM)					总烃		#DIV/0!		#DIV/0!				
标准浓度(以C计)(mg/m³)													
样品编号	稀释倍数 DF	总烃	甲烷	非甲烷总烃									
		结果 (mg/m³)	结果 (mg/m³)	结果 (mg/m³)	标干排风量 (m³/h)	排放速率 (kg/h)	平均结果 (mg/m³)	平均排放速率(kg/h)	相对偏差 %	标样浓度	加标量	回收率%	质控号
C1903001.01	1			#VALUE!	17675	#VALUE!	#VALUE!	#VALUE!					
C1903005.01	1			#VALUE!	8107	#VALUE!	#VALUE!	#VALUE!					
C1907025.01	1			#VALUE!	9454	#VALUE!	#VALUE!	#VALUE!					
C1907183.01	1			#VALUE!		#VALUE!	#VALUE!	#VALUE!					
C1903005.02	1			#VALUE!	11100	#VALUE!	#VALUE!	#VALUE!					
C1907025.02	1			#VALUE!	10500	#VALUE!	#VALUE!	#VALUE!					
C1907025.03	1			#VALUE!	10500	#VALUE!	#VALUE!	#VALUE!					

Report Selector

report

Generate

Create report at run time

Select a report template

Sheet1



# SDMS Result Validation and Approval

Result Review

LIMS

Exit Export Roll Back Verify Update Edit Cancel Clear View History 1Day 3Mon 1WK 6Mon 1Mon 1Year

Date From 1/3/2019 7/3/2019 Text Search Enter text to search... 1D 1W 1M 3M 6M

Process Mode

Result Pending to Verify

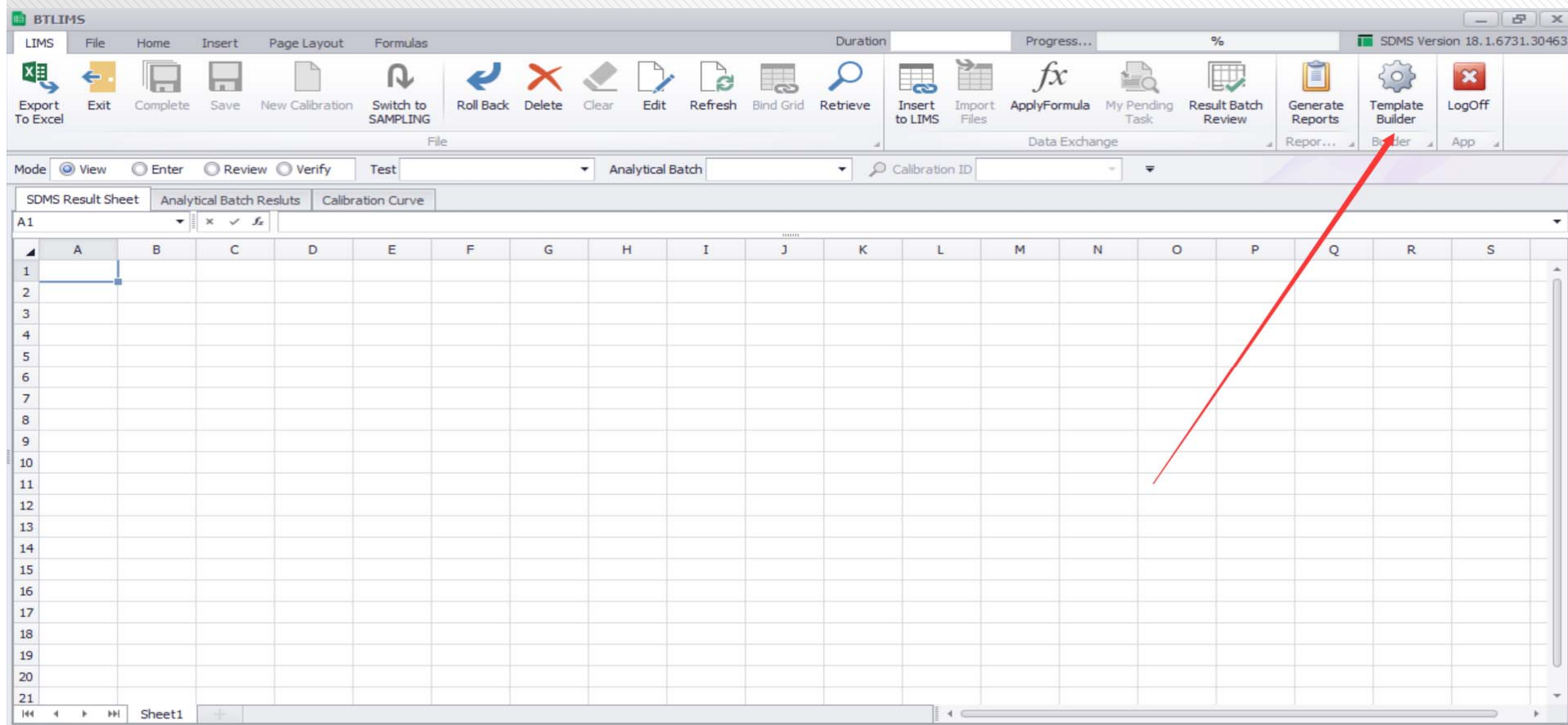
Detail	Template	DateReviewed	ReviewedBy	DateVerified	Verified By	ABID	DateAnalyzed	Remark
...	COD_1_BECK	01/31/2019 21:02	admin			AB19013101_001	1/31/2019	

Review Verify View

Exit

Record 1 of 1

## Select Template Builder



Lab Data Master



# Build an SDMS Template

SpreadSheetTemplateBuilder

File Home Insert Page Layout Formulas Data Review View Mail Merge

Export To Excel Add New Save Save As Cancel Clear Edit Update Script Scientific Data Utility Default Settings Sequence Setup

File Script Developm... Utility Default... Switch

Template

Test	Method
COD	EPA 410.4
Phenols	EPA 420.1
Total Phosphorous	SM 4500-P B.
Hexavalent Chro...	SM 3500-Cr B
MBAS	SM 5540C 21:
Cyanide, Total	EPA 335.4
Total Suspended ...	SM 2540D 21:
MBAS / DW	SM 5540C 21:
Ortho Phosphorus	SM 4500-P B.
Total Solids	SM 2540B 21:
Total Dissolved So...	SM 2540C 21:
Volatile Solids	EPA 160.4
% TS	SM 2540B 21:
%VS	EPA 160.4
Volatile Suspended...	SM 2540 E 21
MLSS	SM 2540D 21:
MLVSS	SM 2540 E 21
% TS	SM 2540B 21:
%VS	SM 2540 E 21
Volatile Solids	EPA 160.4
Fixed Dissolved S...	SM 2540C 21:

Record 1 of 37

General Info Field Info Parsing Data Data Transfer And Reporting

Test Assignment

Operation ☒ ELN ☐ Sampling

Template Name COD\_1\_BECK

Template Type Colorimetric

Matrix Aqueous

Test COD

Method EPA 410.4

Parameter Chemical Oxygen Demand

Supporting Parameter

Active ☒

Retire ☐

Created By admin

Created Date 10/26/2017 8:19 PM

Updated By admin

Updated Date 7/2/2019 4:09 PM

Calibration Level 6

Data Transfer SheetID 0

Template

D13

COD Analysis Result Entry										
Matrix	[MATRIX]	Room Temp		Wave Lenth (nm)		Rpt Lin				
Test	[TEST]	Humidity		Cell Lenth (cm)						
Method	[METHOD]	Reagent ID		Analysis Date	[ANALYZEDDATE]					
Instrument	[INSTRUMENT]	MDL	[MDL]	Analyzed By	[ANALYZEDBY]					
QCType	SampleID	Dilution	A	Response mg/L	Calculated mg/L	Result	Spike Amt	TrueValue	QC Acceptance	%Recovery
[QCTYPE]	[SAMPLEID]	1			=+(F8*D8)	=IF(G8<VALUE(\$G				

COD\_Samples Calibration

Lab Data Master

# Building a Test Template – Data Field Settings in the Sheets

The screenshot displays the 'Lab Data Master' interface, specifically the 'Template' window. The 'Template' window is divided into several sections:

- General Info:** Contains fields like 'Field Name', 'Run Type', 'QC Type', 'Sample ID', 'Dilution', 'Reading', 'Response', 'Numeric Result', 'Result', 'Spike Amount', 'Spike TV', 'True Value', 'QC Accept', 'RPD', 'MDL', 'Rpt Limit', 'Status', 'Analyzed By', 'Analyzed Date', 'Analyzed Date', 'User Defined 5', and 'QC Response'.
- Field Info:** Contains fields like 'Field Name', 'Run Type', 'QC Type', 'Sample ID', 'Dilution', 'Reading', 'Response', 'Numeric Result', 'Result', 'Spike Amount', 'Spike TV', 'True Value', 'QC Accept', 'RPD', 'MDL', 'Rpt Limit', 'Status', 'Analyzed By', 'Analyzed Date', 'Analyzed Date', 'User Defined 5', and 'QC Response'.
- Parsing Data:** Contains fields like 'Field Name', 'Run Type', 'QC Type', 'Sample ID', 'Dilution', 'Reading', 'Response', 'Numeric Result', 'Result', 'Spike Amount', 'Spike TV', 'True Value', 'QC Accept', 'RPD', 'MDL', 'Rpt Limit', 'Status', 'Analyzed By', 'Analyzed Date', 'Analyzed Date', 'User Defined 5', and 'QC Response'.
- Data Transfer And Reporting:** Contains fields like 'Field Name', 'Run Type', 'QC Type', 'Sample ID', 'Dilution', 'Reading', 'Response', 'Numeric Result', 'Result', 'Spike Amount', 'Spike TV', 'True Value', 'QC Accept', 'RPD', 'MDL', 'Rpt Limit', 'Status', 'Analyzed By', 'Analyzed Date', 'Analyzed Date', 'User Defined 5', and 'QC Response'.

The 'Template' window also includes a 'Field List' on the left, which lists all available fields. The 'Selected' window on the right lists the fields that have been selected for the template. The 'Data Transfer And Reporting' window shows the mapping of these fields to a spreadsheet, with a red arrow indicating the flow of data from the 'Field List' to the 'Selected' window and then to the spreadsheet.

The spreadsheet editor shows a table with columns for 'SampleID', 'Parameter', 'Date Time', 'Absorbance', 'Concentration', 'DF', 'Dilution', and 'Recovery'. The 'Field List' on the left of the spreadsheet editor shows the fields that are being mapped to the spreadsheet columns. A red arrow points from the 'Field List' to the 'Parameter' column, indicating the mapping of the 'Parameter' field to the 'Parameter' column.

# Design an Analysis Report

SpreadSheetTemplateBuilder

File Home Insert Page Layout Formulas Data Review View Mail Merge

Export To Excel Add New Save Save As Cancel Clear Edit Update Script Scientific Data Utility Default Settings Sequence Setup

Field List: SpreadsheetDataSource RawDataTableData...

General Info Field Info Parsing Data **Data Transfer And Reporting**

Data Transfer

Name	View	Delete
COD_Rpt	<a href="#">View</a>	<a href="#">Delete</a>

Reporting

Name	File Type	View	Delete	SubReport
COD_Rpt	DEV	<a href="#">View</a>	<a href="#">Delete</a>	<a href="#">+</a>

frmDynamicReporting

Report Designer

Print Preview HTML View Toolbox

Open... Save Cut Copy Paste Undo Redo

Report Edit Font Alignment Layout Zoom Zoom Out Zoom In Zoom View Scripts

Tool Box

- Picture Box
- Panel
- Table
- Line
- Shape
- Bar Code
- Zip Code
- Chart

Report1\*

label1 checkbox1 Place controls here to keep them together

tableCell1 tableCell2 tableCell3

Field List: DynamicDataSource SampleInfo Parameters

Properties: Detail Detail Appearance

Detail {Height: 100}

100%

Lab Data Master



# Set up a Run Sequence

The screenshot displays the 'frmSequenceSetup' and 'Sample Sequence Edit' windows in the Lab Data Master software.

**frmSequenceSetup Window:**

- Sequence Setup View:** Lists various tests and methods, including Aqueous COD, Aqueous Total Phosphorus, Aqueous Phenols, Aqueous Hexavalent, Aqueous MBAS, Aqueous Cyanide, Total, Aqueous Total Suspended Solids, Aqueous MBAS / DWI, Aqueous Ortho Phosphorus, Aqueous Total Solids, Aqueous Total Dissolved Solids, and Aqueous Volatile Solids.
- Sequence Test:** Shows the test selected (Aqueous COD) and the method (EPA 410.4).
- Frequency (°) Of QC Analysis, Once Per Every:** 6 Samples.
- Insert a Duplicate Sample In a Batch After the No.:** 2 Sample.
- Insert a Spike Sample In a Batch After the No.:** 2 Sample.
- Rate QC Preference:** Initial QC test run, Sample QC test run.
- Sequence Display:** A table showing the sequence of tests and samples.
 

QCType	QC Role	Run Role	Order	QCType	QC Role	Run Role	Order
ICV	Standard	Standard	1	Dup	Duplicate	Duplicate	1
Blank	Blank	Blank	2	50:50 Spike	Spike	Spike	2
CCV	Standard	Standard	1				

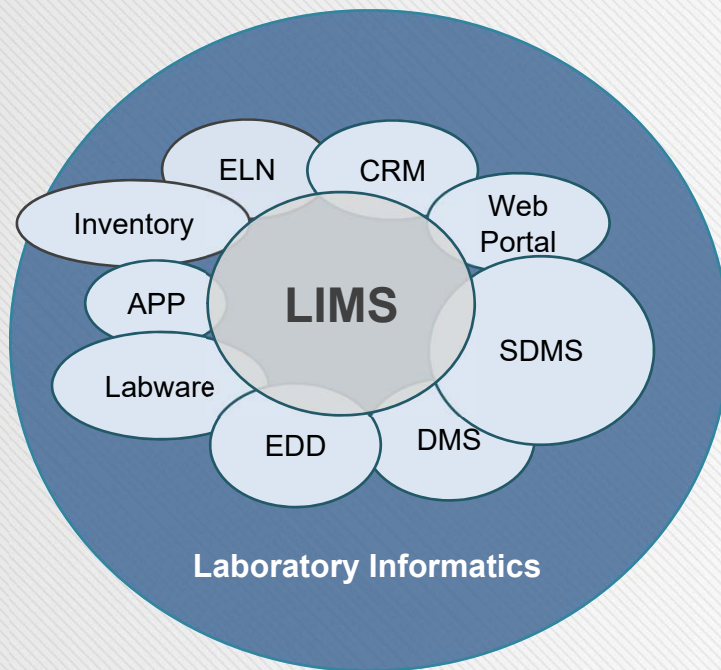
**Sample Sequence Edit Window:**

- Test:** COD
- Job ID:** 181015001, 181012...
- No. Runs:** 1
- Analysed By:** admin
- Department:**
- Instrument:**
- Add QC:** 50:50 Spike, Blank, CCV, Dup, ICV.
- Add Sample:** A table showing the sequence of samples.
 

QCType	SampleID	RunNo	Station	Layer	collection Date	ProjectID	ClientName
ICV	ICV	1					
Blank	Blank	1					
SAMPLE	181011010.02	1			10/11/2018	Parshall Flume	Jim Beam Brands (CL)
SAMPLE	181012002.02	1			10/12/2018	Parshall Flume	Jim Beam Brands (CL)
DUP	181012002.02	1					
50:50 Spike	181012002.02	1					
SAMPLE	181012010.02	1			10/12/2018	Effluent - Monthly - C...	Jim Beam Brands (FF)
SAMPLE	181012012.02	1			10/12/2018	Effluent - Weekly - Co...	Jim Beam Brands (FF)
SAMPLE	181015001.02	1			10/13/2018	Parshall Flume	Jim Beam Brands (CL)
CCV	CCV	1					
Blank	Blank	1					



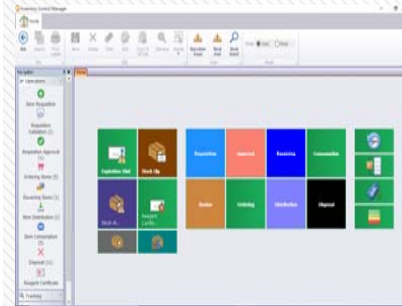
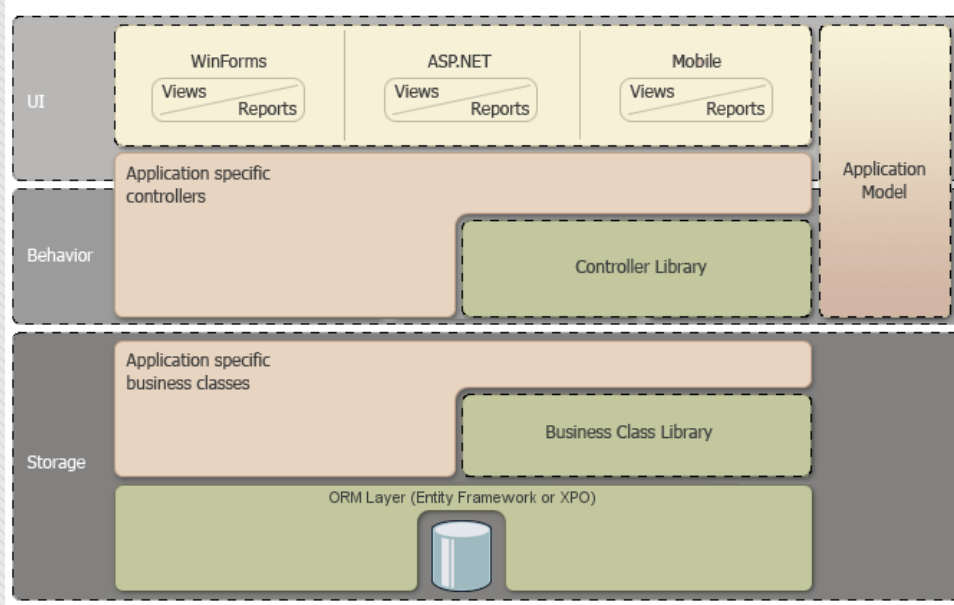
## SDMS vs LIMS



LIMS	SDMS
Covers entire workflow	A plug-in module; a tool
Industry dependent characteristics are obvious	A supplement to LIMS; Provides functionality that most LIMS do not have
Difficult to manage ongoing customization requests	Able to manage any customization on raw data result entry and report templates
Not easy to implement	Easily implemented

# Product Architecture

## Windows, Web, Mobile



A screenshot of a web application interface showing a table with columns for Item, Status, Date, and various numerical values. The table is titled 'Item Requisition'.

Item	Status	Date	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6
Item 1	Approved	10/1	1000	1000	1000	1000	1000	1000
Item 2	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 3	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 4	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 5	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 6	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 7	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 8	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 9	Partially Approved	10/1	1000	1000	1000	1000	1000	1000
Item 10	Partially Approved	10/1	1000	1000	1000	1000	1000	1000





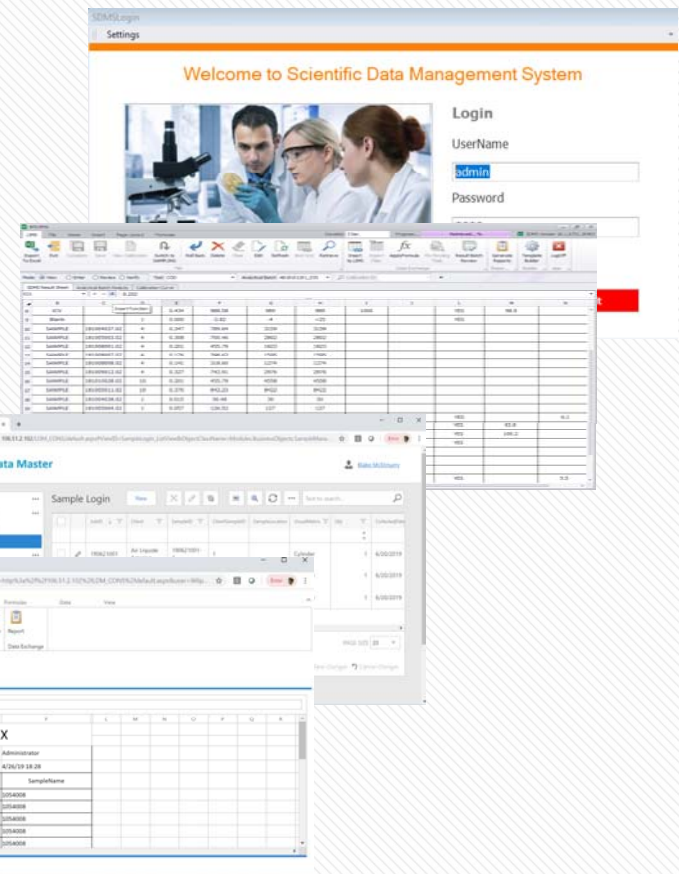
# SDMS Technology for Every Lab



Lab Data Master

# Summary

1. A practical solution to LIMS implementation
2. No programming involved
3. Easy operation and popular
4. Wide adaptability and scope of application
5. Simple integration or stand-alone
6. Improved productivity and ROI





# Thank you !

We will now be answering questions

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